NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 18-0518

Naval Air Station Jacksonville
Jacksonville, Florida

July 2019

N00207_004436
NAS JACKSONVILLE, FL
SSIC 5000-33c

LABORATORY DATA PACKAGE 18-0518 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 18-0518

Package DP-18-0232

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

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CTO-SE0375: Naval Air Station Jacksonville
Project No 100119154-SE0375
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Batch 18-0518

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Submitted to:
Tetra Tech
661 Anderson Drive Foster Plaza 7
Pittsburgh, PA 15220 USA

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: schumitzd@battelle.org 2018.08.23 12:21:30 -04'00'

QC Chemist Approval: Digitally signed by devinec@battelle.org DN: cn=devinec@battelle.org Date: 2018.08.23 12:47:47 -04'00'

Project Manager Approval: Digitally signed by Jonathan Thorn Date: 2018.08.23 13:54:44 -04'00'

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

W

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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
FRANCO PALA		FP	4-4-2018
Carla Devine		CRD	4/4/18
Denise Schumitz		DMS	4/4/18
Candace Pearman McCoy		CPM	4/4/2018
Rich Rostucci		RR	4/4/2018
Michael Mercer			4/4/2018
Christie Usher		CU	4/4/18
Kevin McInerney		KM	4/4/18
Stephanie Schultz		SAS	4/4/18
Jordan Tower		JCT	4/4/18
KRISTEN NICHOLS		KN	4/4/18
Clinton H Brown		CB	4/4/18
Matt Schumitz		MS	4-4-18
Sam Guimaraes		SG	4-4-18
Lauren Griffith		LMG	4.4.18

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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 Stenner		TWS	04/04/18
Ellyn M Fitch		EMF	12-April-2018
Gail DeRuzzo		GD	4/18/18
Zachary Willenberg		ZJW	4/20/18

Work Plan

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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@tetratech.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.

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:	**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*
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

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 ng	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.

1) 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

Deliverables Due:	8/21/2018
LIMS Reports:	*No*
Histograms:	*No*
Excel Tables:	*Yes*
EICs:	*No*
Chromatograms:	*Yes*
EDDs:	*Yes*
Comments:	• Excel data tables due in 7 days, full data package in 14 days • Data package compliant with QSM 5.1 Table B-15 • Preliminary data tables will use ND and not the LOD value, tables in full data package will follow QSM reporting criteria • Tetra Tech EDD format

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

The project schedule is presented in Table 5.

Table 5. Schedule of Laboratory Activities

Activity:	Start Date:	End Date:	TAT (days):	Comment:
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)

Labor Activity:	Hours/ Batch:	Batches:	Total Hours:	Comment:
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-J7451

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-J7451

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	J7449	JAX-RES-08152018-1045-33	08/15/2018 10:45 am	W	R0119 (NA)			
4	J7451	JAX-RES-08152018-1130-15	08/15/2018 11:30 am	W	R0119 (NA)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name:	Master_371
SOP Reference:	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
Description:	PFAS in drinking water
Matrix:	L - Liquid Samples, like water or sea water, prepared and anlyzed under the same class of detection limits.
Detection Limit Study:	5-371
Instrument:	LC-MS/MS
MQO Criteria	Universal_LC
Standard Report:	Standard Result Report

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

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Attachment 2: Test Codes

Project Test Code Name: Master_371

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
3	d5-EtFOSAA	d5-EtFOSAA	SIS			No	No

Total Analytes: 17

Subtract Peaks:

None

Sum Peaks:

None

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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 Verfication 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

Degredation Check Criteria:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application	***Universal_LC***		
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.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
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.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
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).	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the MDL	n	
Analytical Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Analyte concentration must be > 5x MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 5 times the MDL	n	

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application	***Universal_LC***		
MQO:	**Acceptance Criteria**	**Qual:**	**Corrective Action:**
Analytical Triplicate Precision	Organics results less than 30% Relative Standard Deviation (RSD). Analyte concentration must be > 5x MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 5 times the MDL	n	
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.

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ShpNo SHP-180816-02

Battelle Project No:

Sample Receipt Form

Approved: ☐ Authorized: ☐

Project Number: 112G08005 SE0375 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Thursday, August 16, 2018 11:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier **Tracking Number:** Fed Ex

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 1551 4077	Custody Seals	Intact	Intact	Therm_2	1.4	8

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): 1.4 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:** J7445 - J7452

Samples logged in by: Schumitz, Matt **Date/Time:** 08/16/2018 11:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

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ShpNo SHP-180816-02

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: 112G08005 SE0375 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Thursday, August 16, 2018 11:00 AM

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:
J7445	JAX-RES-08152018-0930-18	08/15/18 9:30	08/16/18 11:25	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7446	JAX-RES-08152018-0930-18-FRB	08/15/18 9:30	08/16/18 11:25	1	W	1.4	NA	NA	NA	R0119 (NA)			
J7447	JAX-RES-08152018-1015-34	08/15/18 10:15	08/16/18 11:25	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7448	JAX-RES-08152018-1015-34-FRB	08/15/18 10:15	08/16/18 11:26	1	W	1.4	NA	NA	NA	R0119 (NA)			
J7449	JAX-RES-08152018-1045-33	08/15/18 10:45	08/16/18 11:26	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7450	JAX-RES-08152018-1045-33-FRB	08/15/18 10:45	08/16/18 11:26	1	W	1.4	NA	NA	NA	R0119 (NA)			
J7451	JAX-RES-08152018-1130-15	08/15/18 11:30	08/16/18 11:26	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7452	JAX-RES-08152018-1130-15-FRB	08/15/18 11:30	08/16/18 11:27	1	W	1.4	NA	NA	NA	R0119 (NA)			

Total Samples: 8

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Chain-of-Custody

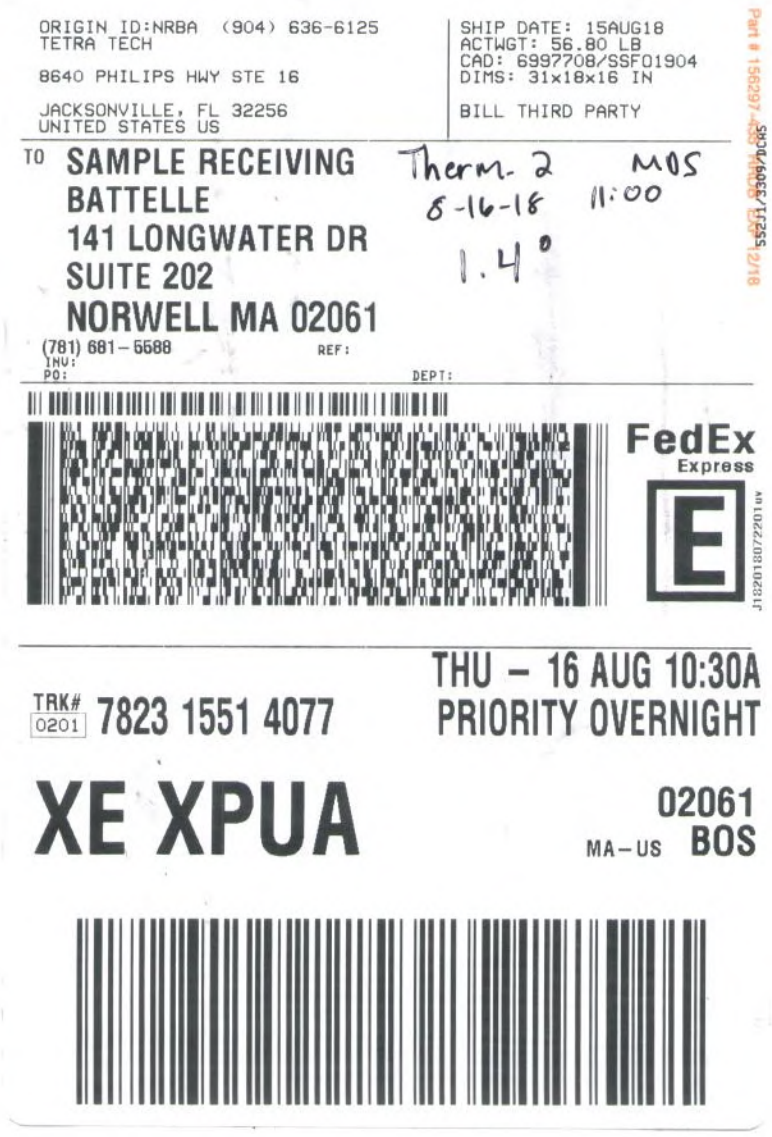
Client Contact Information: Tetra Tech	Project Manager: Mark Peterson Sampler Information (print name): David Siefken Phone: 904.334.7260 Email:	Sampling Site: NAS JAX	Site Information: Residential Wells
Project Name: 112608005 SE0375 Project No.: NAS JAX PFAS	Turnaround Time (TAT) Requested: Normal / Priority / RUSH Time Zone:		COC # 003 Page# 1 of 1

	Sample Identification	2018 Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservative: Trizma	Analysis: PFAS-537
J7445	JAX-RES-08152018-0930-18	8-15	0930	G	W	2		2
J7446	JAX-RES-08152018-0930-18-FRB	8-15	0930	G	W	1		1
J7447	JAX-RES-08152018-1015-34	8-15	1015	G	W	2		2
J7448	JAX-RES-08152018-1015-34-FRB	8-15	1015	G	W	1		1
J7449	JAX-RES-08152018-1045-33	8-15	1045	G	W	2		2
J7450	JAX-RES-08152018-1045-33-FRB	8-15	1045	G	W	1		1
J7451	JAX-RES-08152018-1130-15	8-15	1130	G	W	2		2
J7452	JAX-RES-08152018-1130-15-FRB	8-15	1130	G	W	1		1

Receipt Temperature:(°C) 1.4°	Samples Intact: (Yes) - No	Samples on Ice (Yes) No	Receipt Comments:

Relinquished by (Print/Sign)	Company	Date/Time	Received by (Print/Sign)	Company	Date/Time
David Siefken	Tetra Tech	8-15-18 / 1300	FedEx		
			Matt Schumitz	Battelle	8-16-18 1100

Comments: All Potable Water Samples



ORIGIN ID:NRBA (904) 636-6125
TETRA TECH

8640 PHILIPS HWY STE 16

JACKSONVILLE, FL 32256
UNITED STATES US

SHIP DATE: 15AUG18
ACTWGT: 56.80 LB
CAD: 6997708/SSF01904
DIMS: 31x18x16 IN

BILL THIRD PARTY

TO SAMPLE RECEIVING
BATTELLE
141 LONGWATER DR
SUITE 202
NORWELL MA 02061

(781) 681-5588 REF:
INV:
PO: DEPT:

Therm. 2 MOS
8-16-18 11:00
1.4°

FedEx
Express

TRK# 0201 7823 1551 4077

THU - 16 AUG 10:30A
PRIORITY OVERNIGHT

XE XPUA

02061
MA-US BOS

Data Tables

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

Client ID	JAX-RES-08152018-1015-34-FRB				
Battelle ID	J7448-FS				
Sample Type	SA				
Collection Date	08/15/2018				
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	0.48	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
PFTrDA	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	117				
13C2-PFDA	100				
d5-EtFOSAA	97				

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

Client ID	JAX-RES-08152018-1045-33-FRB				
Battelle ID	J7450-FS				
Sample Type	SA				
Collection Date	08/15/2018				
Extraction Date	08/22/2018				
Analysis Date	08/22/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	W				
Sample Size	0.255				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.49	U	0.22	0.49	2.45
PFHpA	0.98	U	0.33	0.98	2.45
PFOA	0.98	U	0.37	0.98	2.45
PFNA	0.98	U	0.36	0.98	2.45
PFDA	0.98	U	0.38	0.98	2.45
PFUnA	0.98	U	0.37	0.98	2.45
PFDoA	0.98	U	0.41	0.98	2.45
PFTrDA	0.98	U	0.41	0.98	2.45
PFTeDA	1.47	U	0.72	1.47	2.45
NMeFOSAA	0.98	U	0.41	0.98	2.45
NEtFOSAA	0.98	U	0.43	0.98	2.45
PFBS	0.49	U	0.21	0.49	2.45
PFHxS	0.98	U	0.33	0.98	2.45
PFOS	0.98	U	0.29	0.98	2.45
Surrogate Recoveries (%)					
13C2-PFHxA	102				
13C2-PFDA	93				
d5-EtFOSAA	89				

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

Client ID	JAX-RES-08152018-1130-15-FRB				
Battelle ID	J7452-FS				
Sample Type	SA				
Collection Date	08/15/2018				
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	0.48	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
PFTrDA	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	112				
13C2-PFDA	108				
d5-EtFOSAA	99				

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
PFDoA	1.00 U	0.42	1.00	2.50
PFTrDA	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	CR631PB-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
PFDoA	1.00	U	0.42	1.00	2.50
PFTrDA	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	117
13C2-PFDA	109
d5-EtFOSAA	99

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

Client ID	Laboratory Control Sample					
Battelle ID	CR632LCS-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				Control Limits	
Units	ng/L	Target	Recovery	Qual	Lower	Upper
PFHxA	16.34	15.00	109		70	130
PFHpA	16.60	15.00	111		70	130
PFOA	15.45	15.00	103		70	130
PFNA	15.53	15.00	104		70	130
PFDA	15.00	15.00	100		70	130
PFUnA	14.18	15.00	95		70	130
PFDoA	14.79	15.00	99		70	130
PFTrDA	14.25	15.00	95		70	130
PFTeDA	14.88	15.00	99		70	130
NMeFOSAA	16.40	15.00	109		70	130
NEtFOSAA	15.95	15.00	106		70	130
PFBS	13.85	13.28	104		70	130
PFHxS	14.12	14.18	100		70	130
PFOS	13.18	14.33	92		70	130

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	98
d5-EtFOSAA	93

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Glossary of Data Qualifiers

Flag:	Application:
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 highers 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

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0232
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/15/2018	08/16/2018	1.4

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 18-0509.

	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. There were no ion ratio exceedances above 50% RPD 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.
$\leq$ 1/3 the MRL	No exceedances noted.
	No comments.

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.

Matrix Spike (MS) / Duplicate (MSD)	A MS/MSD were prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference was calculated to measure precision.
70-130% of true value, RPD $\leq$ 30%	Not applicable.
	MS/MSD samples were not prepared with this batch of samples.

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 quadradic curve fitting.
R^2 >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.

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Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project Number: 100119154-SE0375
Preparation Batch: 18-0518
Data Set: DP-18-0232
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

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BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	CTO-SE0375: Naval Air Station Jackson	**Data Set Number:**	DP-18-0232
Project Number:	100119154-SE0375	**Prep Batch Number:**	18-0518
Entered By:	Denise Schumitz	**Entered On:**	08/23/2018
Test Code (Matrix Type):	Master_371(L)		

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 PFTrDA in this method. There is no impact on the data once this point of the calibration is removed.
DMS 8/23/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.08.23 12:34:38 -04'00'

Example Calculation for PFAS

Calculation of final concentration from area:

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

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:	CR632LCS-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:	08222018_DW.wiff
Result table:	08232018_DW
Area:	210,517.44
IS Name:	d3-MeFOSAA
IS Area:	25,373.27
IS Amount (ng/L):	400
y-intercept:	0.04293
slope:	0.82809

$$\text{Concentration} = \frac{[(210517.44/25373.27) - 0.04293]}{0.82809} * 400 * 0.001 * 1 / 0.25$$

ng/L = 15.95

Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project No.: 100119154-SE0375
Preparation Batch: 18-0518
Data Set: DP-18-0232

	CR631PB-FS (Procedural Blank)	CR632LCS-FS (Laboratory Control Sample)	J7448-FS (JAX-RES-08152018-1015-34-FRB)	J7450-FS (JAX-RES-08152018-1045-33-FRB)	J7452-FS (JAX-RES-08152018-1130-15-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/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

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Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/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	Lower	Upper
152,475.60	76,237.80	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	
CR631PB-FS(0)	Procedural Blank	8/22/18 19:56	13C4-PFOS	157,722.39	76,237.80	228,713.40		106,764.71	213,529.43	
CR632LCS-FS(0)	Laboratory Control Sample	8/22/18 20:05	13C4-PFOS	183,344.11	76,237.80	228,713.40		106,764.71	213,529.43	
J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/18 20:14	13C4-PFOS	146,482.20	76,237.80	228,713.40		106,764.71	213,529.43	
J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/18 20:23	13C4-PFOS	144,108.02	76,237.80	228,713.40		106,764.71	213,529.43	
J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/18 20:32	13C4-PFOS	161,563.51	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	

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

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Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/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	
CR631PB-FS(0)	Procedural Blank	8/22/18 19:56	13C2-PFOA	33,834.64	17,687.66	53,062.98		23,109.19	46,218.38	
CR632LCS-FS(0)	Laboratory Control Sample	8/22/18 20:05	13C2-PFOA	42,618.45	17,687.66	53,062.98		23,109.19	46,218.38	
J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/18 20:14	13C2-PFOA	31,591.60	17,687.66	53,062.98		23,109.19	46,218.38	
J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/18 20:23	13C2-PFOA	35,855.42	17,687.66	53,062.98		23,109.19	46,218.38	
J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/18 20:32	13C2-PFOA	37,864.21	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	

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

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/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	12.0	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	
CR631PB-FS(0)	Procedural Blank	8/22/18 19:56	d3-MeFOSAA	21,900.66	11,109.17	33,327.51		14,660.33	29,320.66	
CR632LCS-FS(0)	Laboratory Control Sample	8/22/18 20:05	d3-MeFOSAA	25,373.27	11,109.17	33,327.51		14,660.33	29,320.66	
J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/18 20:14	d3-MeFOSAA	19,483.27	11,109.17	33,327.51		14,660.33	29,320.66	
J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/18 20:23	d3-MeFOSAA	21,492.43	11,109.17	33,327.51		14,660.33	29,320.66	
J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/18 20:32	d3-MeFOSAA	22,094.19	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	

BATTELLE

Summary Asymmetry Report

Created with Analyst Reporter
Printed: 23/08/2018 10:44:00 AM

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	Asymmetry Factor	Passing Range
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

BATTELLE

Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 23/08/2018 10:44:41 AM

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
PFDoA_1	613.0 / 569.0	3.44	31	>10
PFDoA_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

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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	10.50	1.30	3.90	17
PFHpA	375-85-9	10.64	1.49	4.47	17
PFOA	335-67-1	10.54	1.52	4.56	17
PFNA	375-95-1	10.52	1.35	4.05	17
PFDA	335-76-2	10.45	1.62	4.86	17
PFUnA	2058-94-8	10.18	1.74	5.22	17
PFDoA	307-55-1	10.09	1.67	5.01	17
PFTrDA	72629-94-8	10.25	1.83	5.49	17
PFTeDA	376-06-7	11.47	2.47	7.41	17
NMeFOSAA	2355-31-9	10.48	1.08	3.24	17
NEtFOSAA	2991-50-6	10.06	1.29	3.87	17
PFBS	375-73-5	8.65	1.34	4.02	17
PFHxS	355-46-4	9.80	1.55	4.65	17
PFOS	1763-23-1	9.42	1.58	4.74	17

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)
PFHxA	307-24-4	0.22	0.5	2.5	2.5
PFHpA	375-85-9	0.34	1.0	2.5	2.5
PFOA	335-67-1	0.38	1.0	2.5	2.5
PFNA	375-95-1	0.37	1.0	2.5	2.5
PFDA	335-76-2	0.39	1.0	2.5	2.5
PFUnA	2058-94-8	0.38	1.0	2.5	2.5
PFDoA	307-55-1	0.42	1.0	2.5	2.5
PFTrDA	72629-94-8	0.42	1.0	2.5	2.5
PFTeDA	376-06-7	0.73	1.5	2.5	2.5
NMeFOSAA	2355-31-9	0.42	1.0	2.5	2.5
NEtFOSAA	2991-50-6	0.44	1.0	2.5	2.5
PFBS	375-73-5	0.21	0.5	2.5	2.5
PFHxS	3871-99-6	0.34	1.0	2.5	2.5
PFOS	1763-23-1	0.30	1.0	2.5	2.5

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

ID 626 04/18

Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFBS	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
13C2-PFHxA	NA	SIS	315.0 / 270.0	NA
13C2-PFDA	NA	SIS	515.0 / 470.0	NA
d5-EtFOSAA	NA	SIS	589.0 / 419.0	NA
$^{13}C_2$-PFOA	NA	IS	415.0 / 270.0	NA
$^{13}C_4$-PFOS	NA	IS	503.0 / 80.0	NA
d3-MeFOSAA	NA	IS	573.0 / 419.0	NA

Drinking Water Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF[1]	Sample Size (L)	Sample Equivalent (ng/L)[2]
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

[1] - base level dilution as part of the extraction procedure

[2] - 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

Preventive Maintenance Date:	22-Feb-2017

Request ID:	3683
Company Name:	Battelle Memorial Institute
Instrument ID:	X60666
Instrument Model:	QTRAP 5500
Instrument Serial Number:	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^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.5	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.9	Read Only
☑ CAD Medium	2.4	Read Only
☑ CAD High	3.4	Read Only
☑ CAD 12	3.4	2.4 to 4.5 x10^{-5} 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. Record10mca.

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^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.8	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	2.1	Read Only
☑ CAD Medium	2.6	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2^{e}6	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0^{e}6	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4^{e}7	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	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	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2^{e}6	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0^{e}6	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4^{e}7	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8^{e}7	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	Width Specs
	Value	Spec	Value	
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	≥1.0^{e}7	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	≥4.0^{e}7	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	≥8.0^{e}6	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	≥4.0^{e}7	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	≥7.2 ^{e}6	0.1302	<0.35
ER 922.010	0.05	3.89 e7	≥2.8 ^{e}6	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	≥2.4 ^{e}7	0.3740	<0.65
ER 922.010	0.05	2.37 e8	≥6.8 ^{e}7	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	≥4.4 ^{e}7	0.1840	<0.35
ER 601.978	0.05	7.74 e7	≥5.6 ^{e}7	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	≥1.2 ^{e}8	0.4382	<0.65
ER 601.978	0.05	2.55 e8	≥1.6 ^{e}8	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
☐ 236 OR ☑ 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10e6

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
JZ10	PFAS - 537.1 Instrument Blank	JV61	JV35	180425-01
JZ10	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

BATTELLE

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	~2.666666	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:** _____

BATTELLE

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:** _____

BATTELLE

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	~2.000000	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:** _____

BATTELLE
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:** _____

BATTELLE

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	~2.000000	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

BATTELLE

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-butanesulfonate	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-butanesulfonate	.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

BATTELLE
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

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 2:21:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JZ87

Description: PFAS - 537.1 Internal Standard 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	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

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 2:21:00 PM

BATTELLE

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

BATTELLE

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

BATTELLE

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

BATTELLE

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

BATTELLE
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

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		

Balance ID:

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

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

BATTELLE
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

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☐

Standard Laboratory ID Number: **JZ10**

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)
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	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:** 7/20/2018	**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 water

Approved By: _____ **Date:** _____

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☐

Standard Laboratory ID Number: JZ10

Description: PFAS - 537.1 Instrument Blank

Stock Id: JV61

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

Stock Id: JV62

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:
JV61	Pipette	B814659662
JV62	Pipette	B814659662

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/20/2018 **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 water

Approved By: _____ **Date:** _____

BATTELLE
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	~2.000000	03/05/23	---	---	500 uL	1	20	~0.0500

Solution Prepared By: Schultz, Stephanie	**Date Prepared:** 7/25/2018	**Expiration Date:**	7/25/2019
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:** 7/31/2018 11:39:00 AM

BATTELLE
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-butanesulfonate	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-butanesulfonate	.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

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/25/2018 **Expiration Date:** 7/25/2019

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:** 7/31/2018 11:39:00 AM

BATTELLE
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

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 2:19:00 PM

BATTELLE
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

BATTELLE
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

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JZ75

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:

Stock ID:	Type:	Battelle ID:
JV37	Pipette	C0982448K

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

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

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

BATTELLE
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	~2.000000	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

BATTELLE
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-butanesulfonate	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-butanesulfonate	.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

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

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

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

BATTELLE
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

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 2:19:00 PM

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

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

BATTELLE
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

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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

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

BATTELLE
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

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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

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

BATTELLE
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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

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

BATTELLE
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

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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

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

BATTELLE
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

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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

BATTELLE
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

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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

BATTELLE
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

BATTELLE
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-butanesulfonate	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

BATTELLE
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-butanesulfonate	.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

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

BATTELLE
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:**	AgChem 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	--	--	☐			
M2PFOA	BDO-1842	1.0000	100.00	--	--	☐			
MPFOS	BDO-1840	2.8700	100.00	--	--	☐			

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 (^{13}C) perfluoroalkylcarboxylic acid, a mass-labelled (^{13}C) perfluoroalkylsulfonate, and a mass-labelled (^{2}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,...x_n on which it depends is:

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

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 ±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).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

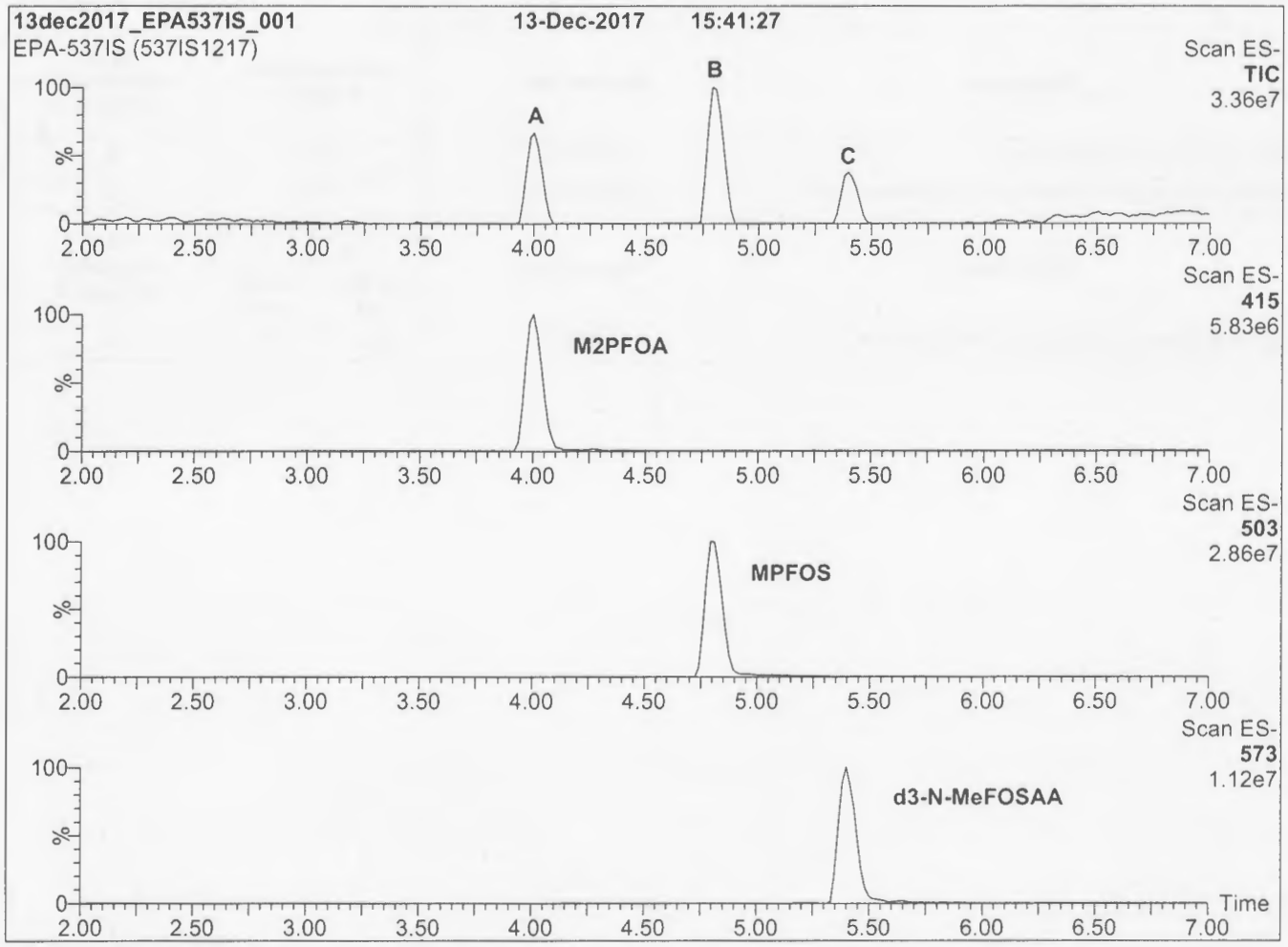
Table A: **EPA-537IS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid	M2PFOA	1000		A
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	4000		C
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate	MPFOS	3000	2870	B

Certified By: _____ **Date:** 12/22/2017
(mm/dd/yyyy)

B.G. Chittim, General Manager

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_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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

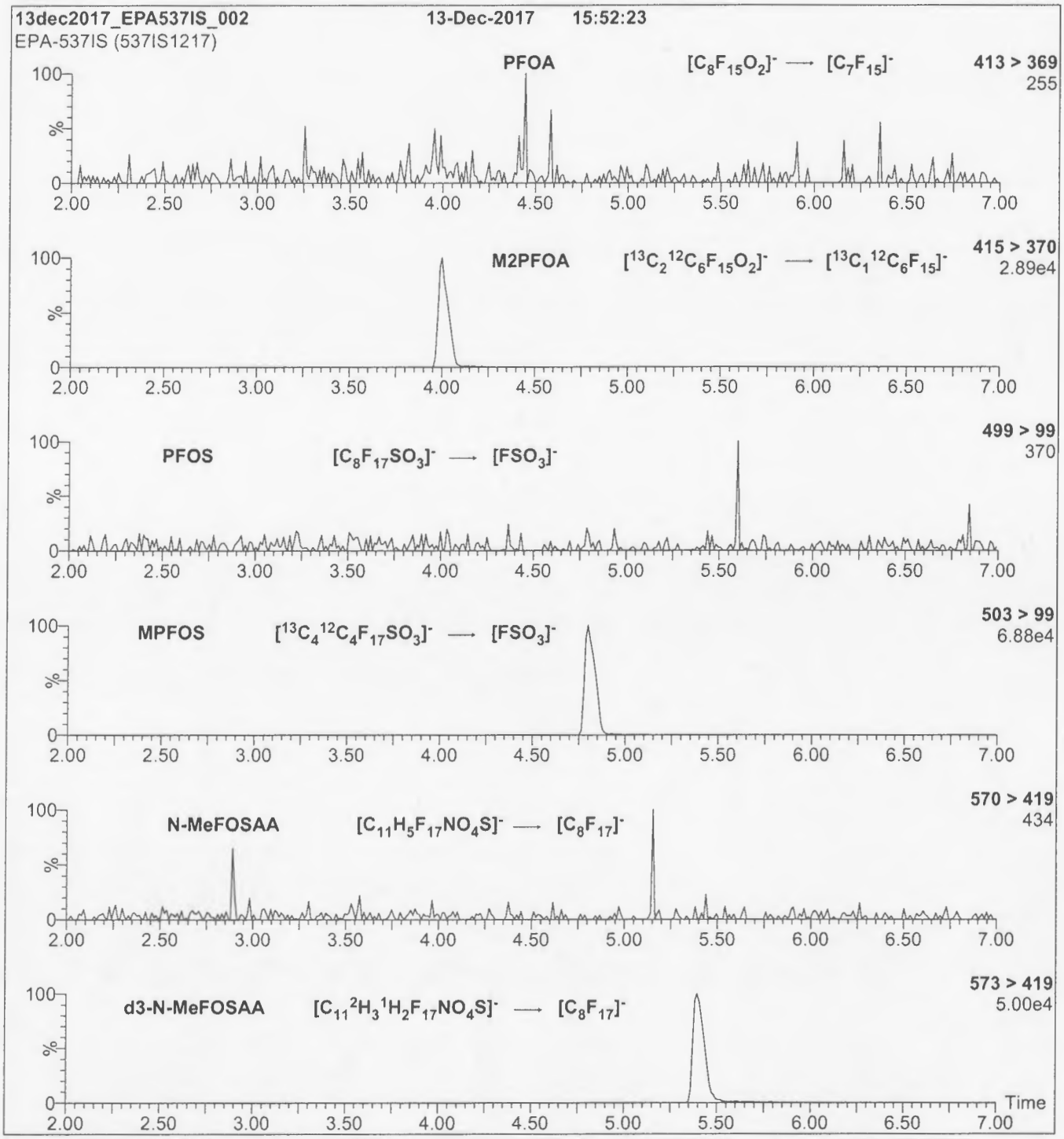
Flow: 300 µl/min

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3

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

BATTELLE
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:**	AgChem 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	--	--	☐			
13C2-PFHxA	BDO-2106	1.0000	100.00	--	--	☐			
d5-EtFOSAA	BDO-1839	4.0000	100.00	--	--	☐			

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 (^{13}C) perfluoroalkylcarboxylic acids and a mass-labelled (^{2}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

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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,...x_n on which it depends is:

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

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 ±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).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

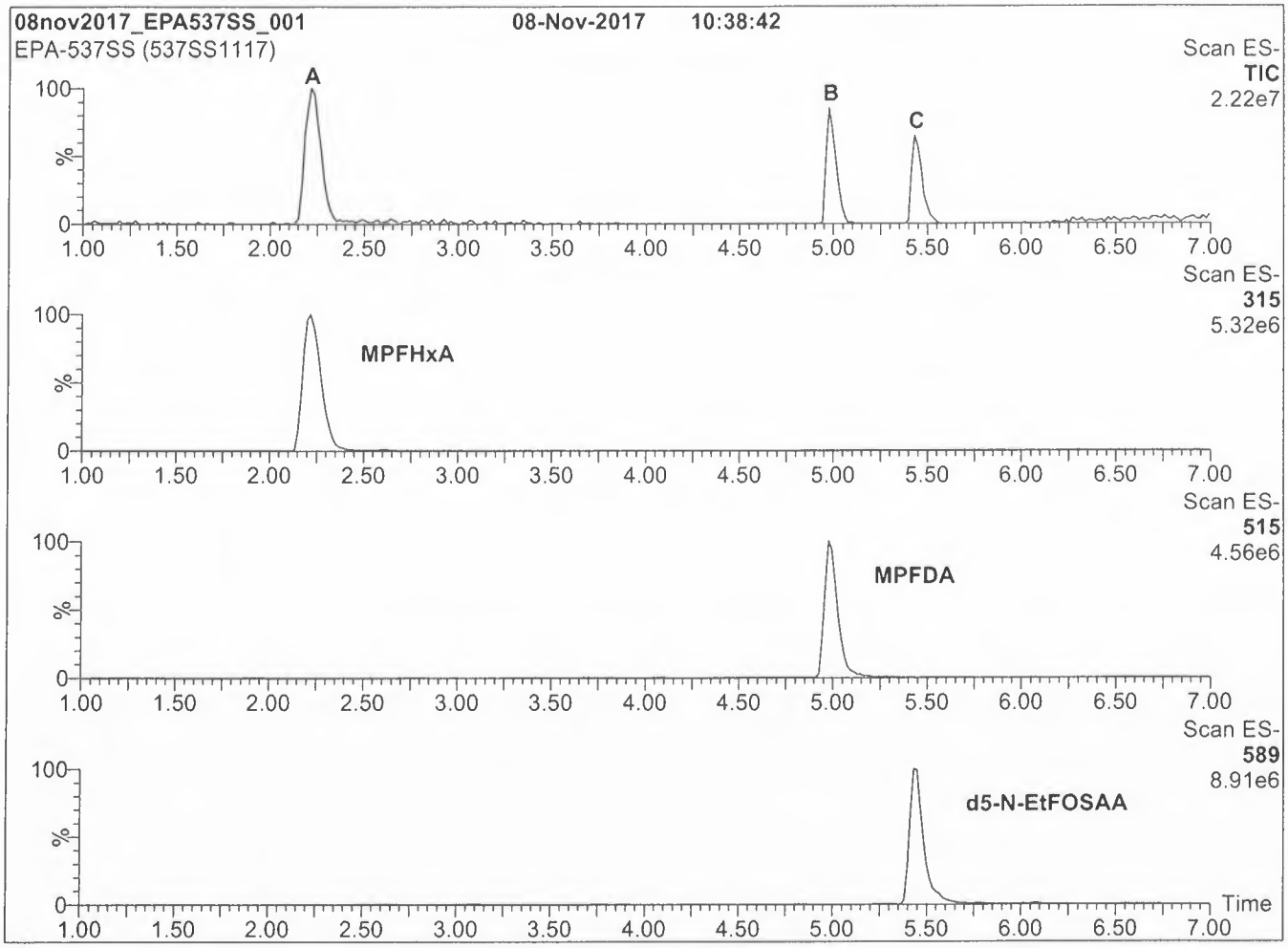
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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-$^{13}C_2$]hexanoic acid	MPFHxA	1000	A
Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid	MPFDA	1000	B
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	4000	C

Certified By: _____ **Date:** 11/13/2017
(mm/dd/yyyy)
B.G. Chittim, General Manager

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_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H_2O
(both with 10 mM NH_4OAc 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

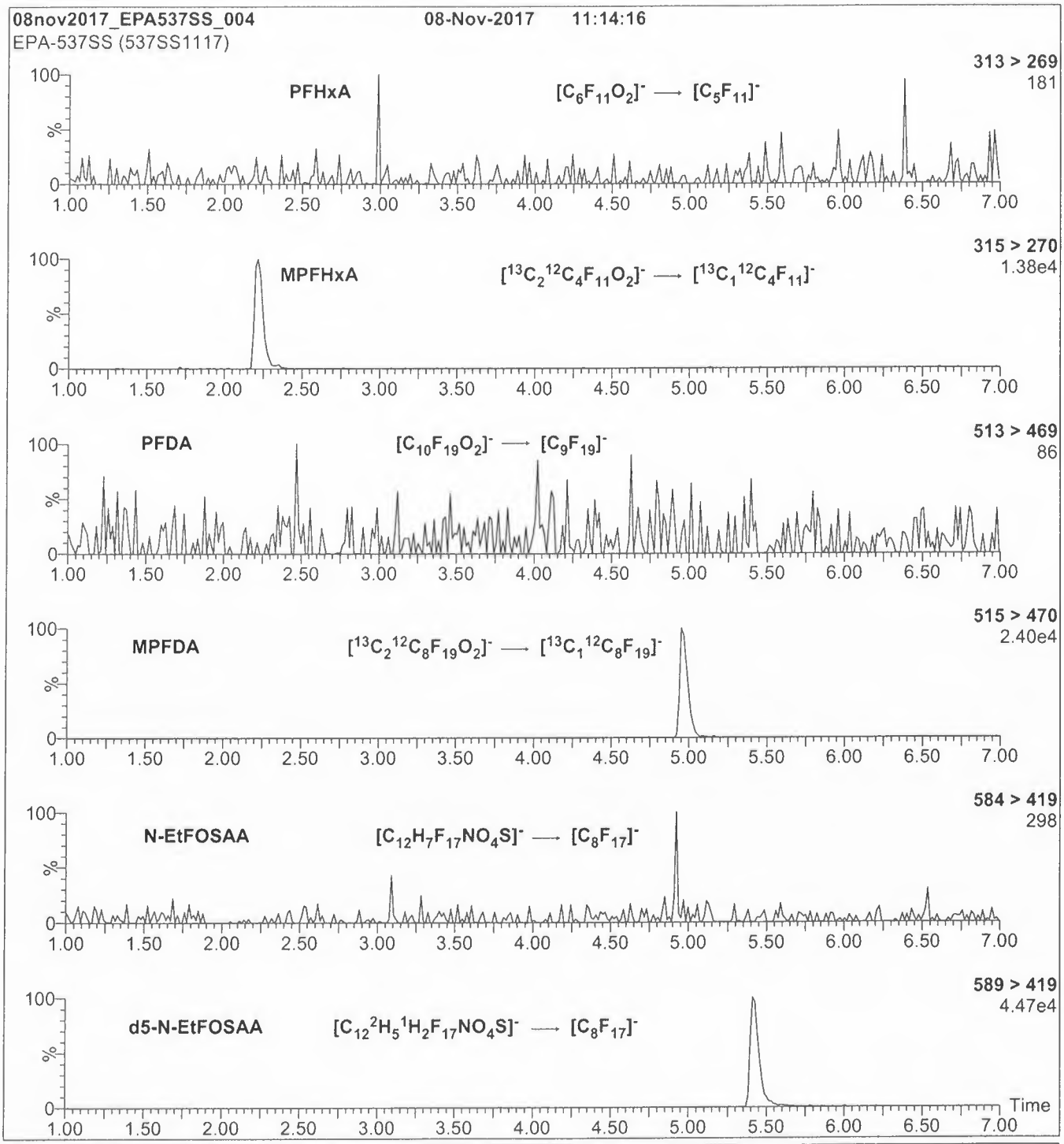
Flow: 300 µl/min

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 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3

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

BATTELLE
It can be done

BDO Id: 180425-03

Reagent Receipt Report

Approved: ☑ **Authorized** ☐

Name: EPA-537PDS (calibration)
Vendor: Wellington Laboratories
Catalogue No: EPA-537PDS
Type: Solution
Lot No: 537PDS0318
Quantity: 1 ea ml **% Moisture:**
Description: EPA-537PDS

Received: 4/25/2018
Custodian: Schumitz, Matt
Expires: 3/5/2023
Consumed:
Stored In: AgChem Laboratory - R0124

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	--	--	☐			1
N-methylperfluoro-1-octanesulfonami	2355-31-9	2.0000	100.00	--	--	☐			2
Perfluoro-1-butanesulfonate	375-73-5	1.7700	100.00	--	--	☐			3
Perfluoro-1-hexanesulfonate	355-46-4	1.8240	100.00	--	--	☐			4
Perfluoro-1-octanesulfonate	1763-23-1	1.8510	100.00	--	--	☐			5
Perfluoro-n-decanoic Acid	335-76-2	2.0000	100.00	--	--	☐			
Perfluoro-n-dodecanoic acid	307-55-1	2.0000	100.00	--	--	☐			
Perfluoro-n-heptanoic Acid	375-85-9	2.0000	100.00	--	--	☐			
Perfluoro-n-hexanoic acid	307-24-4	2.0000	100.00	--	--	☐			
Perfluoro-n-nonanoic Acid	375-95-1	2.0000	100.00	--	--	☐			
Perfluoro-n-octanoic Acid	335-67-1	2.0000	100.00	--	--	☐			
Perfluoro-n-tetradecanoic acid	376-06-7	2.0000	100.00	--	--	☐			
Perfluoro-n-tridecanoic acid	72629-94-8	2.0000	100.00	--	--	☐			
Perfluoro-n-undecanoic acid	2058-94-8	2.0000	100.00	--	--	☐			

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-butanesulfonate	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.

Approved by: Thorn, Jonathan **Approved on:** 5/2/2018 10:05:00 AM
Authorized by: **Authorized on:**

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
JNT 5/2/2018

DESCRIPTION:

EPA-537PDS is a solution/mixture of nine native linear perfluoroalkylcarboxylic acids (C_6-C_{14}), three native perfluoroalkylsulfonates (C_4 linear; C_6 and C_8 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.

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

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

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 ±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).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

Compound	Abbreviation	Concentration * (ng/ml)	Peak Assignment in Figure 1
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 [a] ✓	N-MeFOSAA: linear isomer ✓	1520	L
	N-MeFOSAA: ∑ branched isomers	480	K
N-ethylperfluorooctanesulfonamidoacetic acid [b] ✓	N-EtFOSAA: linear isomer ✓	1550	N
	N-EtFOSAA: ∑ 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 [c]	PFHxSK: linear isomer	1620	1480	E
	PFHxSK: ∑ branched isomers	378	344	D
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	1580	1460	I
	PFOSK: ∑ branched isomers	422	391	H

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] 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 ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	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 ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	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 ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)_2CF_2CF_2SO_3^-K^+$	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 ^{19}F-NMR)***

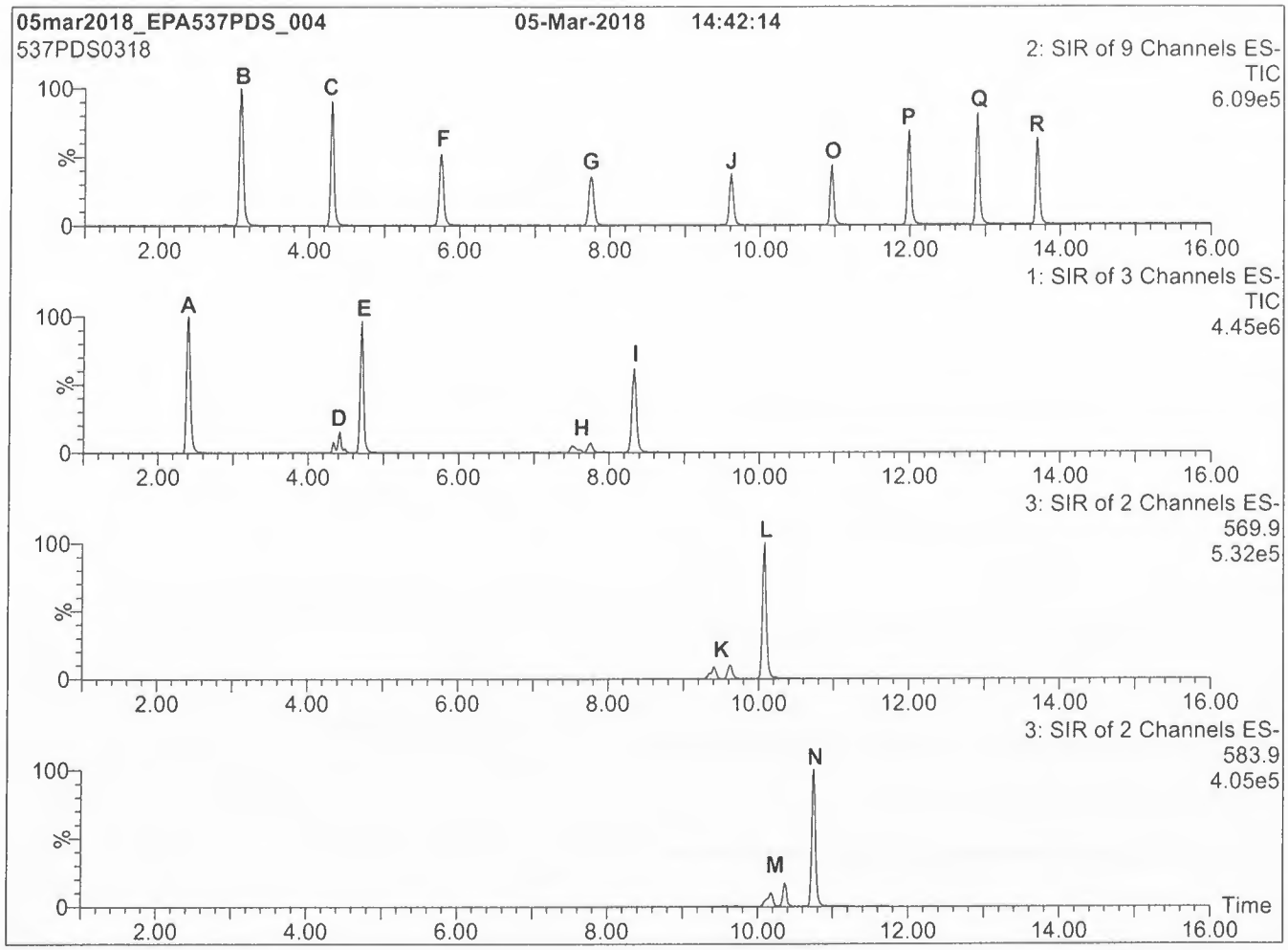
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 04/02/2018 (mm/dd/yyyy)

B.G. Chittim, General Manager

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_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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 µl/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)

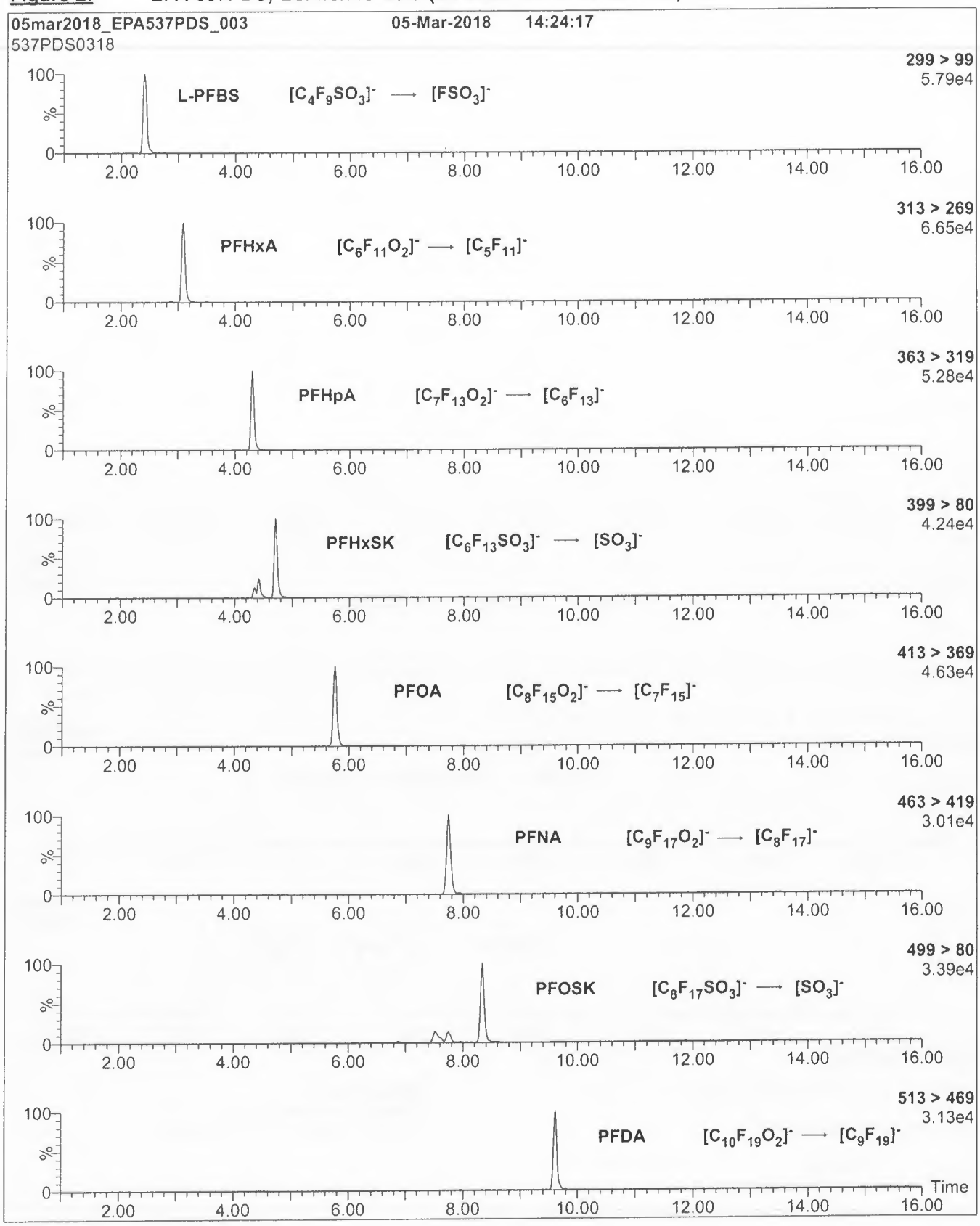
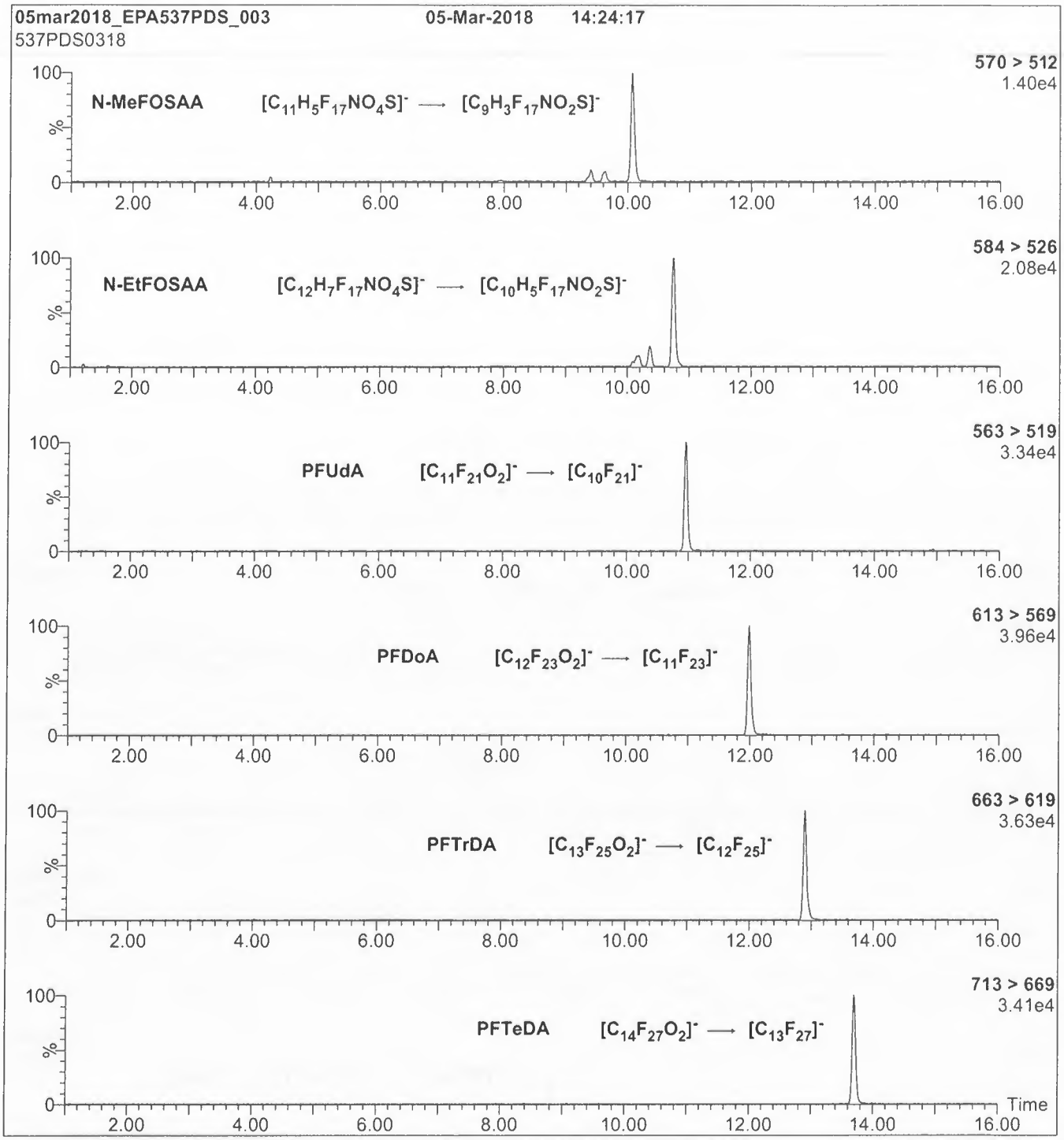


Figure 2: EPA-537PDS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (EPA-537PDS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters
Collision Gas (mbar) = 3.10e-3
Collision Energy (eV) = 10-40 (variable)

WELLINGTON LABORATORIES

CERTIFICATE 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_6-C_{14}), native linear perfluoroalkylsulfonates (C_4, C_6, and C_8), 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.

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INTENDED USE:

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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,...x_n on which it depends is:

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

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 ±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).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

Compound	Abbreviation	Concentration * (ng/ml)	Peak Assignment in Figure 1
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	PFTrDA	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

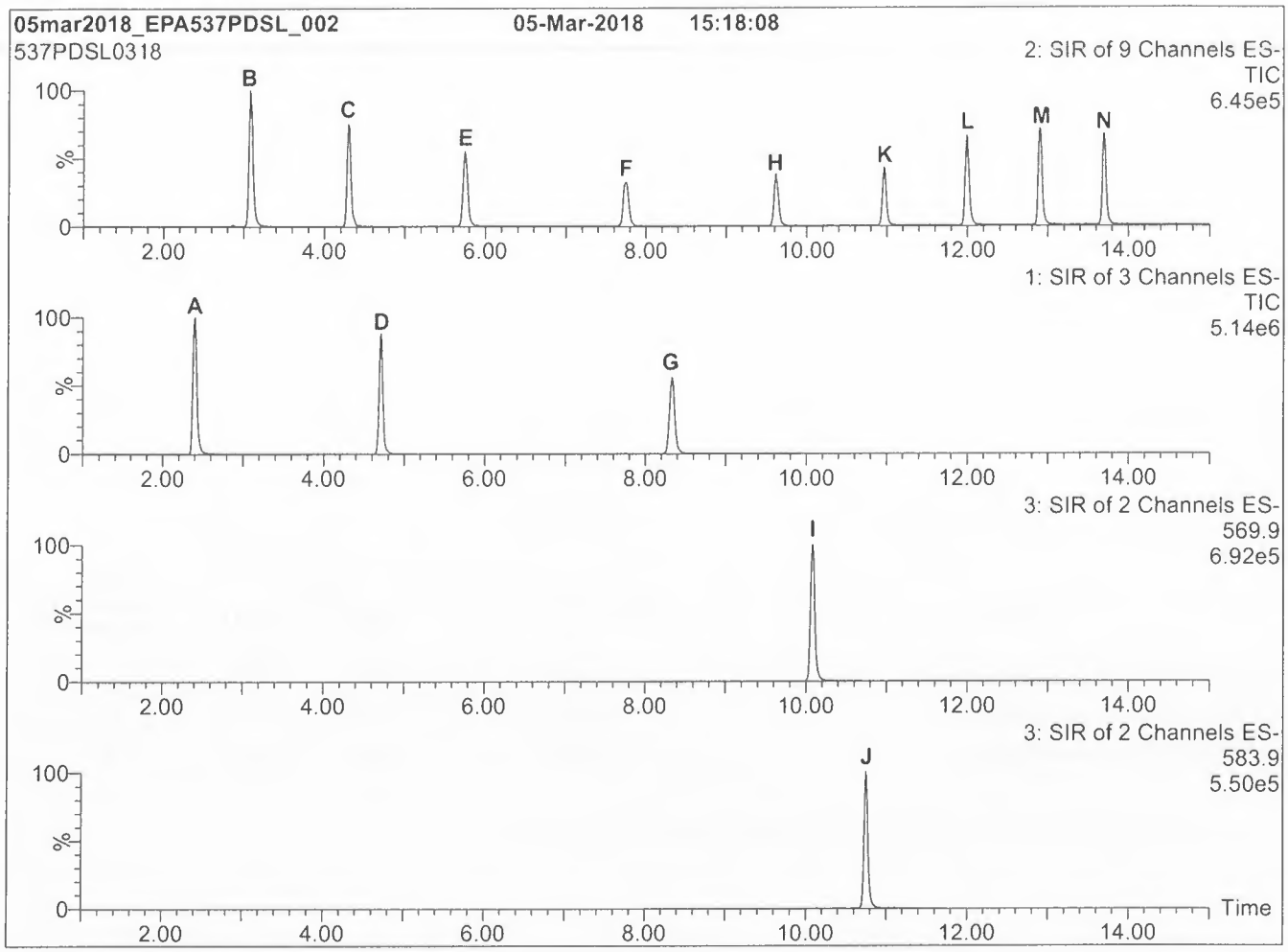
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	A
Sodium perfluoro-1-hexanesulfonate	L-PFHxS	2000	1890	D
Sodium perfluoro-1-octanesulfonate	L-PFOS	2000	1910	G

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 04/02/2018
(mm/dd/yyyy)

B.G. Chittim, General Manager

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_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc 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 µl/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)

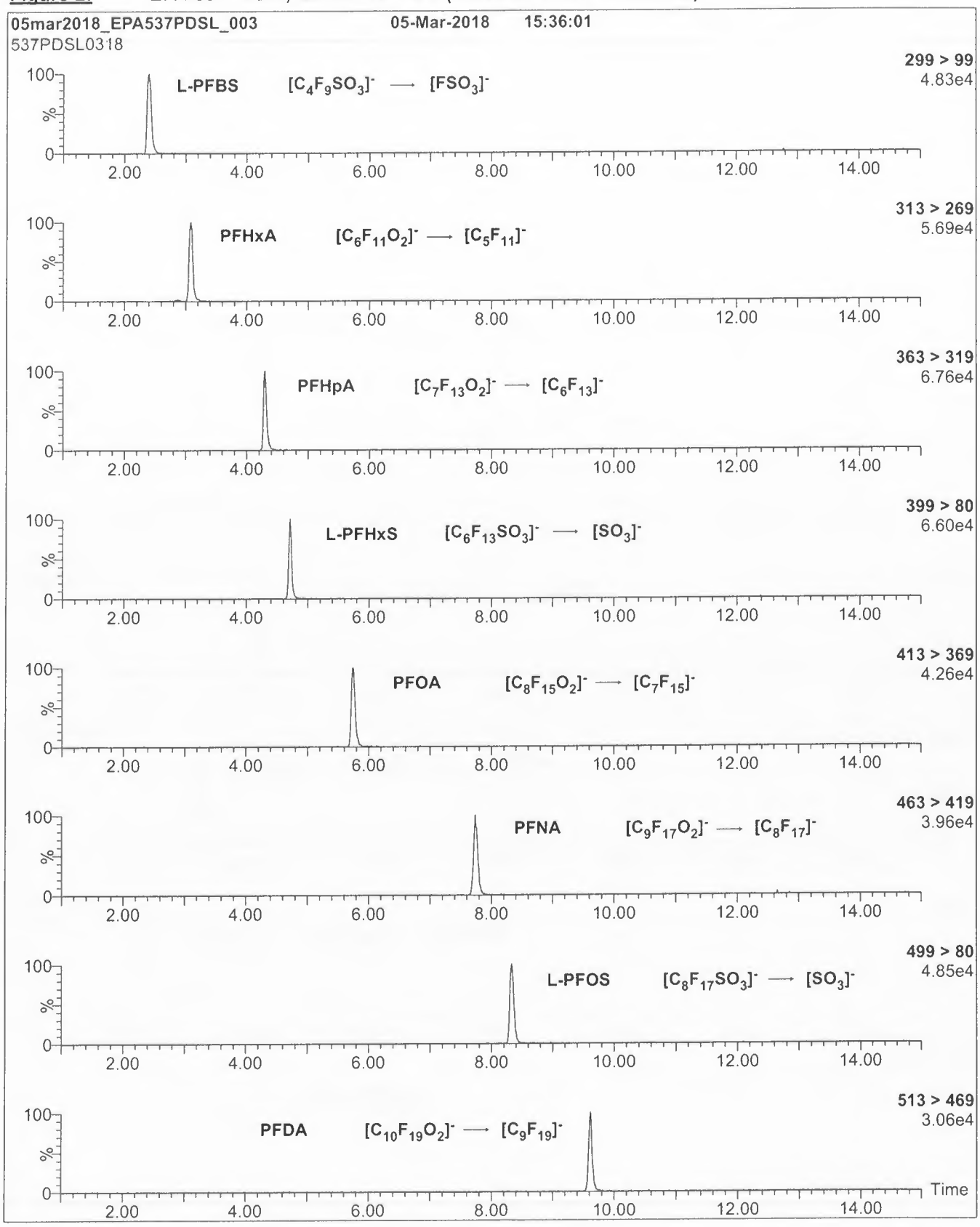
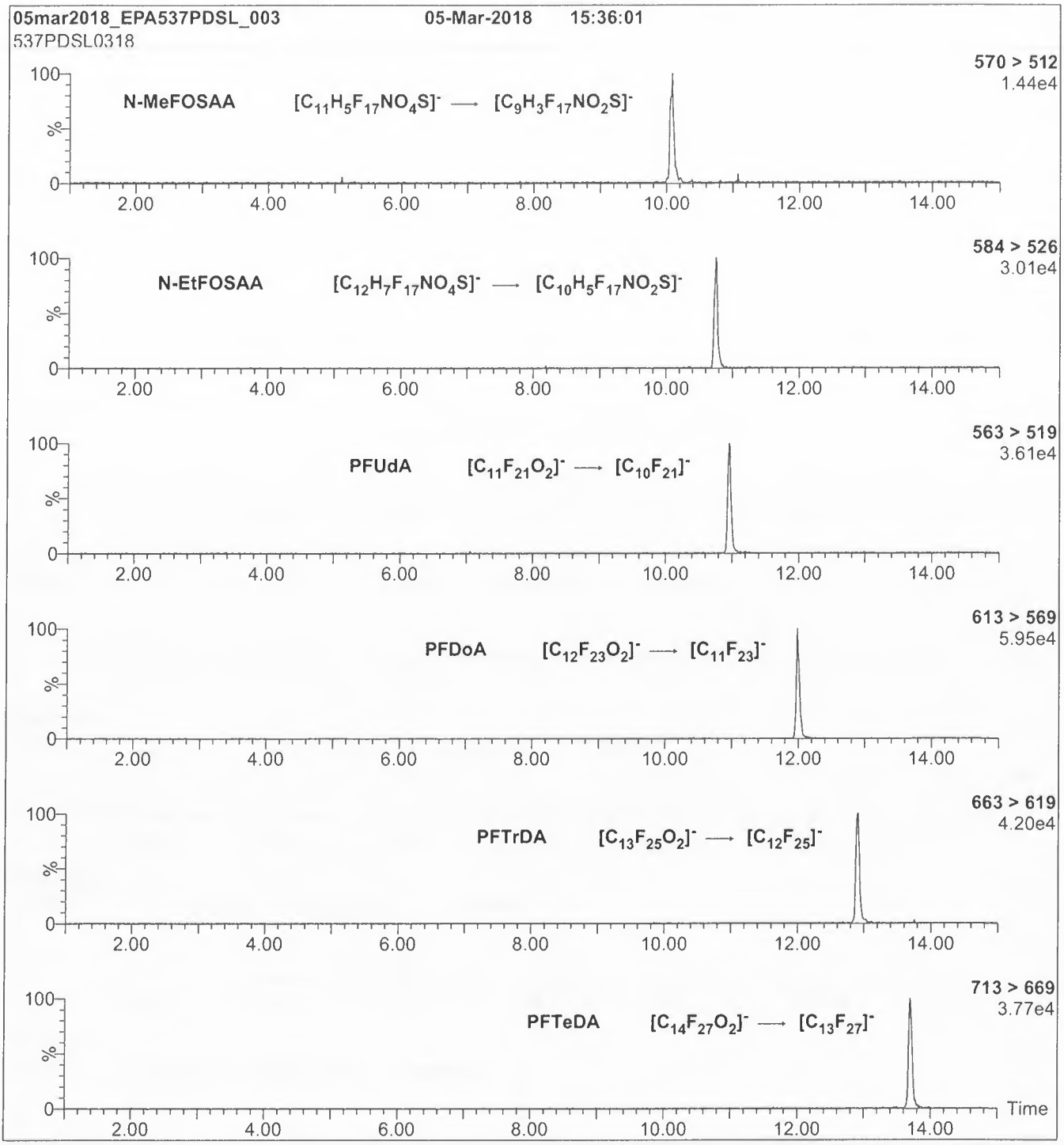


Figure 2: EPA-537PDS-L; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

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

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3

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

Sample Preparation

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BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	**Project No.(s)**
CTO-SE0375: Naval Air Station Jacksonville	100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

SOP Numbers (see workplan for modifications)

VOASOP No. 5-371

This Batch Contains The Following Samples:
CR631PB-FS
CR632LCS-FS
J7448-FS
J7450-FS
J7452-FS

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

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

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BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description
CR631PB-FS	Procedural Blank
CR632LCS-FS	Laboratory Control Sample
J7448-FS	JAX-RES-08152018-1015-34-FRB
J7450-FS	JAX-RES-08152018-1045-33-FRB
J7452-FS	JAX-RES-08152018-1130-15-FRB

Samples Assigned By: Jonathan Thorn Date : August 21, 2018

Comments:

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BATTELLE - NORWELL OPERATIONS
SAMPLE CUSTODY LOG

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Requested On/By:	08/22/2018 SAS	**Purpose:**	Sample Preparation
Relinquished On/By:	08/22/2018 MDS	**Last Activity:**	Transfer

Accepted On/By:	08/22/2018 SAS	**Returned On/To:**	
Stored In Facility:	Sample Preparation	**Returned To Facility:**	
Stored Until	08/22/2018		
Stored Comment:	NA	**Returned Comment:**	NA

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	J7448	1	C	Consumed	NA
2	J7450	1	C	Consumed	NA
3	J7452	1	C	Consumed	NA

Total Samples 3 * "C" = Consumed Container

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BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR631PB-FS	Procedural Blank	250.0	NA	--	08/22/18 SAS
CR632LCS-FS	Laboratory Control Sample	250.0	NA	--	08/22/18 SAS
J7448-FS	JAX-RES-08152018-1015-34-FRB	260.0	1	C	08/22/18 SAS
J7450-FS	JAX-RES-08152018-1045-33-FRB	255.0	1	C	08/22/18 SAS
J7452-FS	JAX-RES-08152018-1130-15-FRB	260.0	1	C	08/22/18 SAS

Comments:

Sample ID:	Comments:
CR631PB-FS	1.26g Trizma(180502-01) weighed on BAL-009
CR632LCS-FS	1.26g Trizma(180502-01) weighed on BAL-009

Samples Assigned By Jonathan Thorn Date : August 21, 2018

* - "C" = Sample is Consumed

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BATTELLE - NORWELL OPERATIONS
SURROGATE SPIKE FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR631PB-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
CR632LCS-FS	JZ28	LCS/MS	1	75	08/22/18 SAS	JCT	NA
CR632LCS-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7448-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7450-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7452-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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SAMPLE EXTRACTION FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
CR631PB-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
CR632LCS-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7448-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7450-FS	08/22/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7452-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-180822-1	08/22/18	S214-0075	Pre-packed SPE Column	

Solvents/Reagents:

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

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INTERNAL STANDARD SPIKING FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

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
CR631PB-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
CR632LCS-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
J7448-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
J7450-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
J7452-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ87	Pipette	B814659662

Extract Id:	Comments:
CR631PB-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.

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PREPARATION EXTRACT SPLIT FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR631PB-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
CR632LCS-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7448-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7450-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7452-FS	0	--	8/22/2018 9:42:00 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) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Aug 22 2018 2:43PM SAS	**Received On/By:**	Aug 22 2018 5:40PM DMS
Relinquished From:	Sample Preparation: NA	**Received Location:**	LC Laboratory: NA
Relinquish Comment:	NA	**Received Comment:**	NA

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CR631PB-FS(0)	1000	1	Intact	NA
2	CR632LCS-FS(0)	1000	1	Intact	NA
3	J7448-FS(0)	1000	1	Intact	NA
4	J7450-FS(0)	1000	1	Intact	NA
5	J7452-FS(0)	1000	1	Intact	NA

Total Extracts: 5

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BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title(s)	**Project No.(s)**
CTO-SE0375: Naval Air Station Jacksonville	100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Entered By:	**On:**

Task Leader Approval:	**On:**
SupervisorApproval:	**On:**
PM Approval:	**On:**

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SAMPLE SPECIFIC COMMENTS

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID:	Comment:	Date/Initials:
CR631PB-FS	Extraction began for all samples at 9:42am	08/22/18 SAS
CR631PB-FS	Sample extraction ended at 10:05am	08/22/18 SAS
CR632LCS-FS	Sample extraction ended at 10:19am	08/22/18 SAS
J7448-FS	Sample extraction ended at 10:11am	08/22/18 SAS
J7450-FS	Sample extraction ended at 10:05am	08/22/18 SAS
J7452-FS	Sample extraction ended at 10:10am	08/22/18 SAS

Analytical Calibrations

BATTELLE

Sequence Report

Created with Analyst Reporter
Printed: 23/08/2018 10:45:23 AM

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
14	CR631PB-FS(0)	Procedural Blank	8/22/2018 7:56:50 PM	5-0371.dam	08222018_DW.wiff
15	CR632LCS-FS(0)	Laboratory Control Sample	8/22/2018 8:05:47 PM	5-0371.dam	08222018_DW.wiff
16	J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/2018 8:14:44 PM	5-0371.dam	08222018_DW.wiff
17	J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/2018 8:23:42 PM	5-0371.dam	08222018_DW.wiff
18	J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/2018 8:32:38 PM	5-0371.dam	08222018_DW.wiff
19	JZ82 CCV	CCV	8/22/2018 8:41:36 PM	5-0371.dam	08222018_DW.wiff

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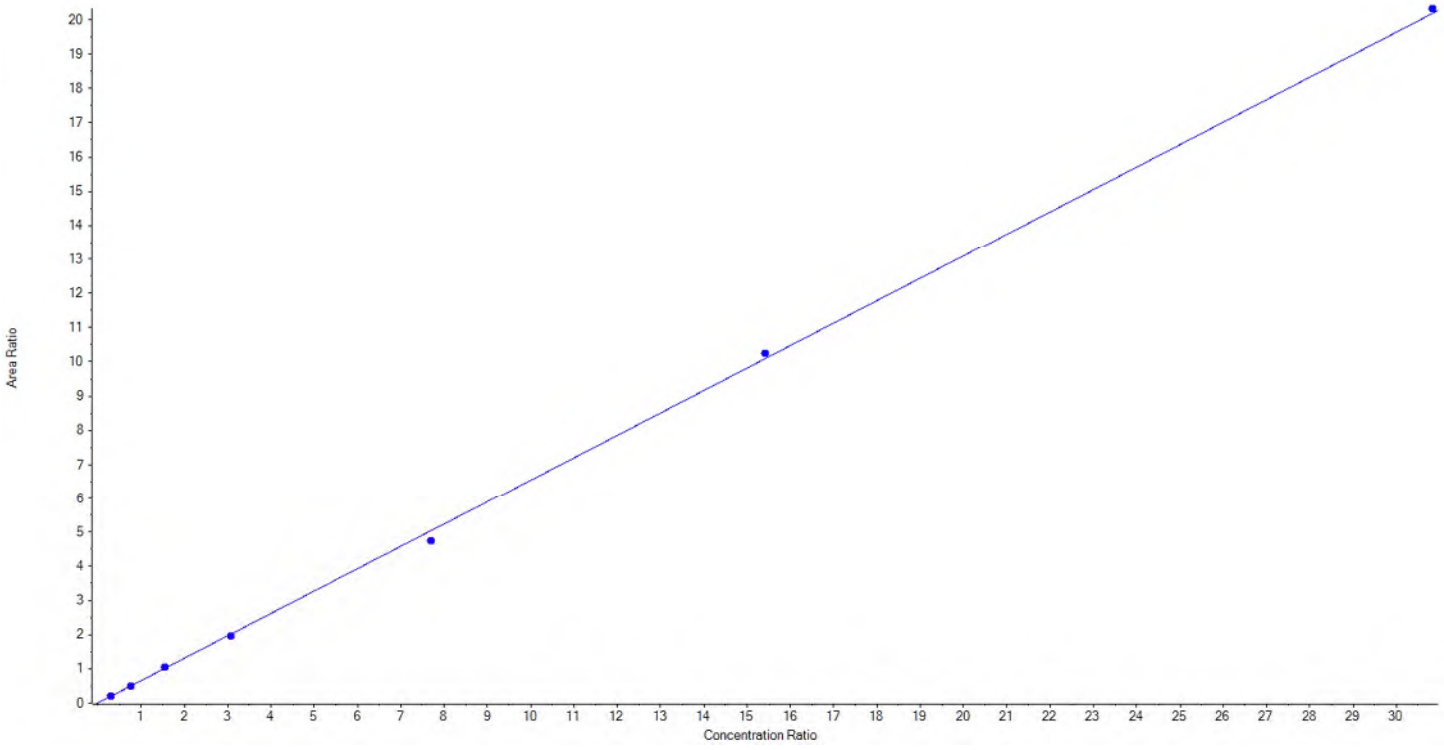
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.65429 x + 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



BATTELLE

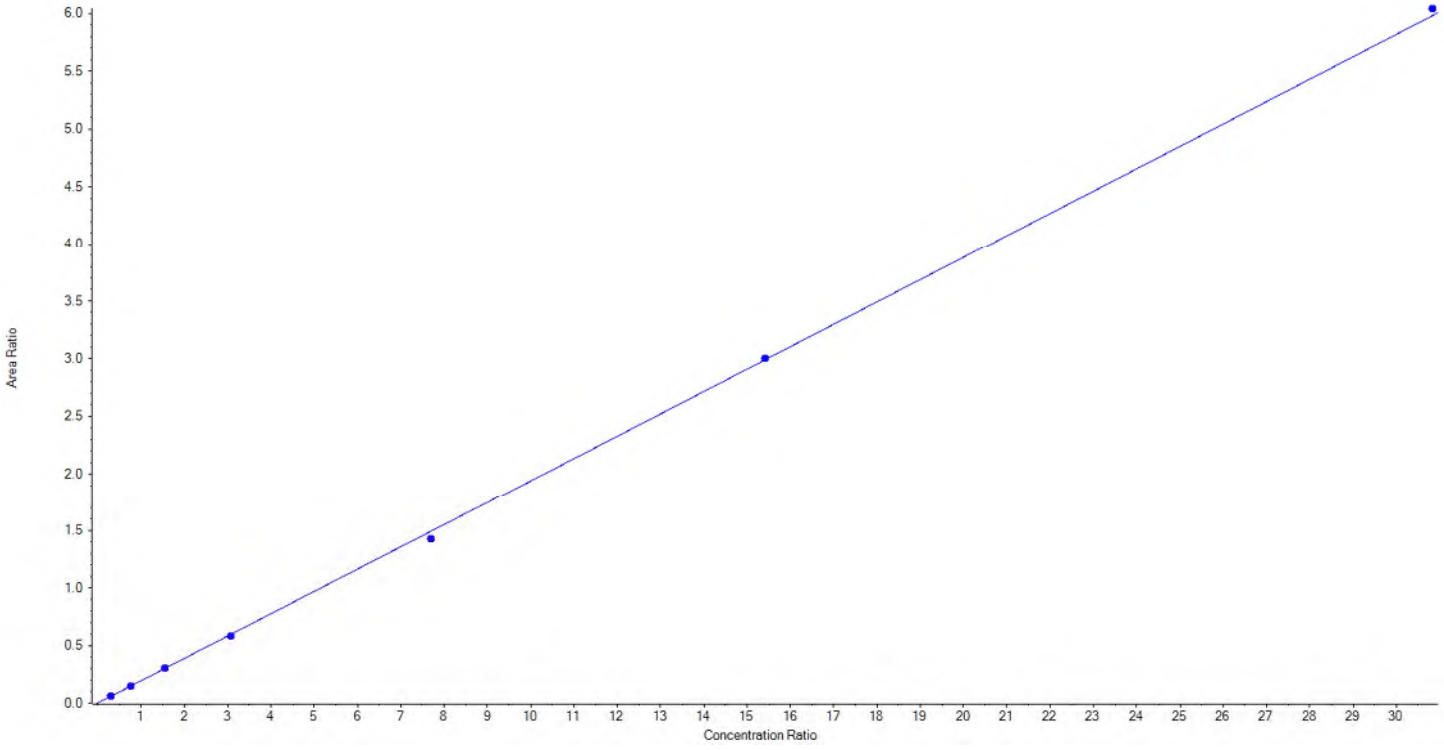
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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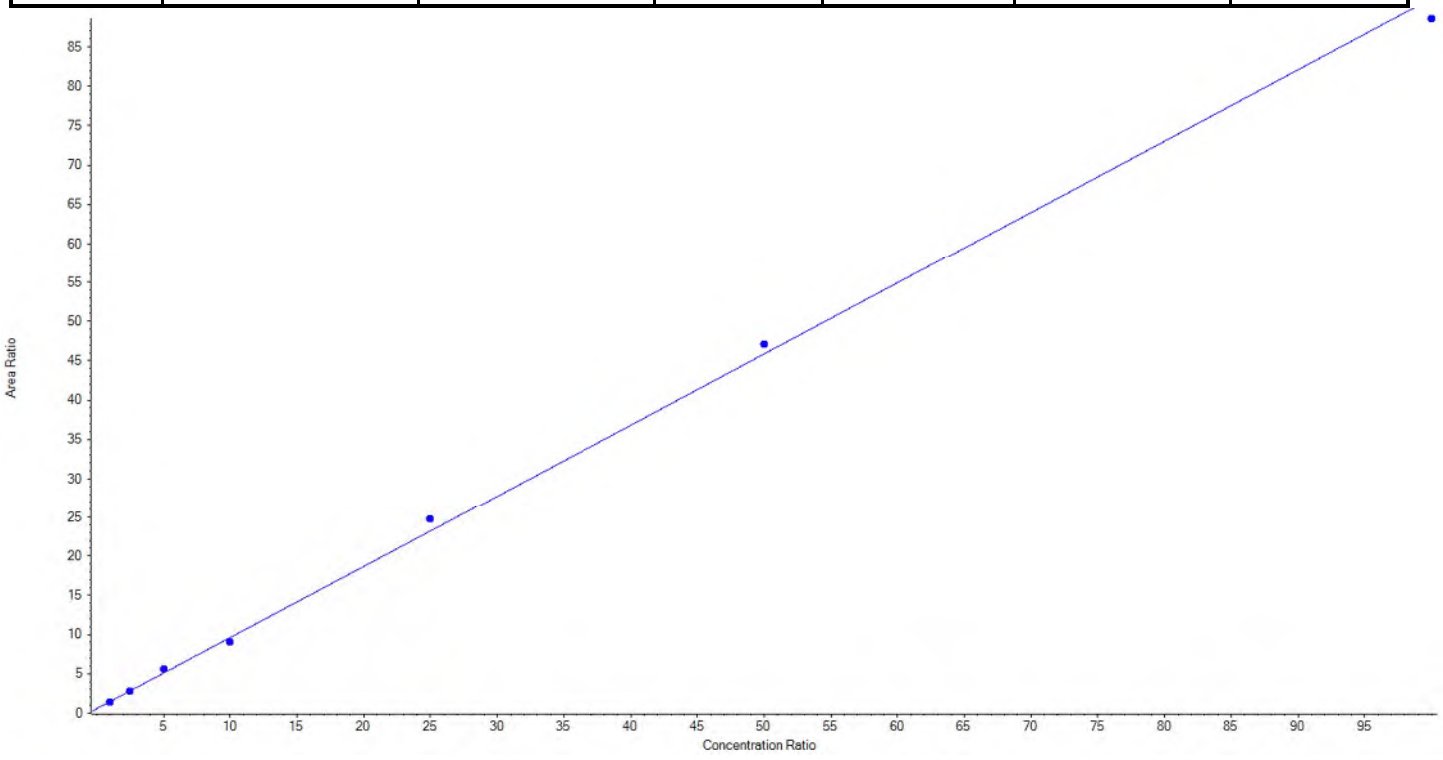
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.90582 x + 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



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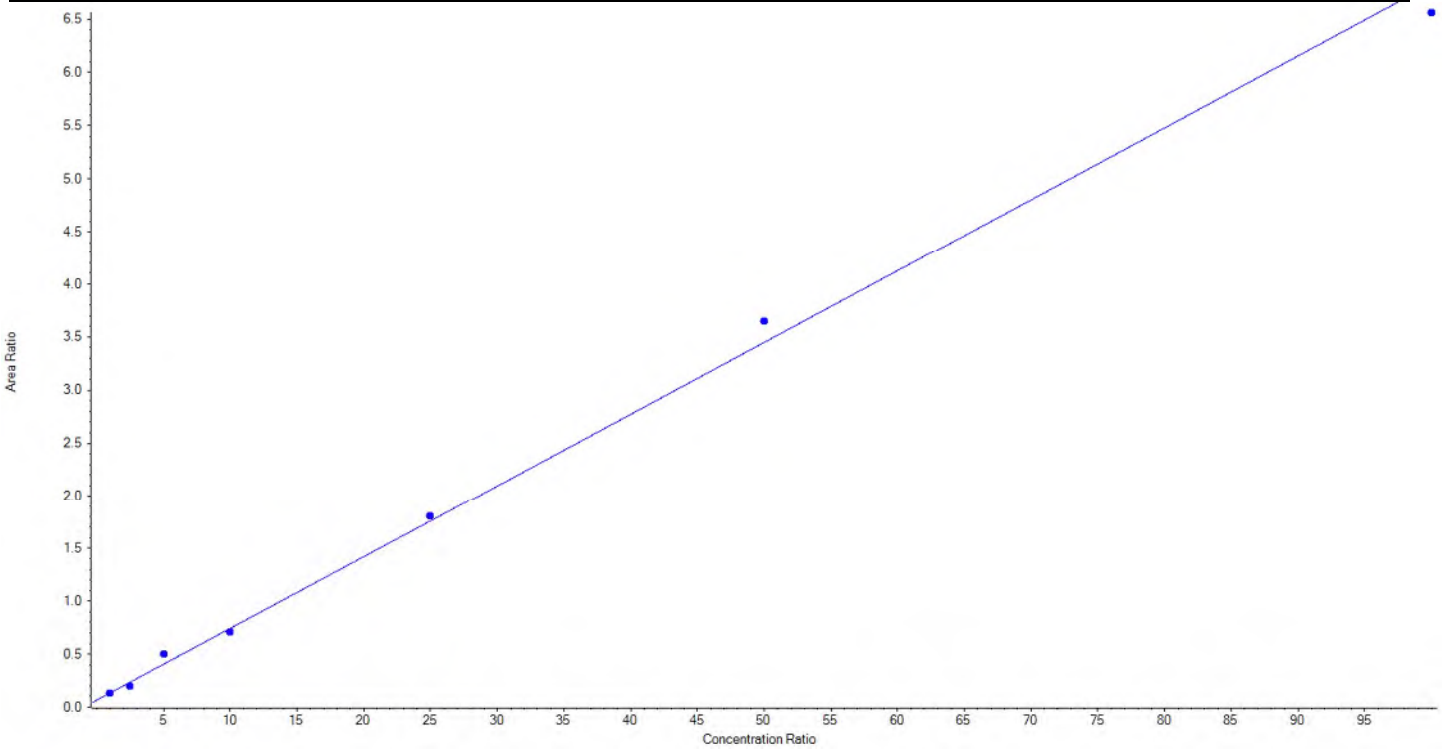
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.06765 x + 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



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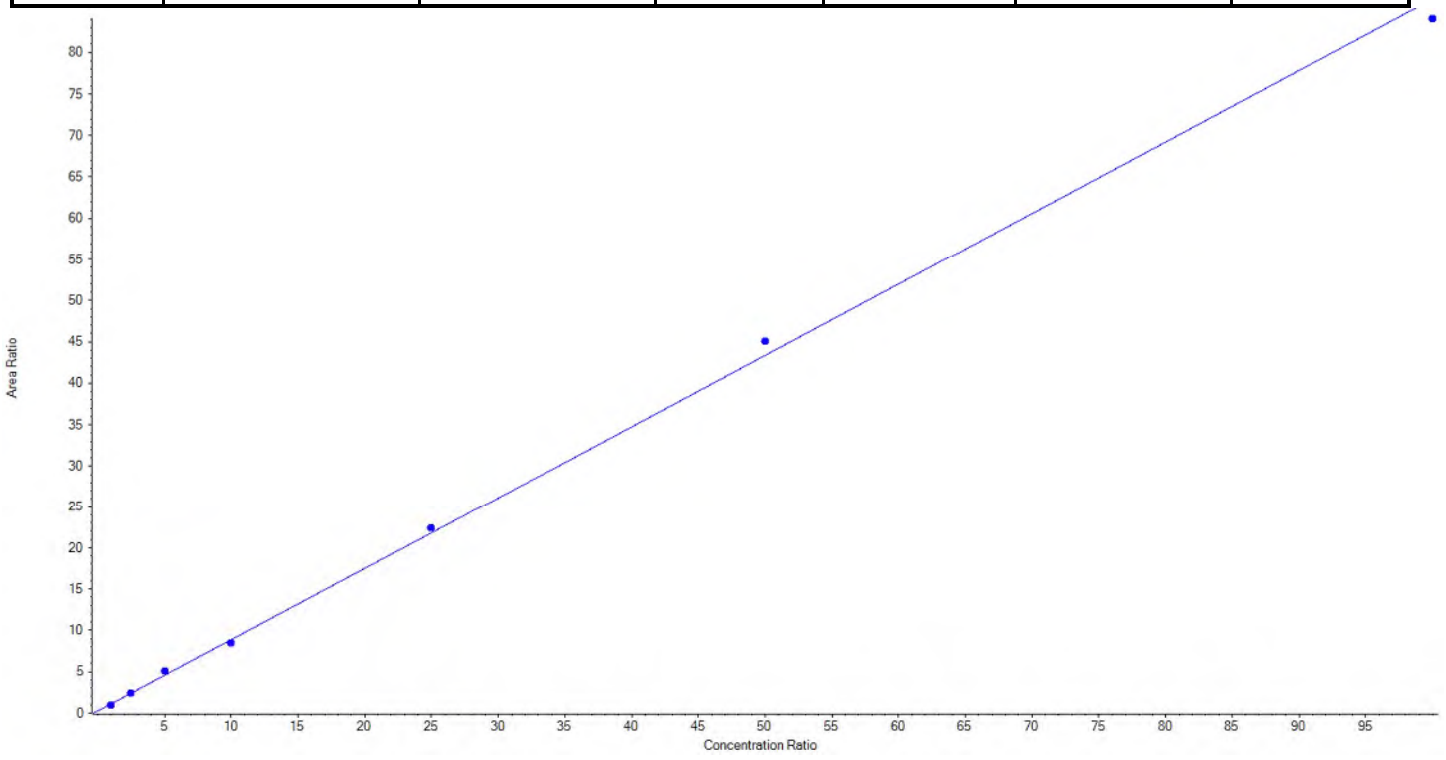
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.86184 x + 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



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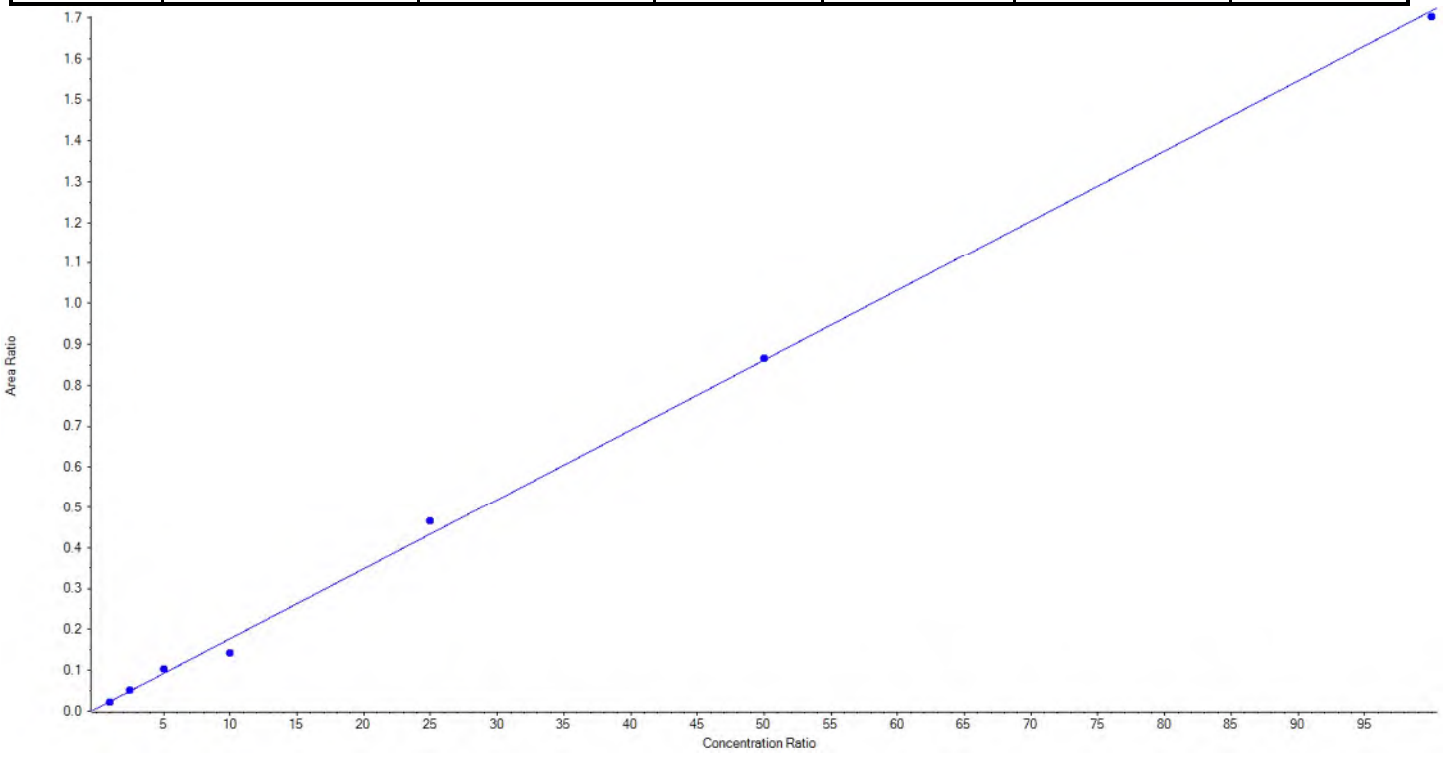
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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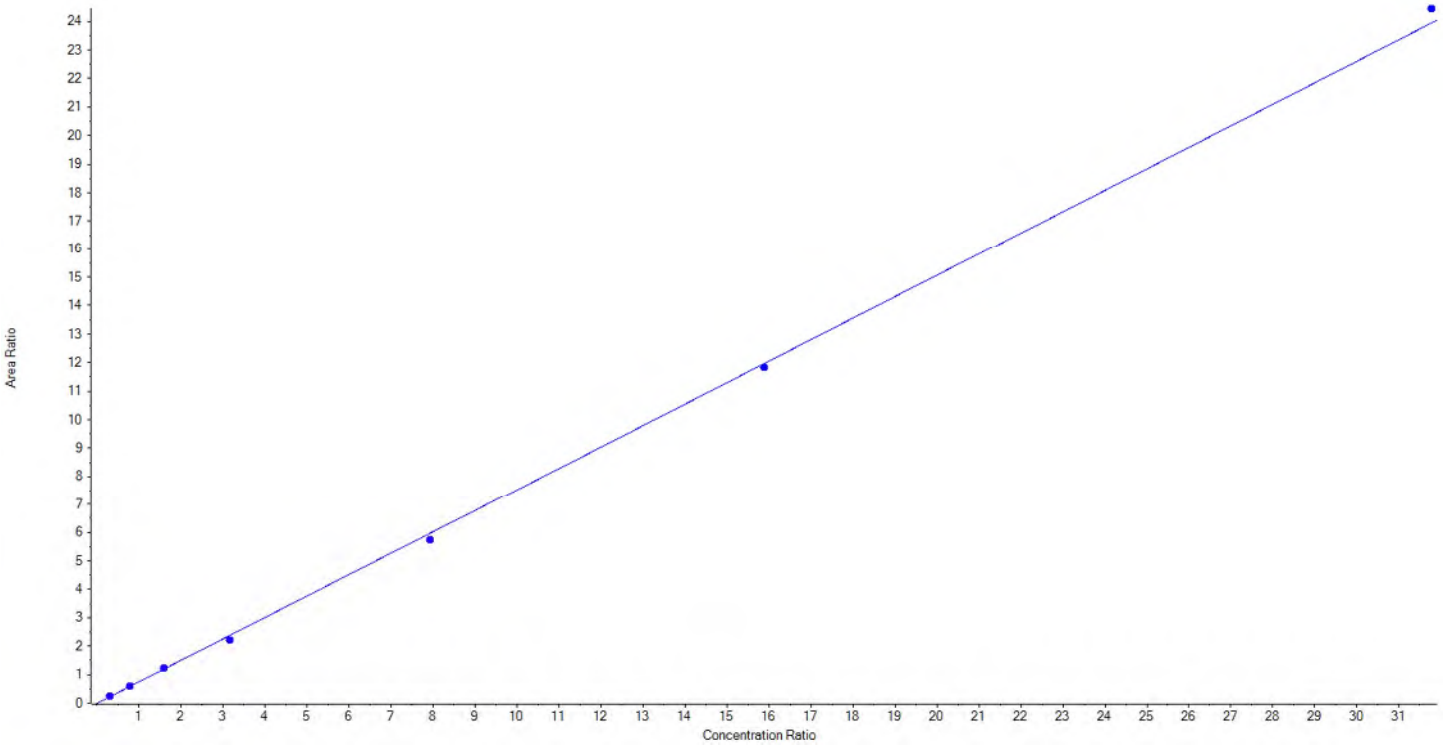
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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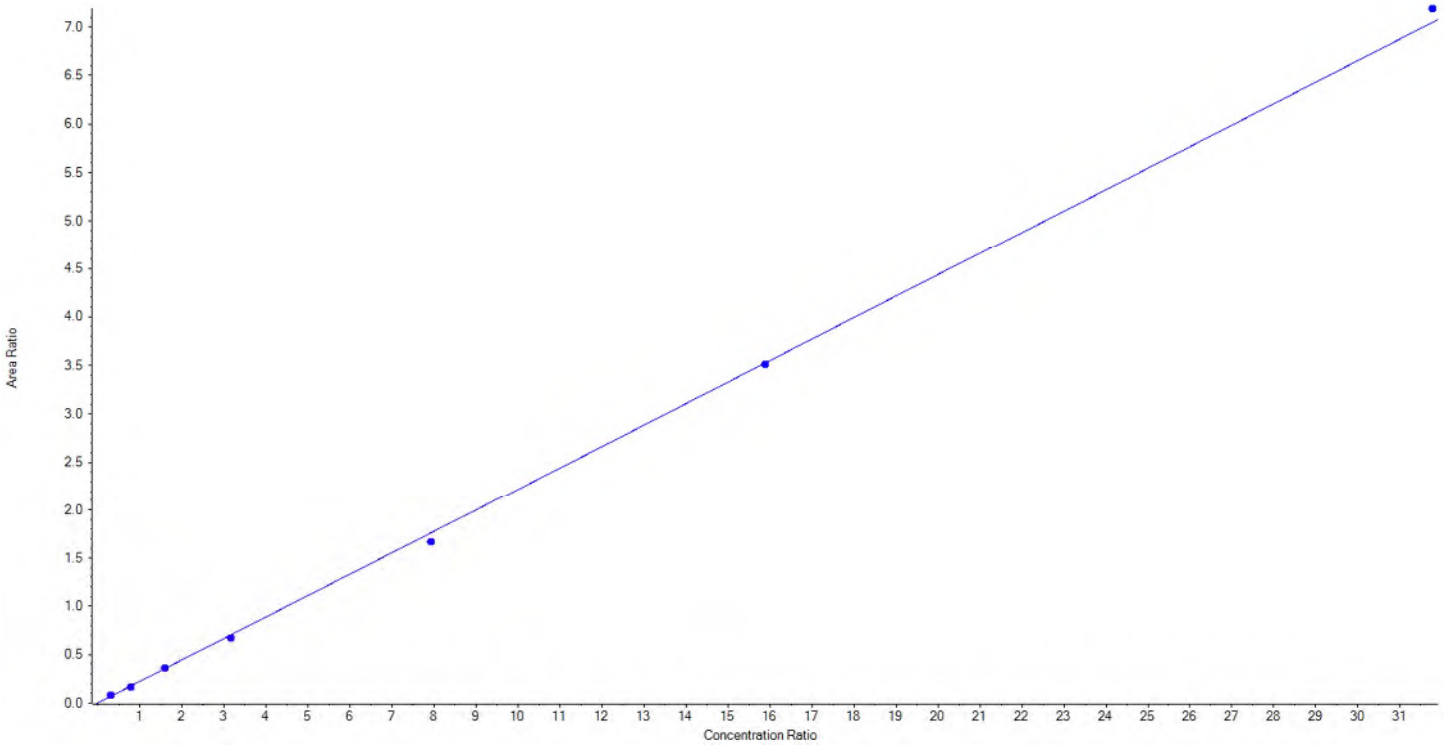
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.22168 x + 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



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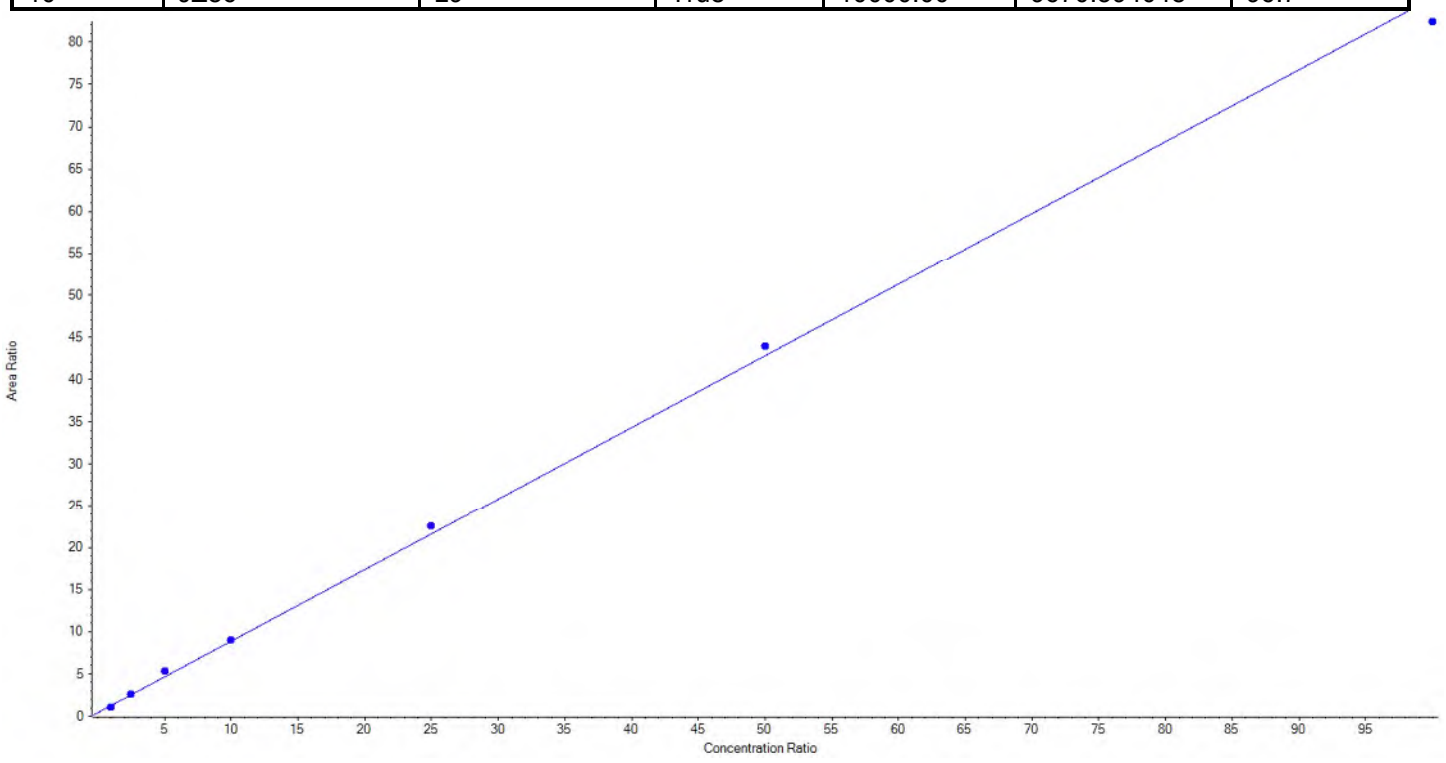
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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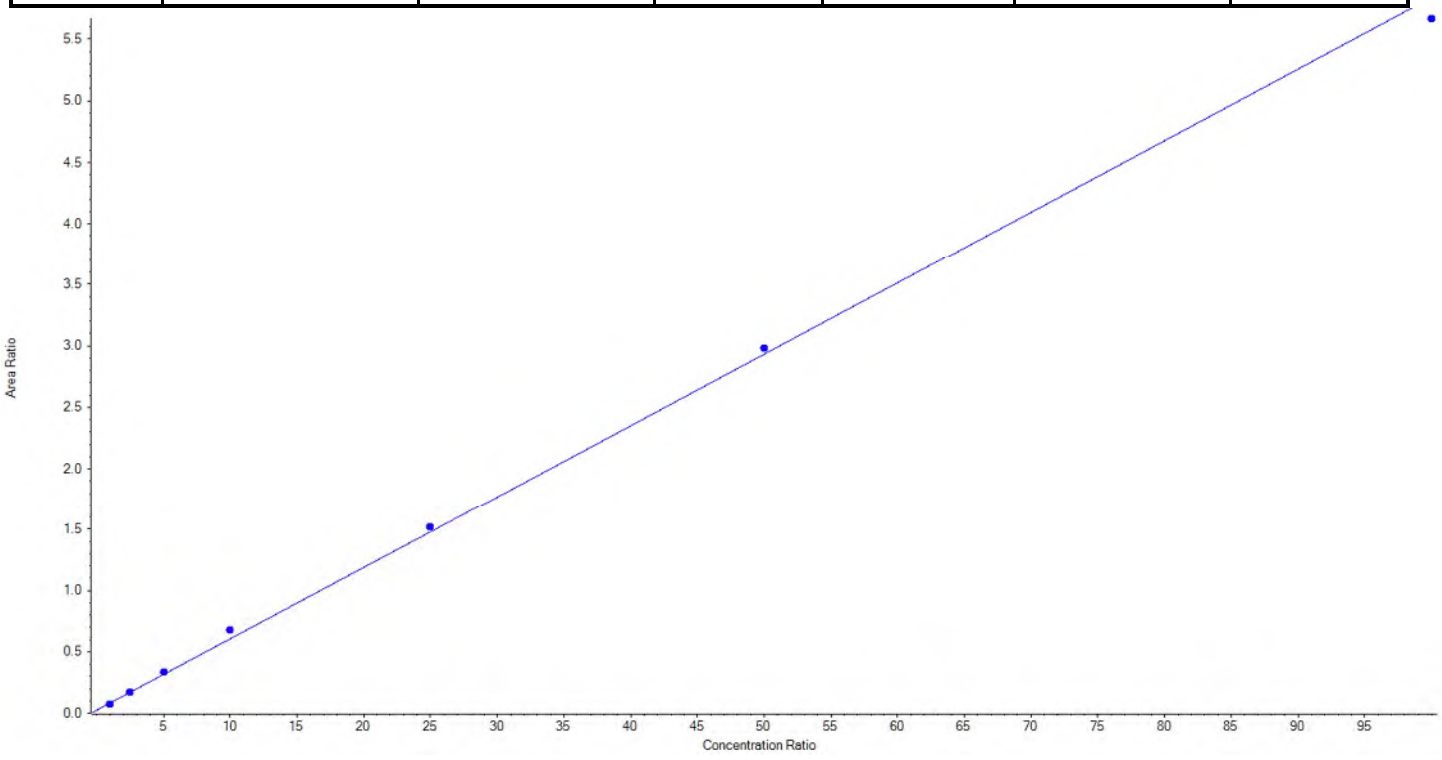
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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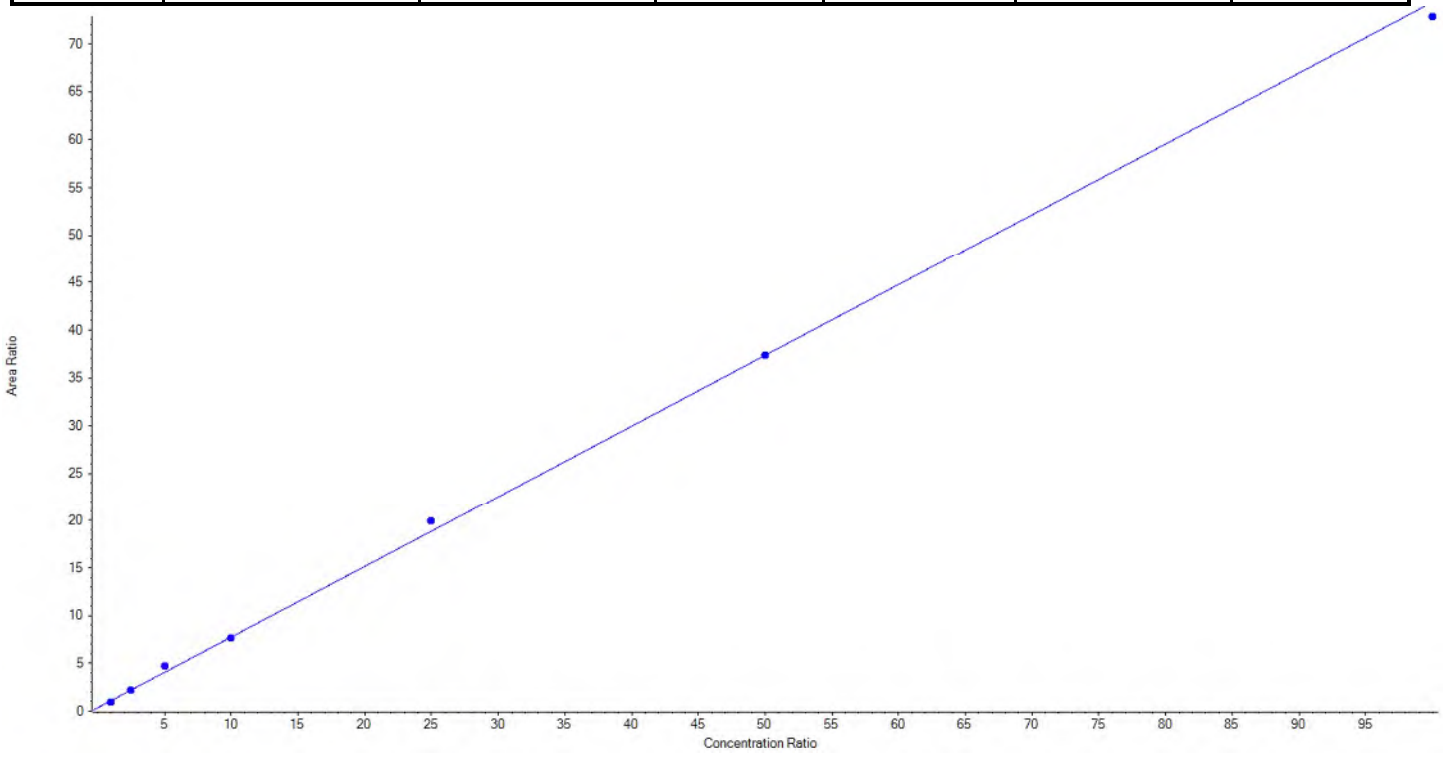
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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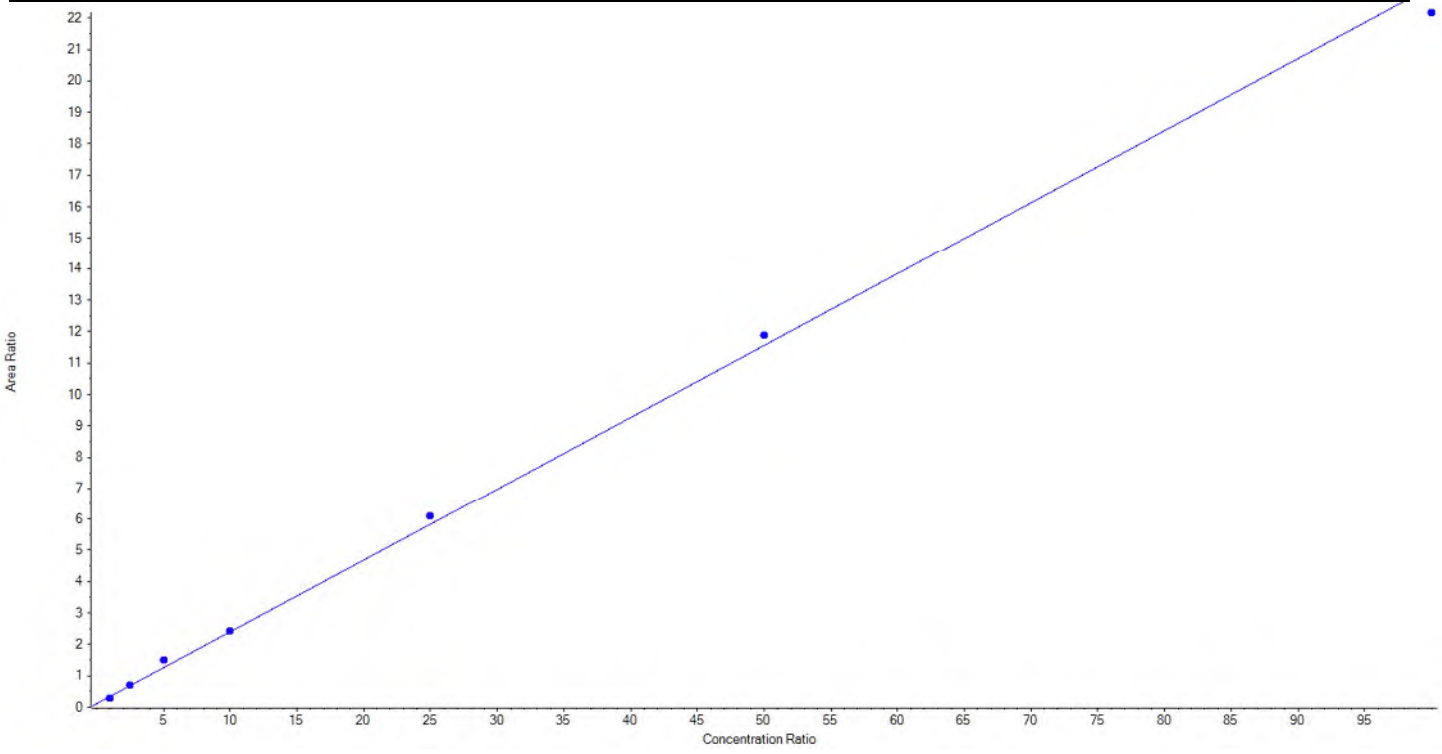
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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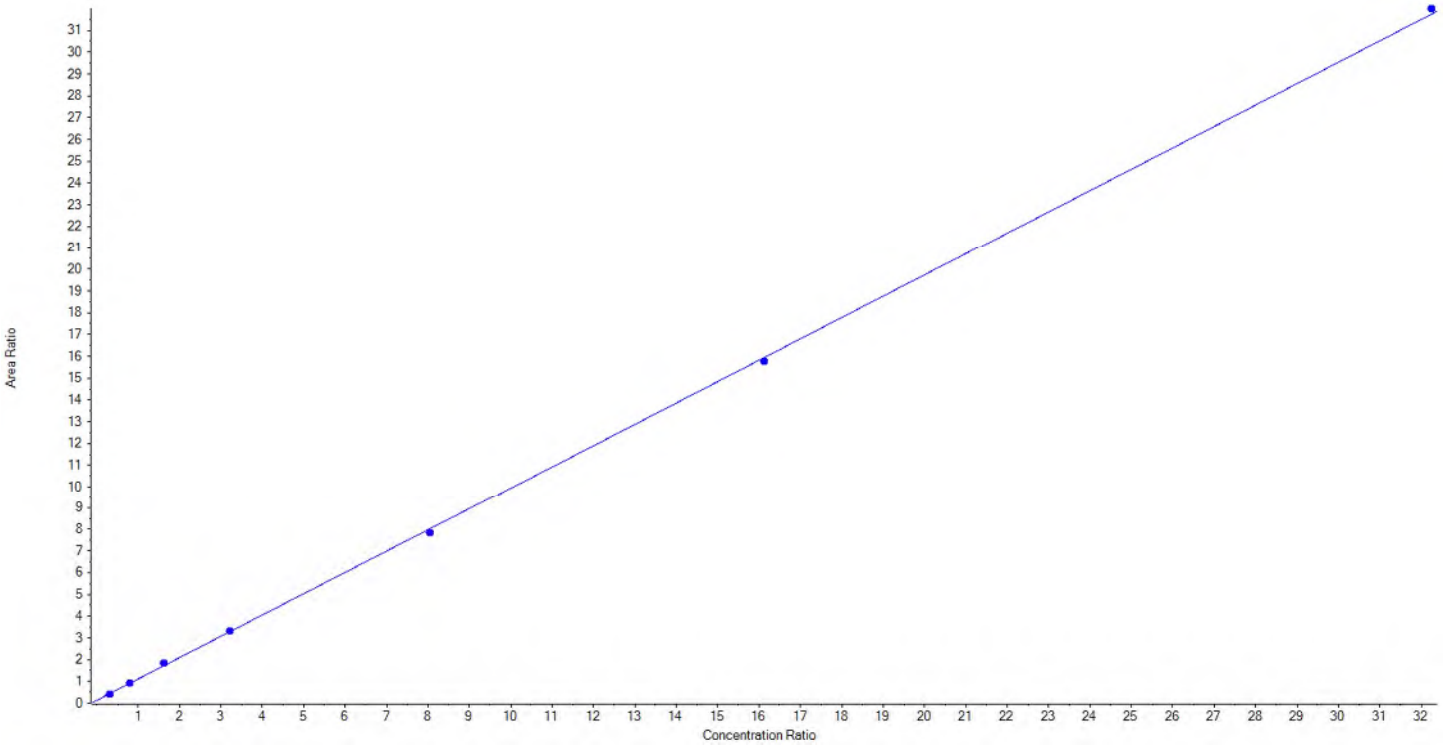
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.98015 x + 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



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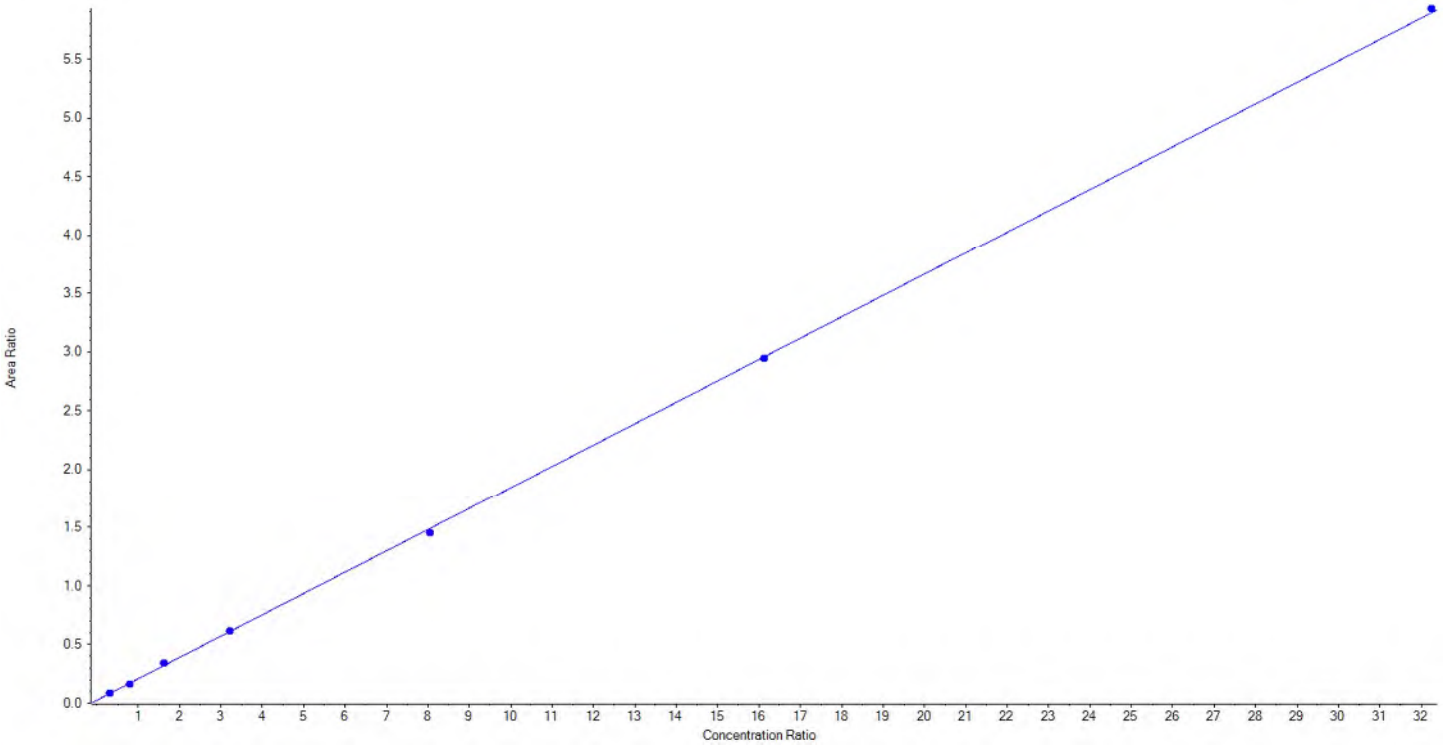
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.18192 x + 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



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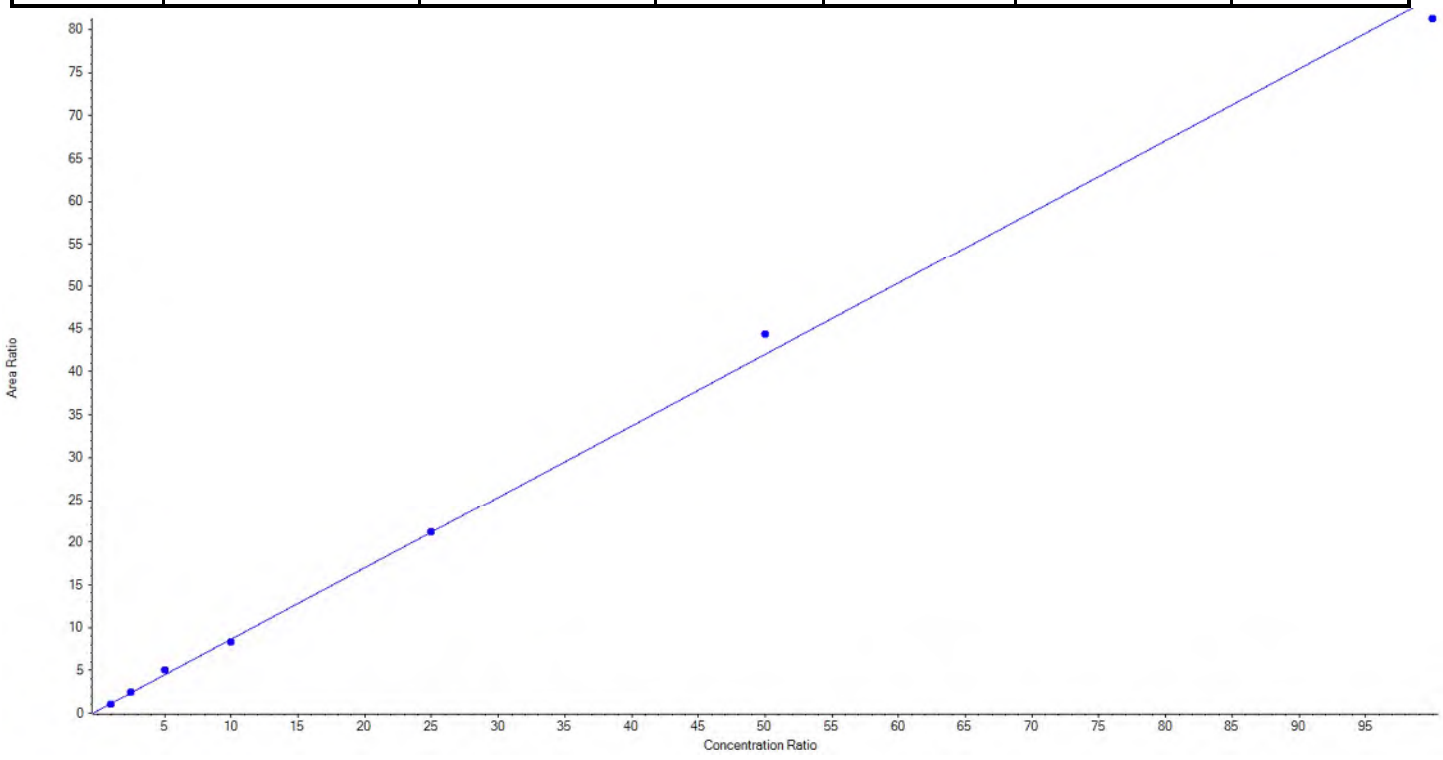
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.83461 x + 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



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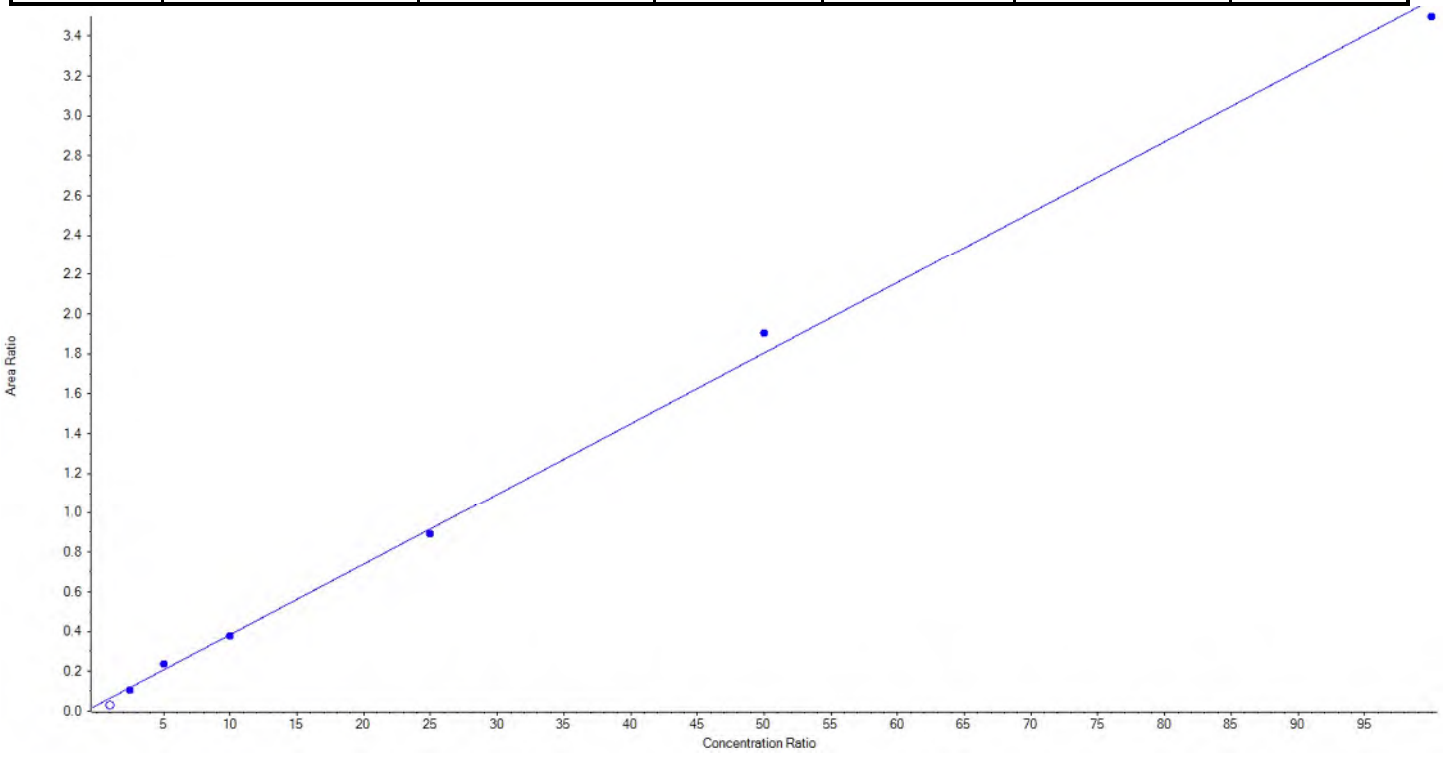
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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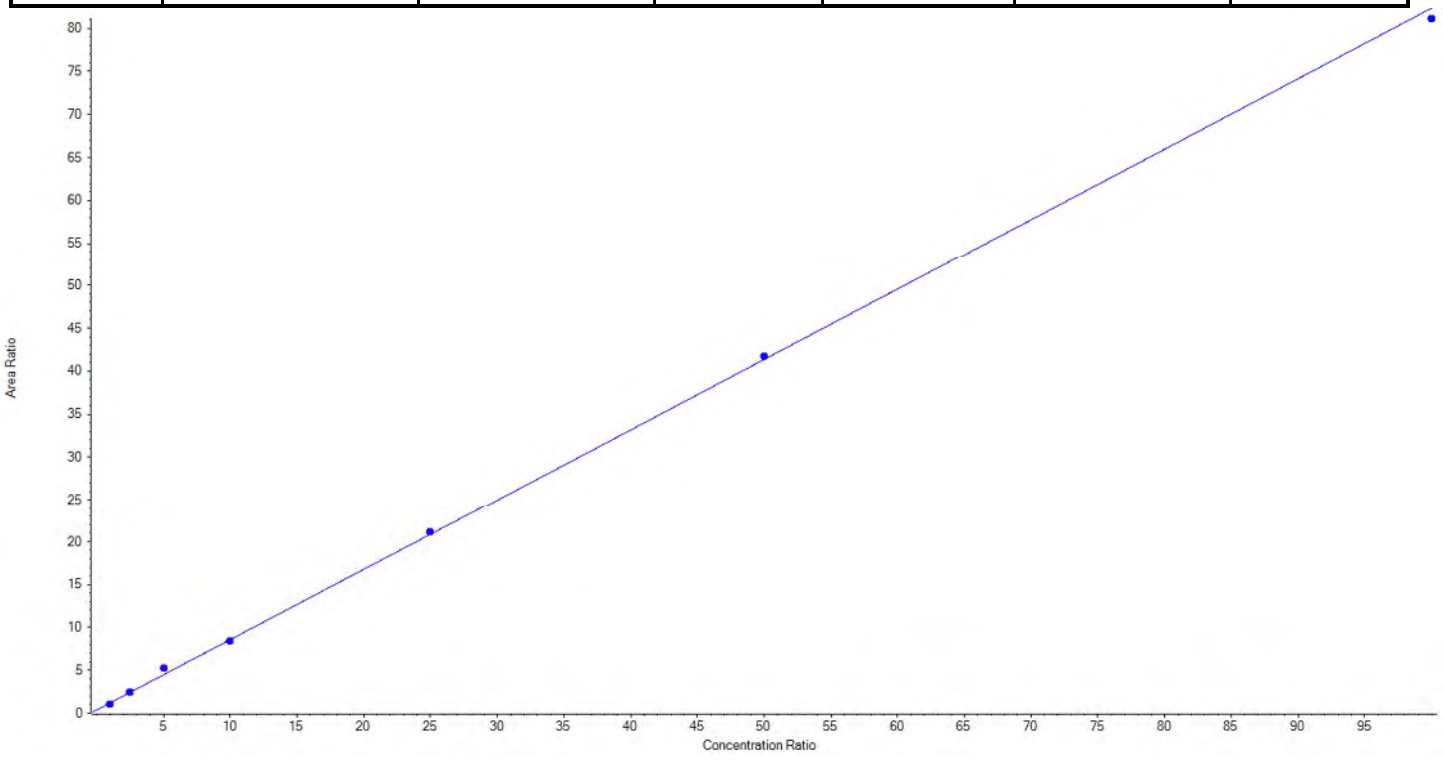
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.81955 x + 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



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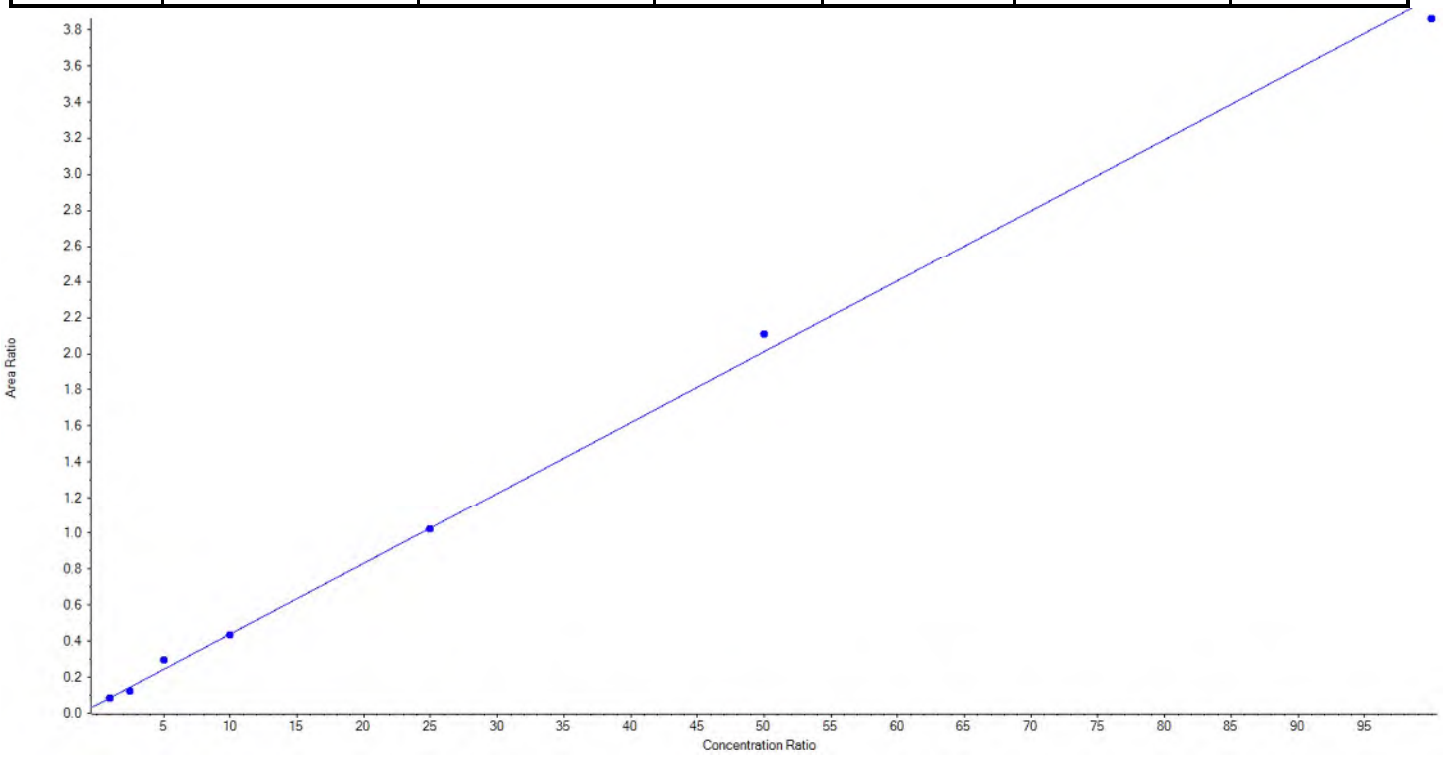
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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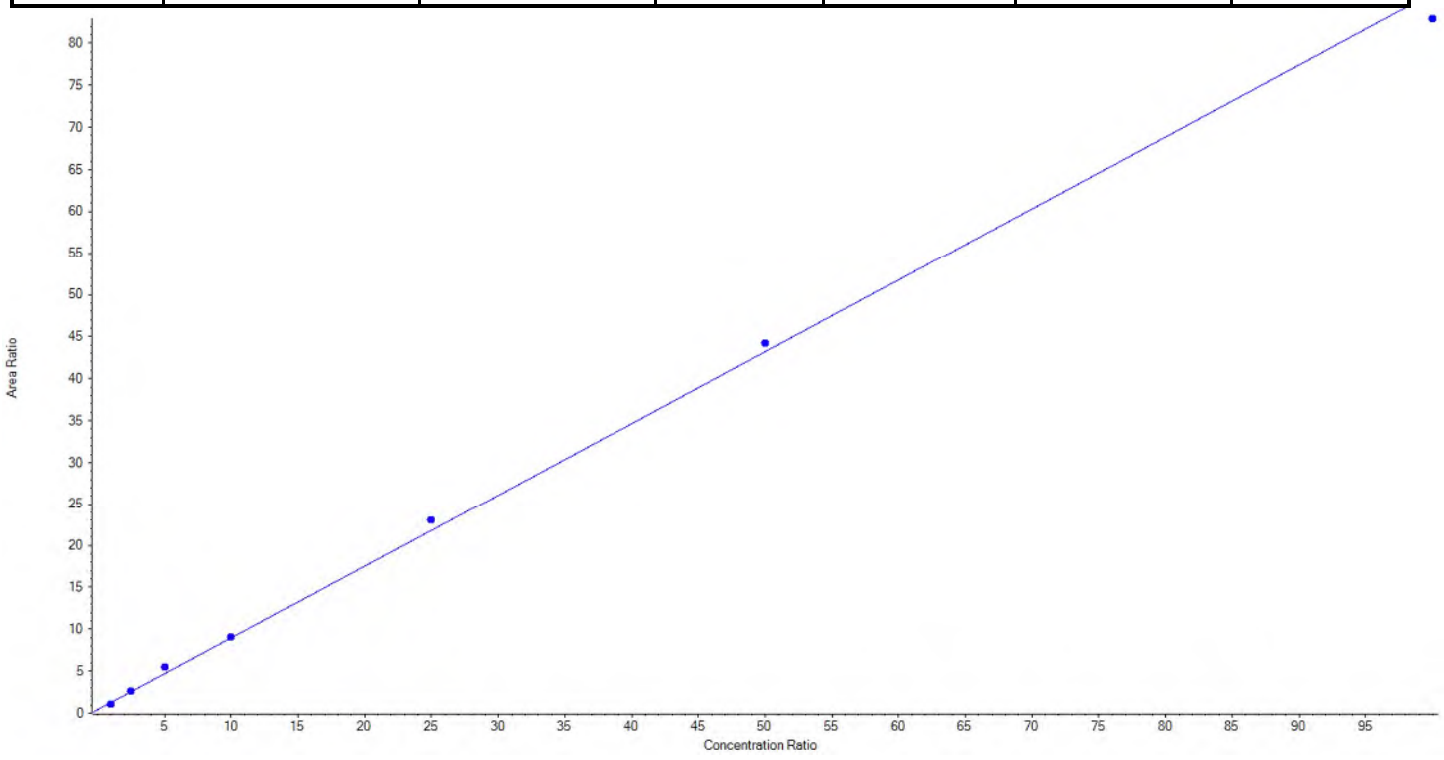
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

Analyte Name	PFDoA_1	**Data File**	08222018_DW.wiff
MRM Transition	613.0 / 569.0	**Result Table**	08232018_DW
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	8/22/2018 6:00:37 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.85553 x + 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



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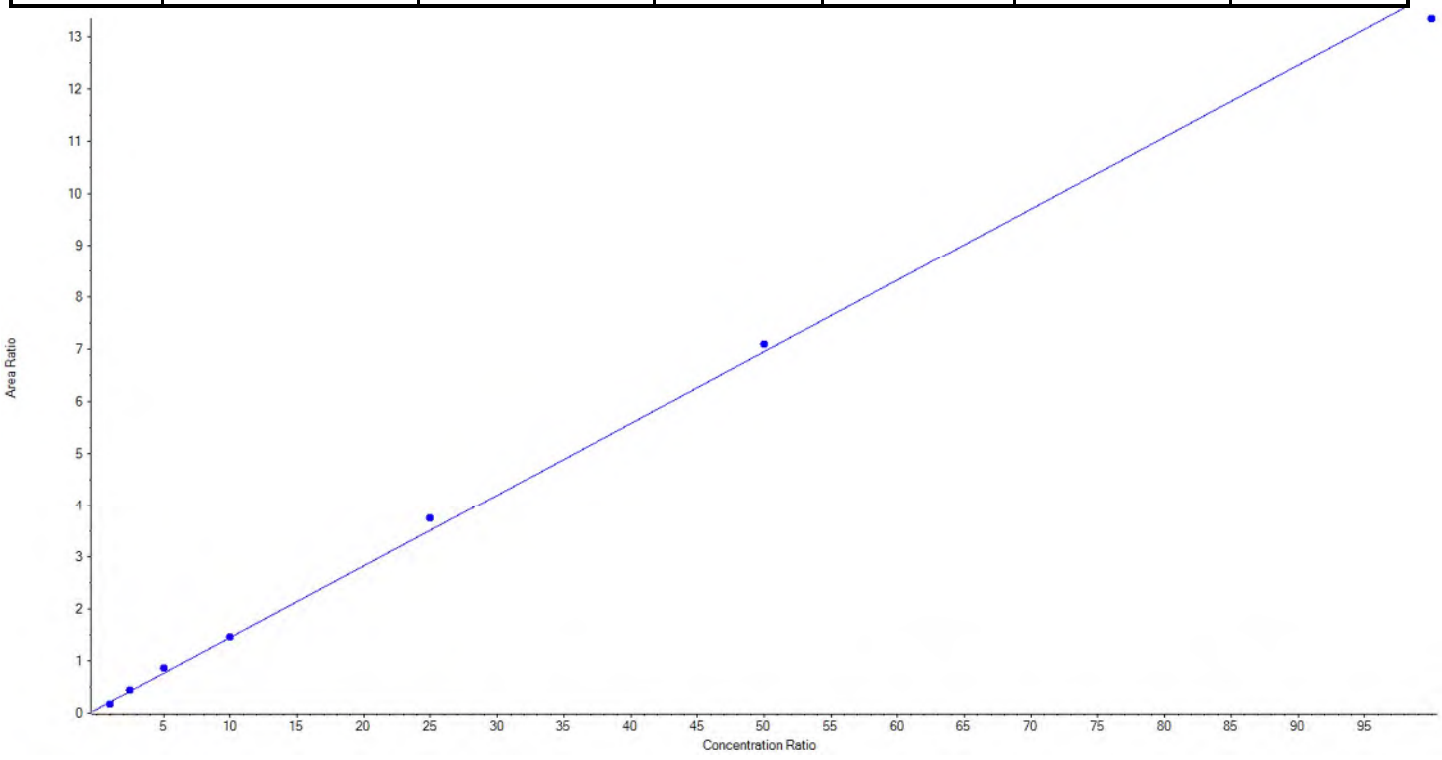
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

Analyte Name	PFDoA_2	**Data File**	08222018_DW.wiff
MRM Transition	613.0 / 319.0	**Result Table**	08232018_DW
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	8/22/2018 6:00:37 PM	**Acquisition Method**	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



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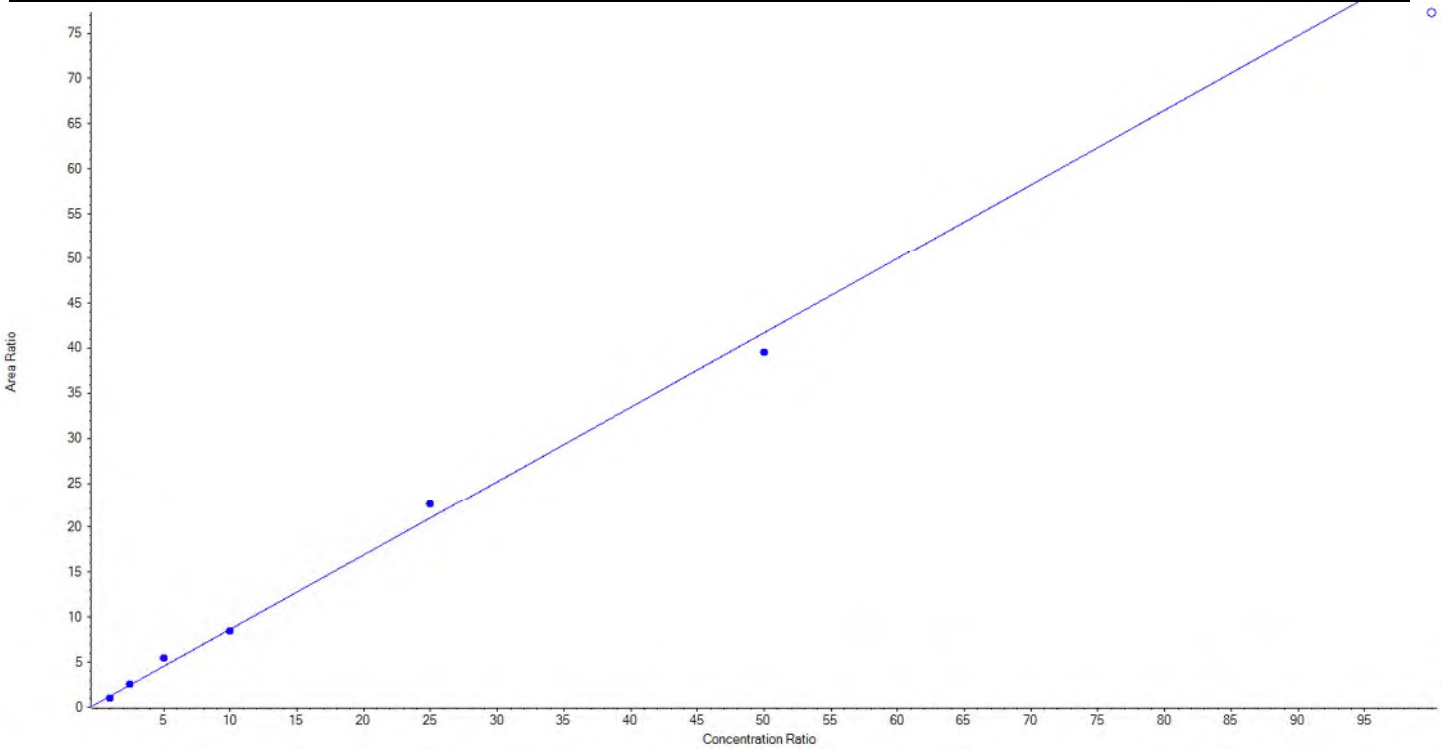
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.82600 x + 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



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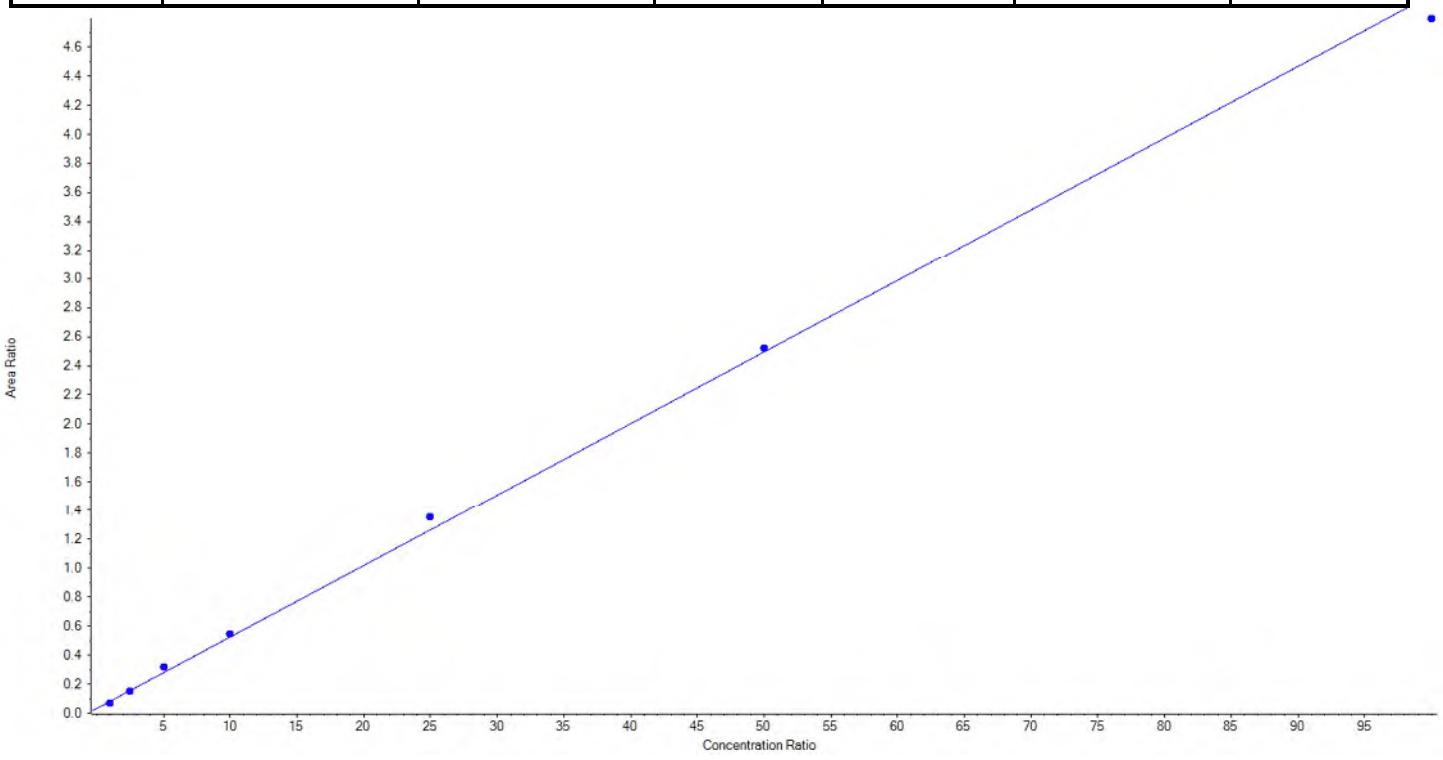
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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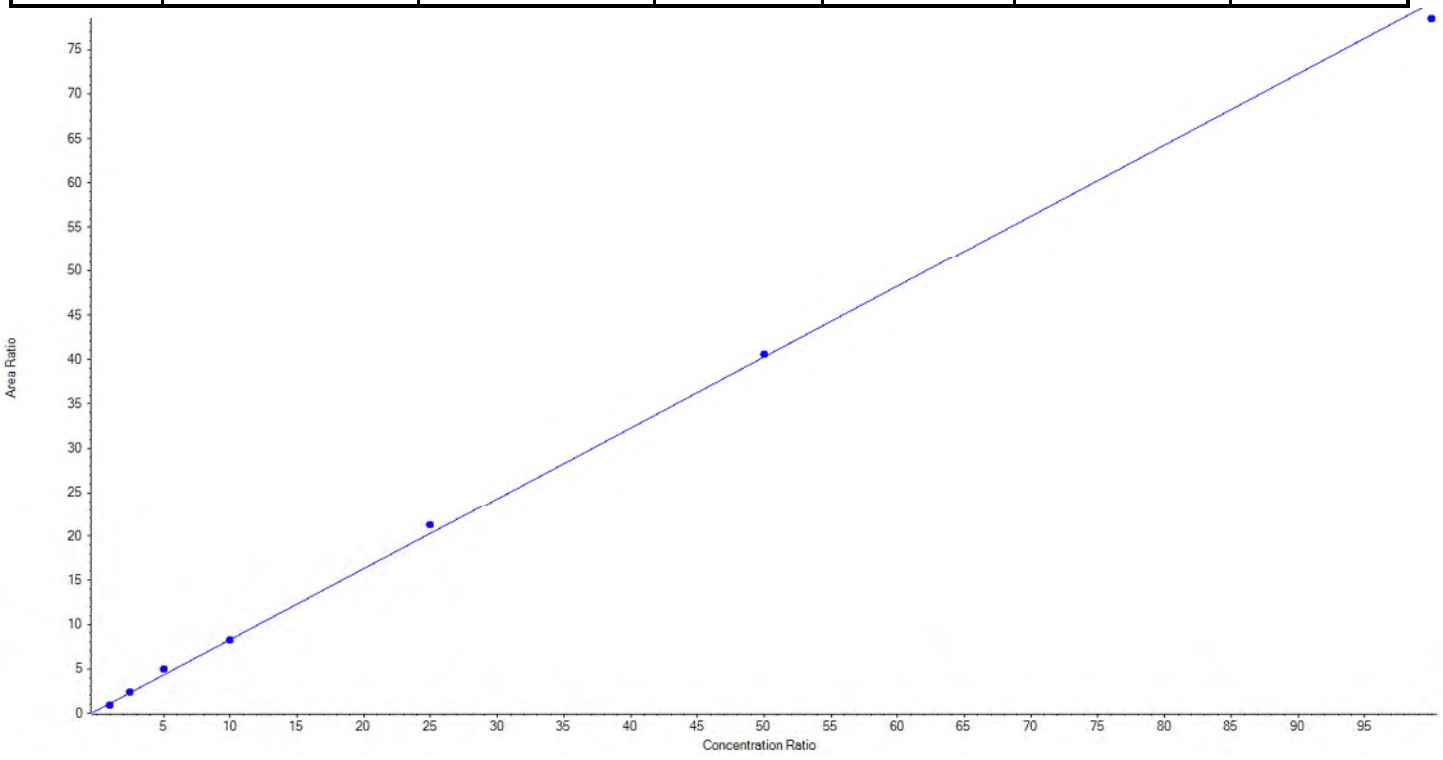
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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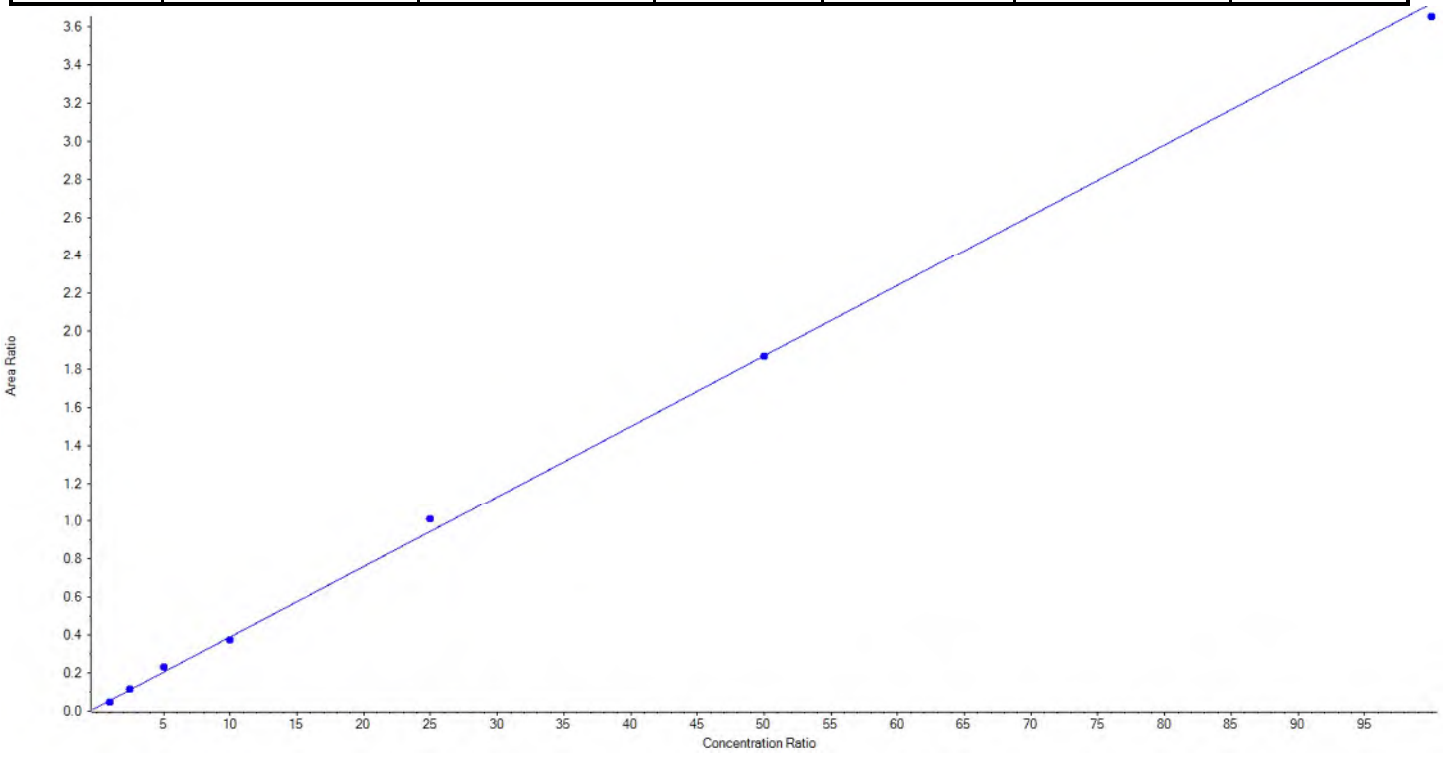
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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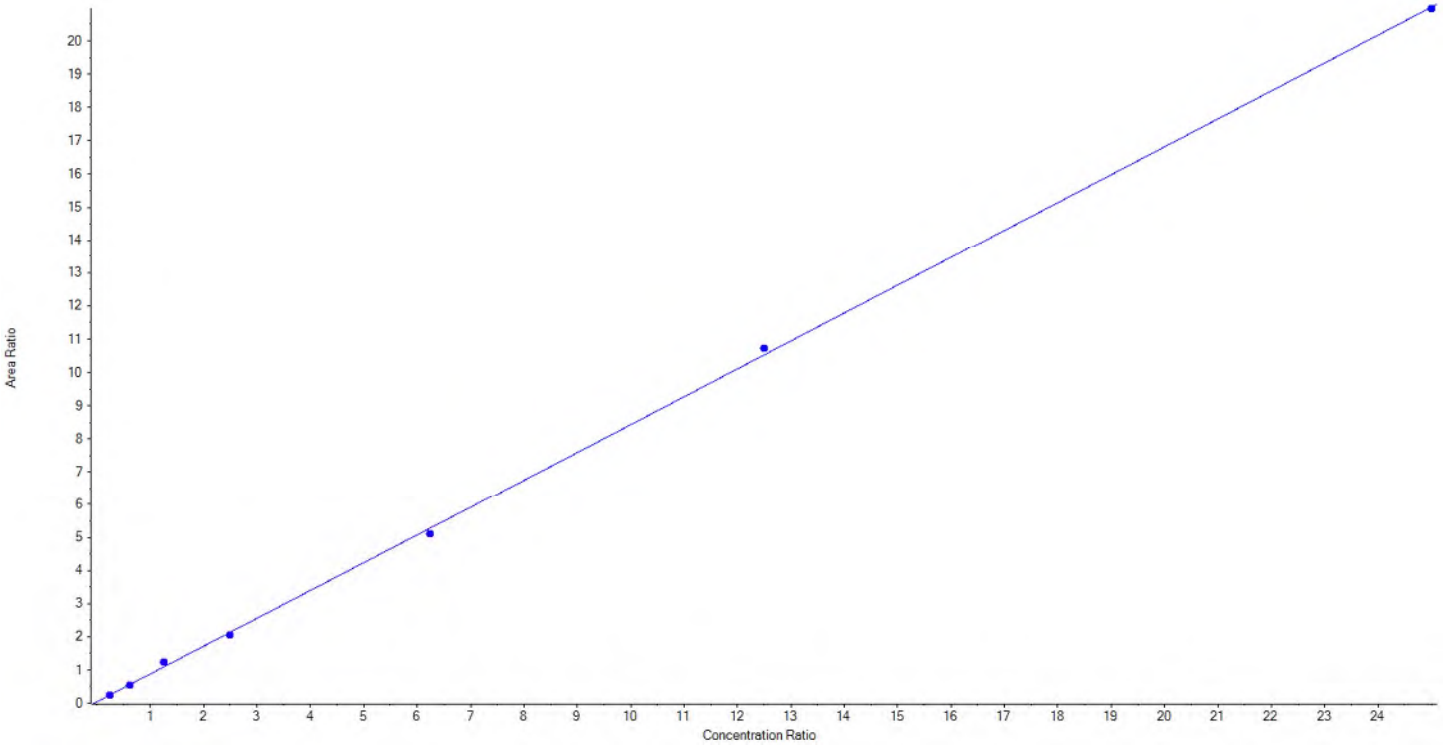
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.83899 x + 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



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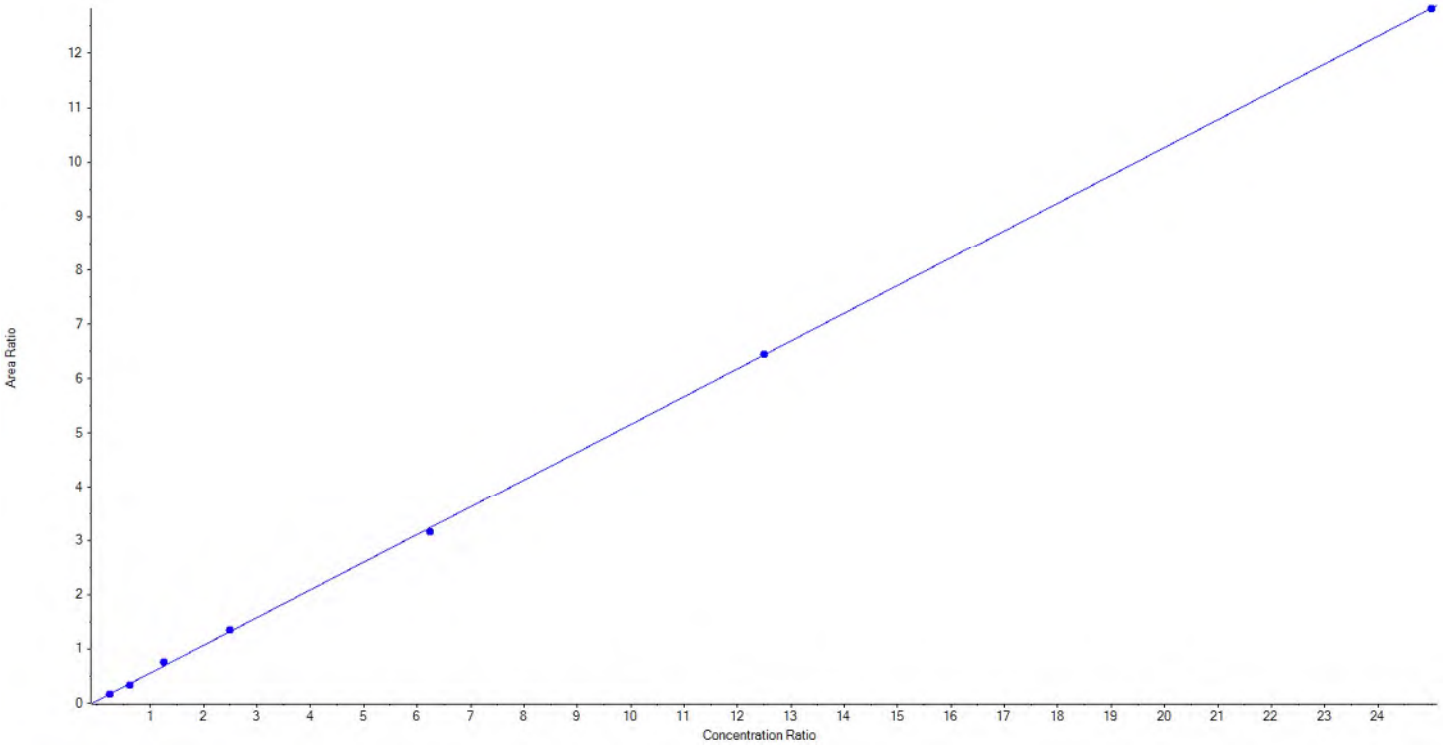
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.51145 x + 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



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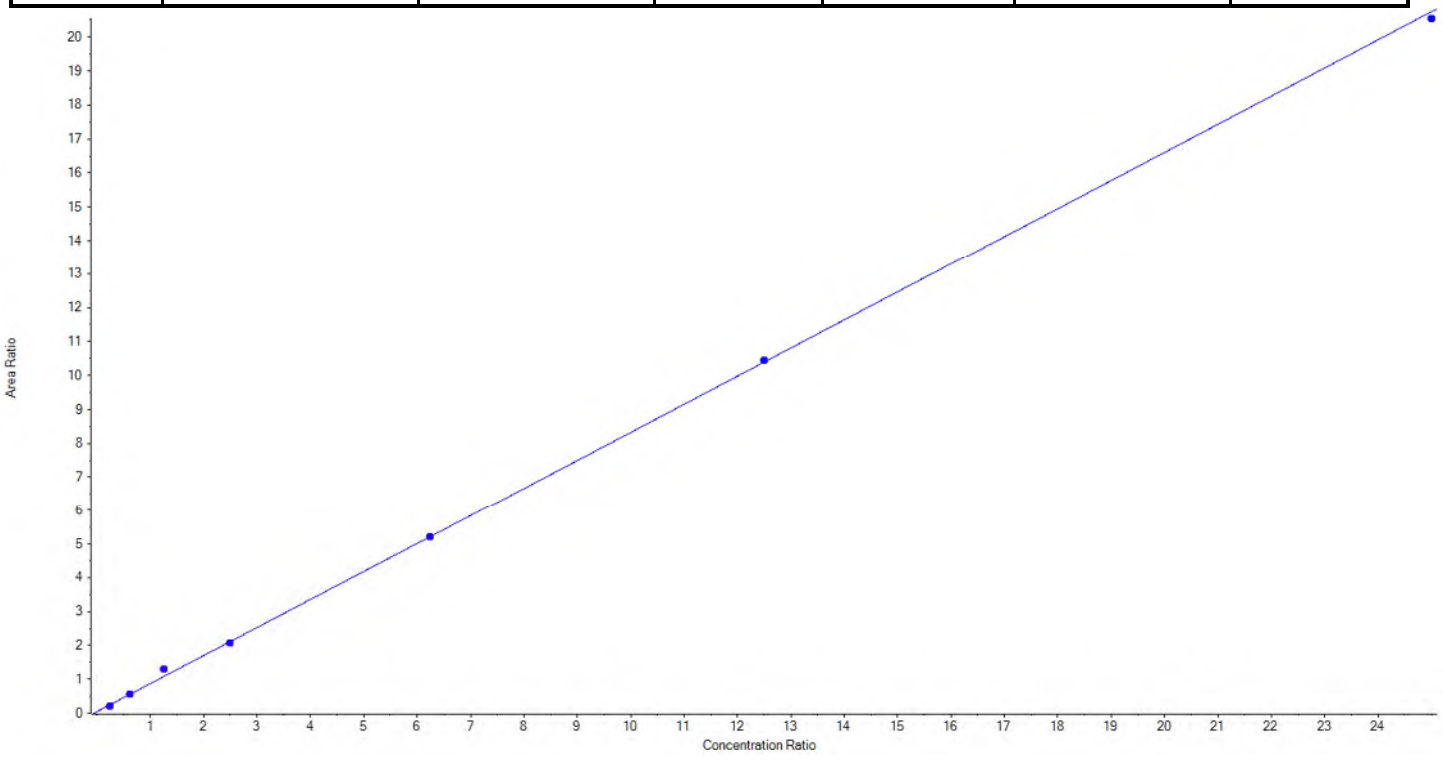
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.82809 x + 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



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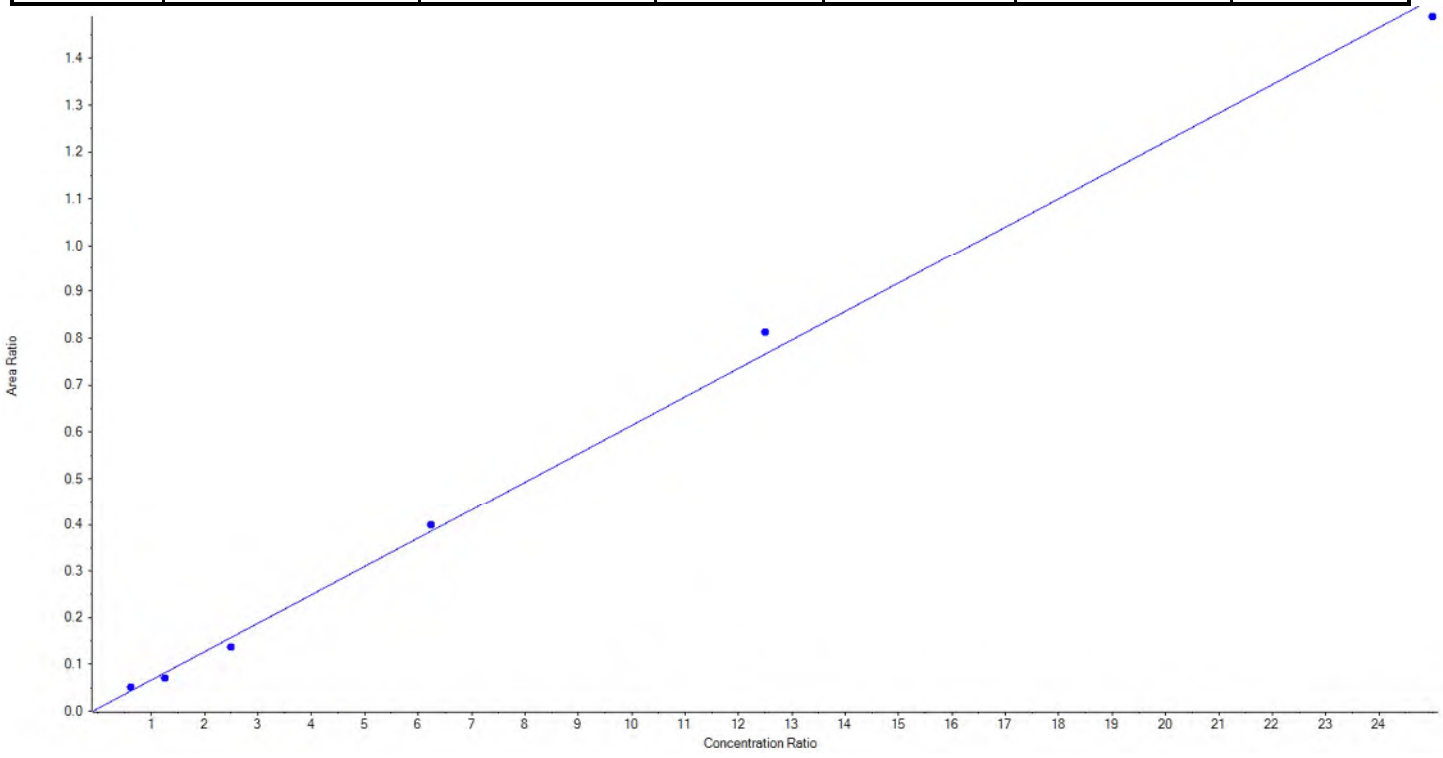
Calibration Summary Report

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



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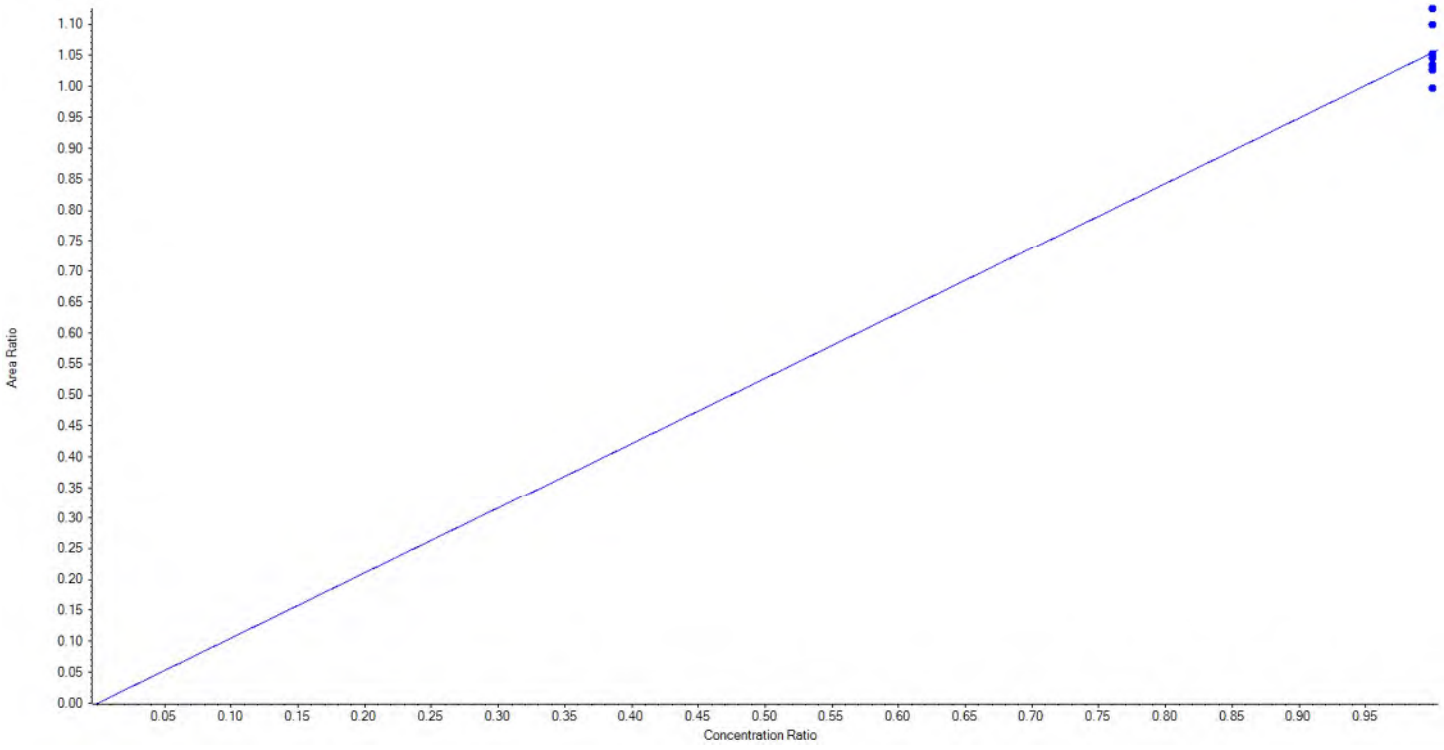
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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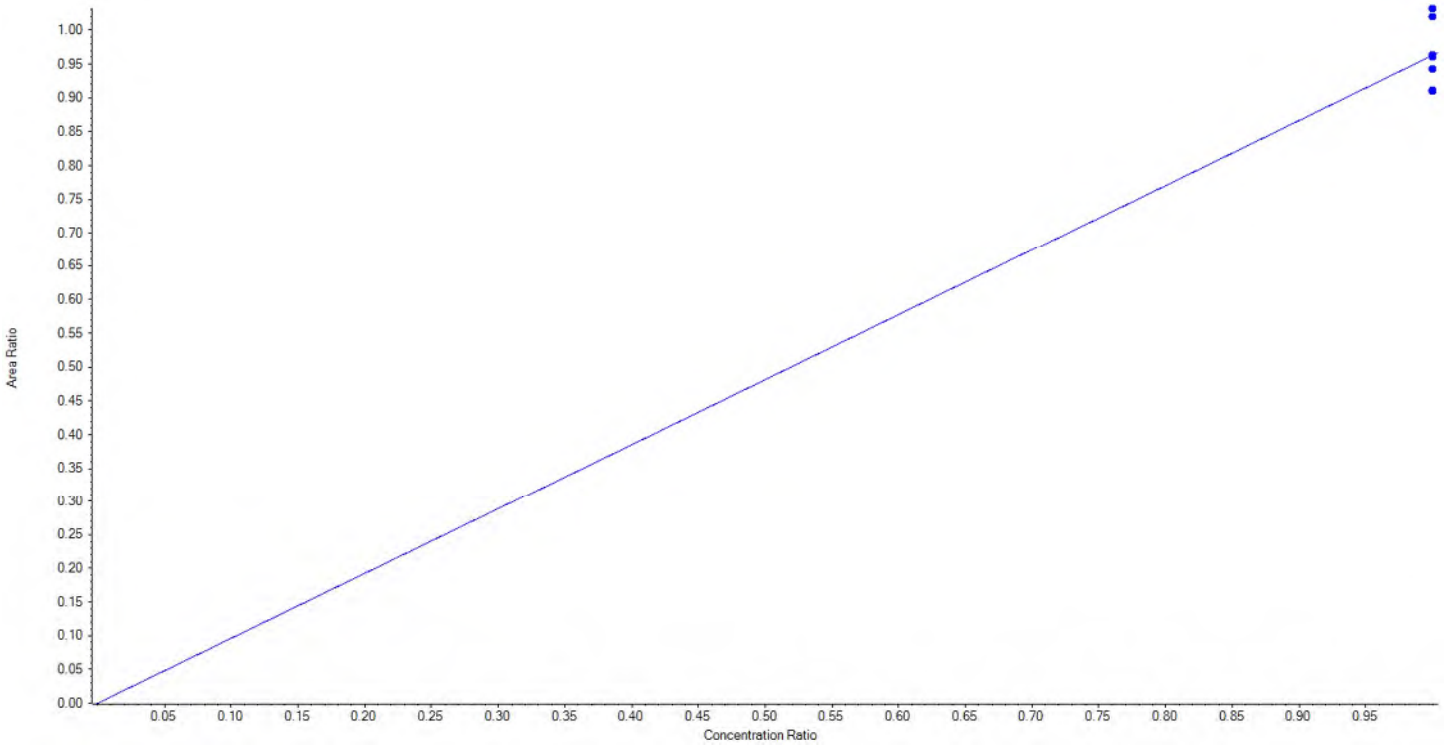
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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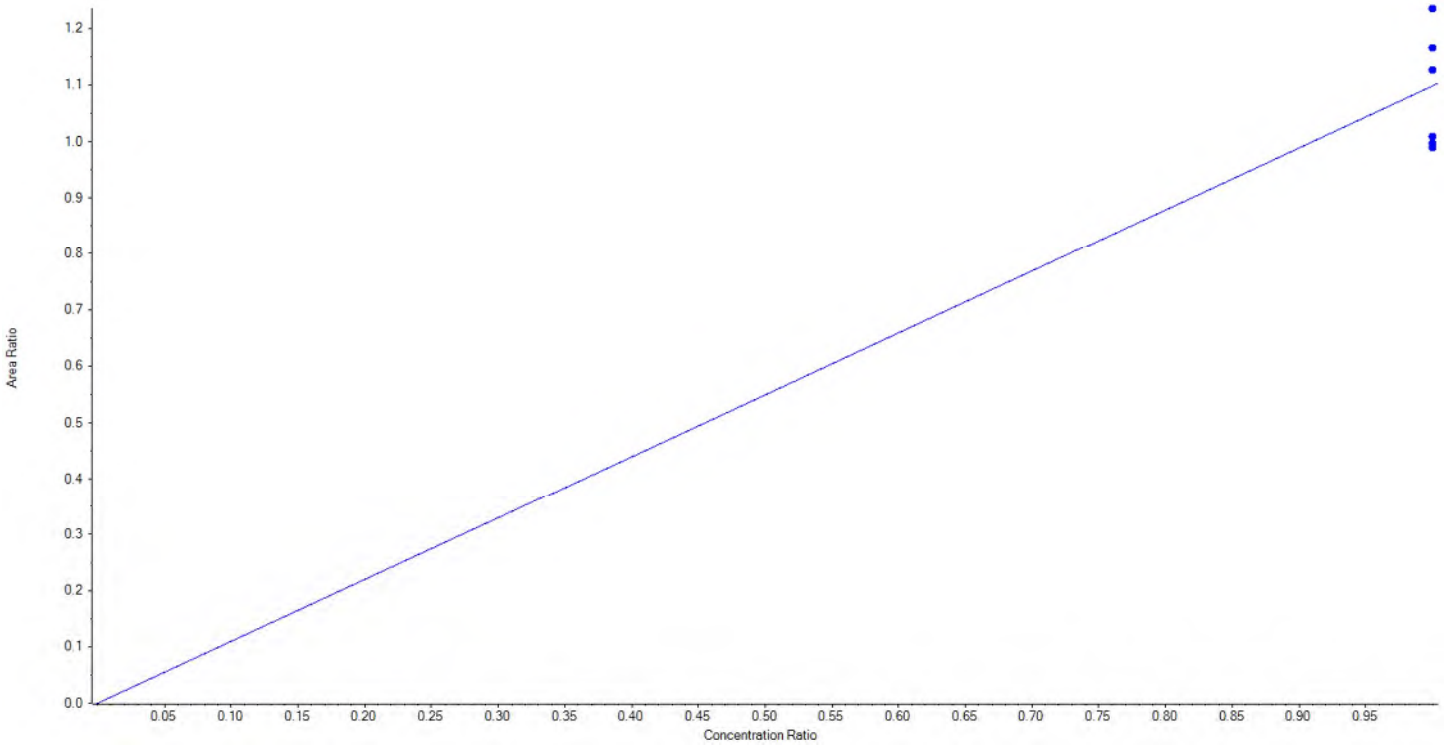
Calibration Summary Report

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



	Drinking Water Calibration Curve Concentrations (ng/L)								
	JZ78	JZ79	JZ80	JZ81	JZ82	JZ83	JZ84	JZ85	JZ86
PFHxA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFHpA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFOA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFNA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFUnA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDoA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTrDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTeDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NMeFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NEtFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFBS	22.15	44.30	88.60	221.50	443.00	885.00	2,212.50	4,425.00	8,850.00
PFHxS (branched)	22.80	45.60	91.20	228.00	456.00	912.00	2,280.00	4,560.00	9,120.00
PFOS (branched)	23.15	46.30	92.60	231.50	463.00	925.60	2,314.00	4,628.00	9,256.00
	Surrogates								
13C2-PFHxA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C2-PFDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
d5-EtFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Internal Standards								
13C2-PFOA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C4-PFOS	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00
d3-MeFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00

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Summary Quant Report

Created with Analyst Reporter
Printed: 23/08/2018 10:47:10 AM

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
PFDoA_1	613.0 / 569.0	3.46	36310.95	72.350069	140.3	false
PFDoA_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

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Summary Quant Report

Created with Analyst Reporter
Printed: 23/08/2018 10:47:14 AM

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

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Summary Quant Report

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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

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Summary Quant Report

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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			

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
PFDoA_1	613.0 / 569.0	3.44	301011.95	1013.028885	339.2	false
PFDoA_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

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Summary Quant Report

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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
PFDoA_1	613.0 / 569.0	3.44	737625.07	2652.886864	546.9	false
PFDoA_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

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Summary Quant Report

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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

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Summary Quant Report

Created with Analyst Reporter
Printed: 23/08/2018 10:47:33 AM

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

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 23/08/2018 10:48:00 AM

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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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			

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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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

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Summary Ion Ratio Report

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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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.46	13C2-PFOA	415.0 / 370.0	34949.15	100.00
PFDoA_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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.45	13C2-PFOA	415.0 / 370.0	38410.24	100.00
PFDoA_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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.48	13C2-PFOA	415.0 / 370.0	33013.13	100.00
PFDoA_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

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Summary Internal Standard Report

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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			

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
PFDoA_1	613.0 / 569.0	3.44	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFDoA_2	613.0 / 319.0	3.44	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTrDA_1	663.0 / 619.0	3.71	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTrDA_2	663.0 / 169.0	3.71	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTeDA_1	713.0 / 669.0	3.95	13C2-PFOA	415.0 / 370.0	33126.31	100.00
PFTeDA_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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.44	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFDoA_2	613.0 / 319.0	3.44	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTrDA_1	663.0 / 619.0	3.71	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTrDA_2	663.0 / 169.0	3.70	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTeDA_1	713.0 / 669.0	3.94	13C2-PFOA	415.0 / 370.0	31909.26	100.00
PFTeDA_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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.41	13C2-PFOA	415.0 / 370.0	40320.01	100.00
PFDoA_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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.41	13C2-PFOA	415.0 / 370.0	35899.15	100.00
PFDoA_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

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QC Summary Report

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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

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QC Summary Report

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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
PFTrDA_1	663.0 / 619.0	3.59	547.893142	500.00	109.58
PFTrDA_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

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Summary Quant Report

Created with Analyst Reporter
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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

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Summary Quant Report

Created with Analyst Reporter
Printed: 23/08/2018 10:51:10 AM

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

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Summary Ion Ratio Report

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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
PFTrDA_1	663.0 / 619.0	3.68	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.68	PFTrDA	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

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Summary Ion Ratio Report

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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.41	13C2-PFOA	415.0 / 370.0	35651.96	100.00
PFDoA_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

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Summary Internal Standard Report

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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
PFDoA_1	613.0 / 569.0	3.33	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFDoA_2	613.0 / 319.0	3.33	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFTrDA_1	663.0 / 619.0	3.59	13C2-PFOA	415.0 / 370.0	40345.09	100.00
PFTrDA_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

Raw Analytical Data

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Summary Quant Report

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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
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTrDA_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

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Summary Quant Report

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Sample Name	CR631PB-FS(0)	**Injection Vial**	14
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:56:50	**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
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTrDA_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	41661.20	116.782554	792.3	false
13C2-PFDA	515.0 / 470.0	2.83	35425.73	108.748601	783.6	false
d5-EtFOSAA	589.0 / 419.0	3.11	23828.99	396.267146	263.3	false

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Summary Quant Report

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Sample Name	CR632LCS-FS(0)	**Injection Vial**	15
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:05:47	**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	1447389.36	3461.520578	3523.0	false
PFBS_2	298.9 / 99.0	1.56	428628.54	3458.271388	1687.7	false
PFHxA_1	313.0 / 269.0	1.79	1601543.04	4085.007326	235.9	false
PFHxA_2	313.0 / 119.0	1.79	122825.69	4161.409041	251.3	false
PFHpA_1	363.0 / 319.0	2.04	1536086.12	4151.202325	391.4	false
PFHpA_2	363.0 / 169.0	2.03	29366.87	3990.038170	297.0	false
PFHxS_1	399.0 / 80.0	2.04	1698223.89	3530.423792	392.0	false
PFHxS_2	399.0 / 99.0	2.04	487815.40	3441.297050	820.6	false
PFOA_1	413.0 / 369.0	2.28	1413733.05	3863.666067	399.4	false
PFOA_2	413.0 / 169.0	2.28	95769.61	3822.544145	357.0	false
PFNA_1	463.0 / 419.0	2.53	1239826.87	3882.786259	470.7	false
PFNA_2	463.0 / 219.0	2.53	387787.88	3927.013224	480.4	false
PFOS_1	499.0 / 80.0	2.52	2087313.73	3294.267670	415.9	false
PFOS_2	499.0 / 99.0	2.52	450513.86	3836.874386	795.1	false
PFDA_1	513.0 / 469.0	2.80	1346502.34	3750.065853	484.6	false
PFDA_2	513.0 / 219.0	2.79	60766.08	3932.445967	277.7	false
PFUnA_1	563.0 / 519.0	3.07	1254436.84	3544.877228	561.9	true
PFUnA_2	563.0 / 269.0	3.07	62684.76	3624.547885	319.5	true
PFDoA_1	613.0 / 569.0	3.34	1366128.41	3697.675228	602.8	true
PFDoA_2	613.0 / 319.0	3.34	222708.84	3742.614344	546.9	true
PFTrDA_1	663.0 / 619.0	3.60	1271120.31	3562.607379	791.4	true
PFTrDA_2	663.0 / 169.0	3.59	81826.08	3831.844763	446.7	true
PFTeDA_1	713.0 / 669.0	3.83	1280145.40	3719.467319	1380.2	false
PFTeDA_2	713.0 / 169.0	3.83	60411.80	3775.184893	709.5	false
NMeFOSAA_1	570.0 / 419.0	2.93	219150.22	4099.190198	924.8	false
NMeFOSAA_2	570.0 / 512.0	2.93	125907.05	3847.969477	621.3	false
NEtFOSAA_1	584.0 / 419.0	3.07	210517.44	3986.944175	776.4	true
NEtFOSAA_2	584.0 / 483.0	3.07	12859.74	3295.458279	274.1	true
13C2-PFHxA	315.0 / 270.0	1.78	49466.36	110.082950	1128.9	false
13C2-PFDA	515.0 / 470.0	2.79	40200.38	97.971323	553.7	false
d5-EtFOSAA	589.0 / 419.0	3.06	25826.23	370.701390	241.8	true

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Summary Quant Report

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Sample Name	J7448-FS(0)	**Injection Vial**	16
Sample ID	JAX-RES-08152018-1015-34-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:14:44	**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	2.97	11580.72	0.734229	47.6	false
PFNA_2	463.0 / 219.0	2.95	3513.99	< 0	33.8	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
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTrDA_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	39065.71	117.282147	782.0	false
13C2-PFDA	515.0 / 470.0	2.84	30497.55	100.267399	556.4	false
d5-EtFOSAA	589.0 / 419.0	3.10	20696.66	386.881593	194.2	false

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Summary Quant Report

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Sample Name	J7450-FS(0)	**Injection Vial**	17
Sample ID	JAX-RES-08152018-1045-33-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:23:42	**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	2.95	8818.62	< 0	38.1	false
PFNA_2	463.0 / 219.0	2.93	2966.94	< 0	34.6	false
PFOS_1	499.0 / 80.0	2.54	46481.63	55.145172	61.2	false
PFOS_2	499.0 / 99.0	2.54	7588.81	43.383543	77.6	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
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTrDA_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	38624.91	102.169315	796.6	false
13C2-PFDA	515.0 / 470.0	2.81	32218.64	93.329499	868.3	false
d5-EtFOSAA	589.0 / 419.0	3.07	20994.88	355.768512	229.4	true

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Summary Quant Report

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Sample Name	J7452-FS(0)	**Injection Vial**	18
Sample ID	JAX-RES-08152018-1130-15-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:32:38	**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	2.95	9904.17	< 0	43.2	false
PFNA_2	463.0 / 219.0	2.94	2526.68	< 0	34.6	false
PFOS_1	499.0 / 80.0	2.54	60399.75	70.165873	52.3	false
PFOS_2	499.0 / 99.0	2.53	11205.01	69.718989	100.4	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
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTrDA_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	44537.75	111.559671	956.3	false
13C2-PFDA	515.0 / 470.0	2.81	39548.70	108.485056	829.7	false
d5-EtFOSAA	589.0 / 419.0	3.08	23996.68	395.560183	254.5	true

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

Sample Name	CR631PB-FS(0)	**Injection Vial**	14
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:56:50	**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	1.77				
13C2-PFDA	515.0 / 470.0	2.83		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.11		N/A	N/A	ü

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Summary Ion Ratio Report

Sample Name	CR632LCS-FS(0)	**Injection Vial**	15
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:05:47	**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	0.296	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.077	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.03	PFHpA	0.019	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.287	0.299	ü
PFOA_1	413.0 / 369.0	2.28	PFOA			
PFOA_2	413.0 / 169.0	2.28	PFOA	0.068	0.068	ü
PFNA_1	463.0 / 419.0	2.53	PFNA			
PFNA_2	463.0 / 219.0	2.53	PFNA	0.313	0.310	ü
PFOS_1	499.0 / 80.0	2.52	PFOS			
PFOS_2	499.0 / 99.0	2.52	PFOS	0.216	0.186	ü
PFDA_1	513.0 / 469.0	2.80	PFDA			
PFDA_2	513.0 / 219.0	2.79	PFDA	0.045	0.044	ü
PFUnA_1	563.0 / 519.0	3.07	PFUnA			
PFUnA_2	563.0 / 269.0	3.07	PFUnA	0.050	0.055	ü
PFDoA_1	613.0 / 569.0	3.34	PFDoA			
PFDoA_2	613.0 / 319.0	3.34	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.60	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.59	PFTrDA	0.064	0.063	ü
PFTeDA_1	713.0 / 669.0	3.83	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.83	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.93	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.93	NMeFOSAA	0.575	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.07	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.07	NEtFOSAA	0.061	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

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Summary Ion Ratio Report

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Sample Name	J7448-FS(0)	**Injection Vial**	16
Sample ID	JAX-RES-08152018-1015-34-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:14:44	**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	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.303	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	1.77				
13C2-PFDA	515.0 / 470.0	2.84		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.10		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J7450-FS(0)	**Injection Vial**	17
Sample ID	JAX-RES-08152018-1045-33-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:23:42	**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	2.93	PFNA	0.336	0.310	ü
PFOS_1	499.0 / 80.0	2.54	PFOS			
PFOS_2	499.0 / 99.0	2.54	PFOS	0.163	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	2.81		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.07		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J7452-FS(0)	**Injection Vial**	18
Sample ID	JAX-RES-08152018-1130-15-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:32:38	**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	2.94	PFNA	0.255	0.310	ü
PFOS_1	499.0 / 80.0	2.54	PFOS			
PFOS_2	499.0 / 99.0	2.53	PFOS	0.186	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	2.81		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.08		N/A	N/A	ü

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Summary Internal Standard Report

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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
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	33036.09	100.00
PFTrDA_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

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Summary Internal Standard Report

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Sample Name	CR631PB-FS(0)	**Injection Vial**	14
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:56:50	**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	157722.39	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	157722.39	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	157722.39	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	157722.39	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	157722.39	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	157722.39	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	33834.64	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21900.66	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	21900.66	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21900.66	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	21900.66	400.00
13C2-PFHxA	315.0 / 270.0	1.77	13C2-PFOA	415.0 / 370.0	33834.64	100.00
13C2-PFDA	515.0 / 470.0	2.83	13C2-PFOA	415.0 / 370.0	33834.64	100.00
d5-EtFOSAA	589.0 / 419.0	3.11	d3-MeFOSAA	573.0 / 419.0	21900.66	400.00

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Summary Internal Standard Report

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Sample Name	CR632LCS-FS(0)	**Injection Vial**	15
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:05:47	**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	183344.11	287.00
PFBS_2	298.9 / 99.0	1.56	13C4-PFOS	503.0 / 80.0	183344.11	287.00
PFHxA_1	313.0 / 269.0	1.79	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFHxA_2	313.0 / 119.0	1.79	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFHpA_1	363.0 / 319.0	2.04	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFHpA_2	363.0 / 169.0	2.03	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFHxS_1	399.0 / 80.0	2.04	13C4-PFOS	503.0 / 80.0	183344.11	287.00
PFHxS_2	399.0 / 99.0	2.04	13C4-PFOS	503.0 / 80.0	183344.11	287.00
PFOA_1	413.0 / 369.0	2.28	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFOA_2	413.0 / 169.0	2.28	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFNA_1	463.0 / 419.0	2.53	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFNA_2	463.0 / 219.0	2.53	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFOS_1	499.0 / 80.0	2.52	13C4-PFOS	503.0 / 80.0	183344.11	287.00
PFOS_2	499.0 / 99.0	2.52	13C4-PFOS	503.0 / 80.0	183344.11	287.00
PFDA_1	513.0 / 469.0	2.80	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFDA_2	513.0 / 219.0	2.79	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFUnA_1	563.0 / 519.0	3.07	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFUnA_2	563.0 / 269.0	3.07	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFDoA_1	613.0 / 569.0	3.34	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFDoA_2	613.0 / 319.0	3.34	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFTrDA_1	663.0 / 619.0	3.60	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFTrDA_2	663.0 / 169.0	3.59	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFTeDA_1	713.0 / 669.0	3.83	13C2-PFOA	415.0 / 370.0	42618.45	100.00
PFTeDA_2	713.0 / 169.0	3.83	13C2-PFOA	415.0 / 370.0	42618.45	100.00
NMeFOSAA_1	570.0 / 419.0	2.93	d3-MeFOSAA	573.0 / 419.0	25373.27	400.00
NMeFOSAA_2	570.0 / 512.0	2.93	d3-MeFOSAA	573.0 / 419.0	25373.27	400.00
NEtFOSAA_1	584.0 / 419.0	3.07	d3-MeFOSAA	573.0 / 419.0	25373.27	400.00
NEtFOSAA_2	584.0 / 483.0	3.07	d3-MeFOSAA	573.0 / 419.0	25373.27	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	42618.45	100.00
13C2-PFDA	515.0 / 470.0	2.79	13C2-PFOA	415.0 / 370.0	42618.45	100.00
d5-EtFOSAA	589.0 / 419.0	3.06	d3-MeFOSAA	573.0 / 419.0	25373.27	400.00

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Summary Internal Standard Report

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Sample Name	J7448-FS(0)	**Injection Vial**	16
Sample ID	JAX-RES-08152018-1015-34-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:14:44	**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	146482.20	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	146482.20	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	146482.20	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	146482.20	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFNA_1	463.0 / 419.0	2.97	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	146482.20	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	146482.20	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31591.60	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19483.27	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	19483.27	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19483.27	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	19483.27	400.00
13C2-PFHxA	315.0 / 270.0	1.77	13C2-PFOA	415.0 / 370.0	31591.60	100.00
13C2-PFDA	515.0 / 470.0	2.84	13C2-PFOA	415.0 / 370.0	31591.60	100.00
d5-EtFOSAA	589.0 / 419.0	3.10	d3-MeFOSAA	573.0 / 419.0	19483.27	400.00

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Summary Internal Standard Report

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Sample Name	J7450-FS(0)	**Injection Vial**	17
Sample ID	JAX-RES-08152018-1045-33-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:23:42	**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	144108.02	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	144108.02	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	144108.02	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	144108.02	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFNA_2	463.0 / 219.0	2.93	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFOS_1	499.0 / 80.0	2.54	13C4-PFOS	503.0 / 80.0	144108.02	287.00
PFOS_2	499.0 / 99.0	2.54	13C4-PFOS	503.0 / 80.0	144108.02	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	35855.42	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21492.43	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	21492.43	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21492.43	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	21492.43	400.00
13C2-PFHxA	315.0 / 270.0	1.79	13C2-PFOA	415.0 / 370.0	35855.42	100.00
13C2-PFDA	515.0 / 470.0	2.81	13C2-PFOA	415.0 / 370.0	35855.42	100.00
d5-EtFOSAA	589.0 / 419.0	3.07	d3-MeFOSAA	573.0 / 419.0	21492.43	400.00

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Summary Internal Standard Report

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Printed: 23/08/2018 10:54:49 AM

Sample Name	J7452-FS(0)	**Injection Vial**	18
Sample ID	JAX-RES-08152018-1130-15-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:32:38	**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	161563.51	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	161563.51	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	161563.51	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	161563.51	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFOS_1	499.0 / 80.0	2.54	13C4-PFOS	503.0 / 80.0	161563.51	287.00
PFOS_2	499.0 / 99.0	2.53	13C4-PFOS	503.0 / 80.0	161563.51	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	37864.21	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	22094.19	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	22094.19	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	22094.19	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	22094.19	400.00
13C2-PFHxA	315.0 / 270.0	1.78	13C2-PFOA	415.0 / 370.0	37864.21	100.00
13C2-PFDA	515.0 / 470.0	2.81	13C2-PFOA	415.0 / 370.0	37864.21	100.00
d5-EtFOSAA	589.0 / 419.0	3.08	d3-MeFOSAA	573.0 / 419.0	22094.19	400.00

Chromatograms

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Chromatogram Report

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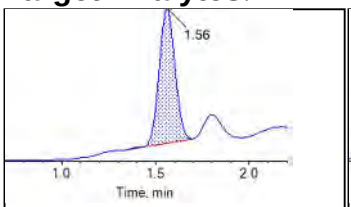
Printed: 23/08/2018 10:55:23 AM

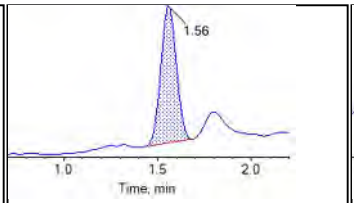
Sample Name	JZ80	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T18:27:27	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

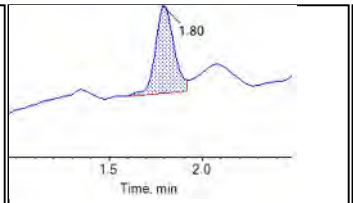
Target Analytes:



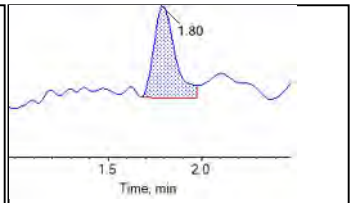
PFBS_1



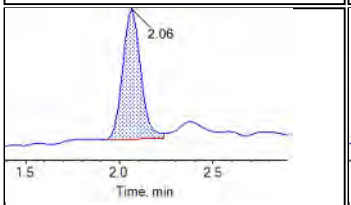
PFBS_2



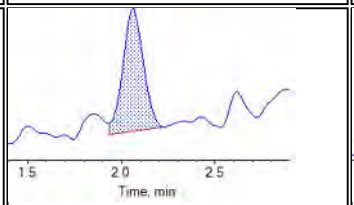
PFHxA_1



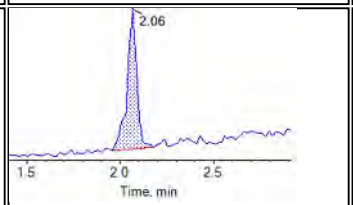
PFHxA_2



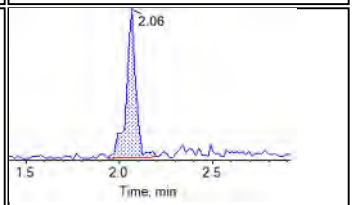
PFHpA_1



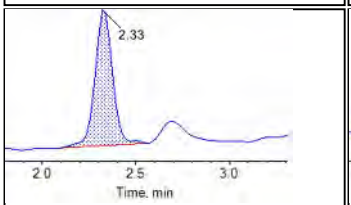
PFHpA_2



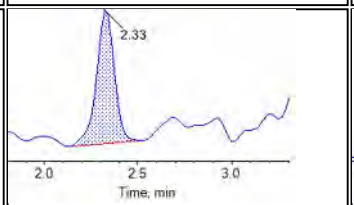
PFHxS_1



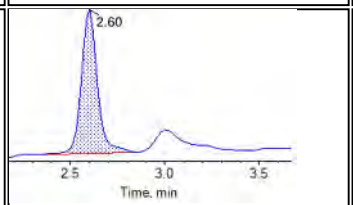
PFHxS_2



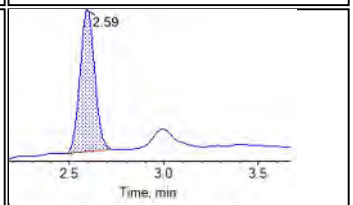
PFOA_1



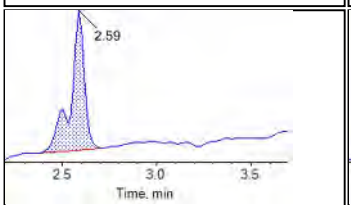
PFOA_2



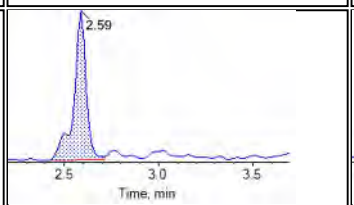
PFNA_1



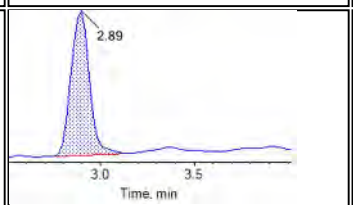
PFNA_2



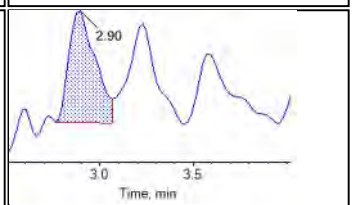
PFOS_1



PFOS_2



PFDA_1



PFDA_2

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Chromatogram Report

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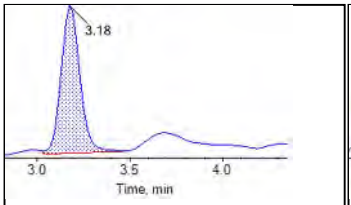
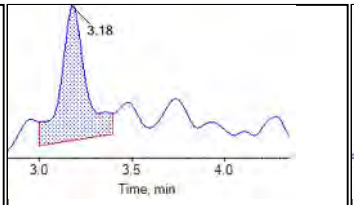
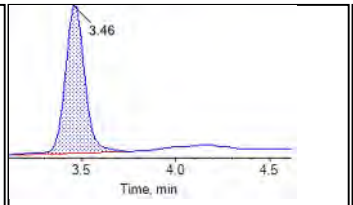


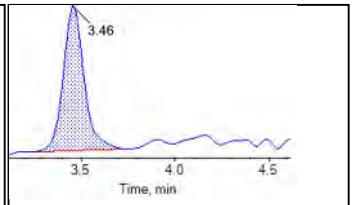
PFUnA_1



PFUnA_2



PFDoA_1



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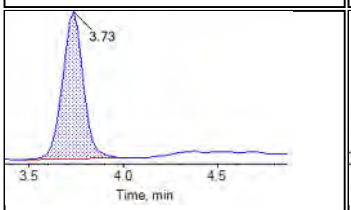
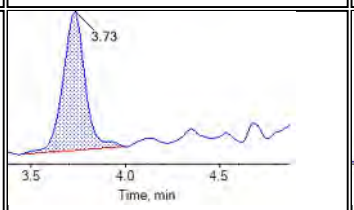
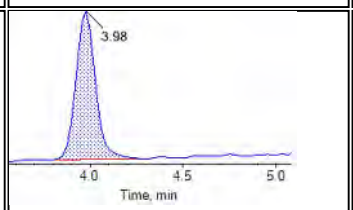


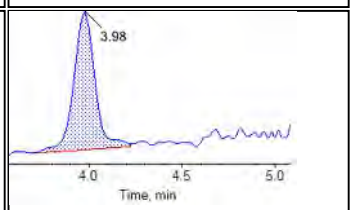
PFTrDA_1



PFTrDA_2



PFTeDA_1



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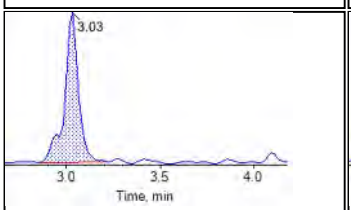
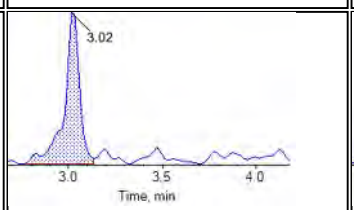
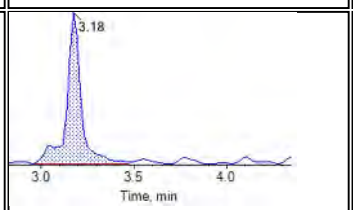


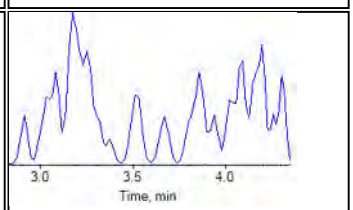
NMeFOSAA_1



NMeFOSAA_2



NEtFOSAA_1



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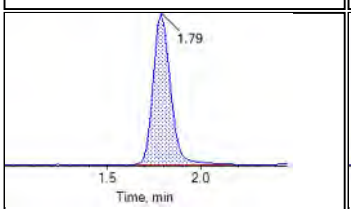
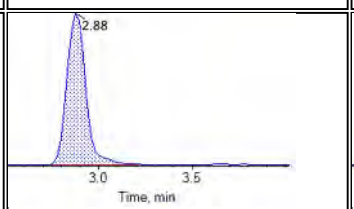
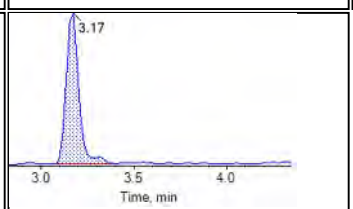


13C2-PFHxA

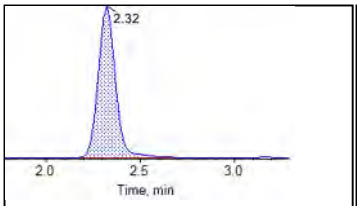


13C2-PFDA

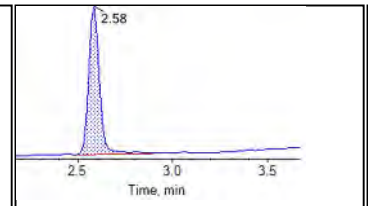


d5-EtFOSAA

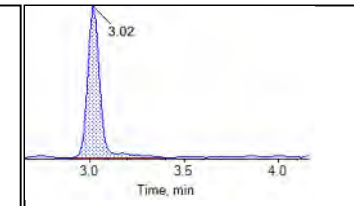
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

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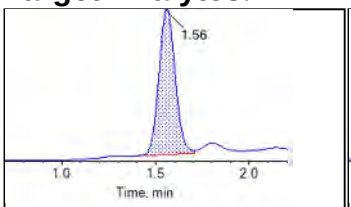
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:55:28 AM

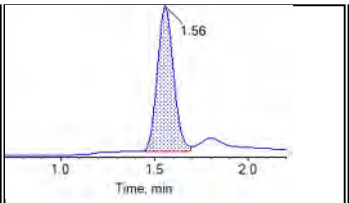
Sample Name	JZ81	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T18:36:23	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

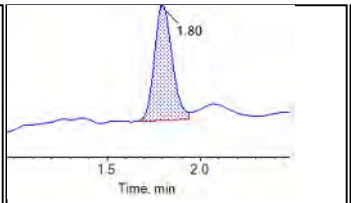
Target Analytes:



PFBS_1



PFBS_2



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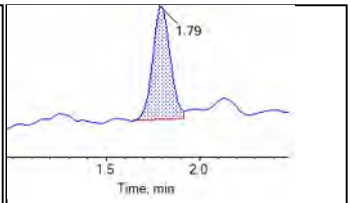

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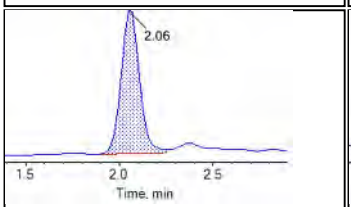

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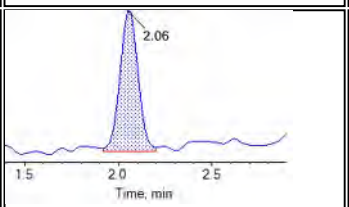

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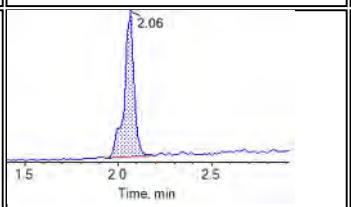

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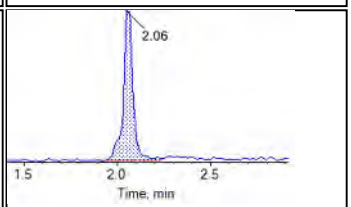

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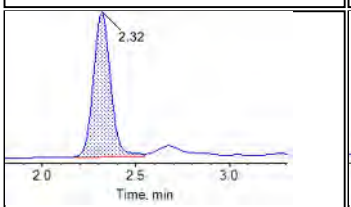

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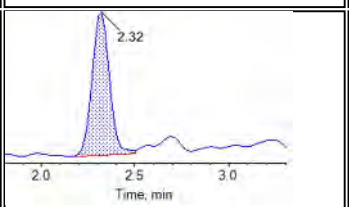

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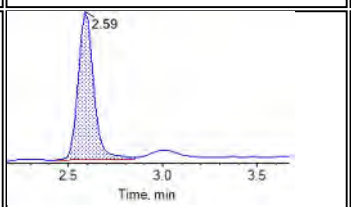

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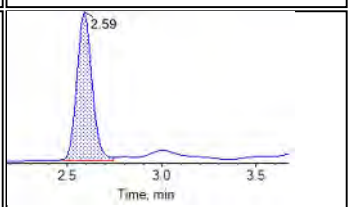

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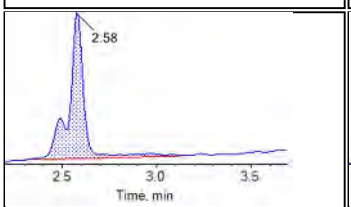

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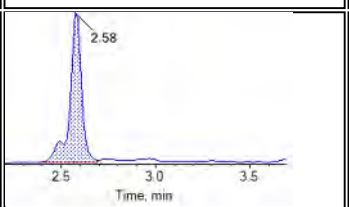

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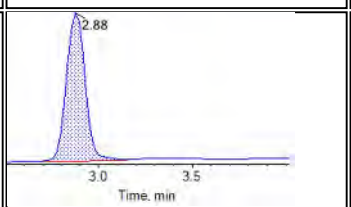

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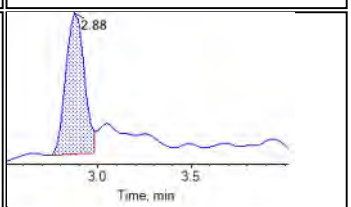

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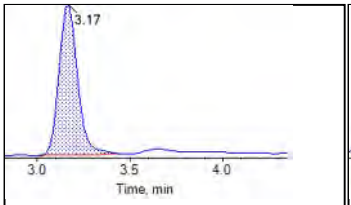

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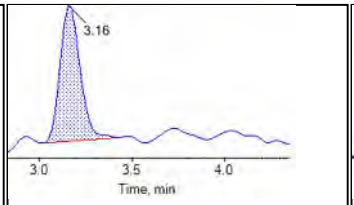

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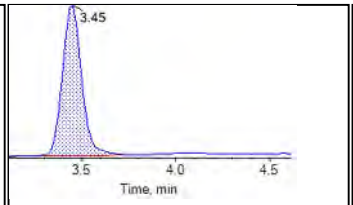

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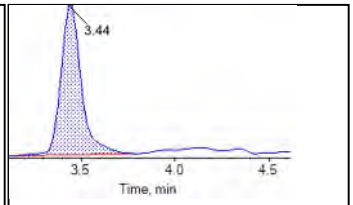

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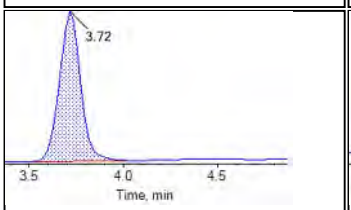

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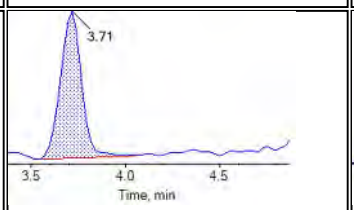

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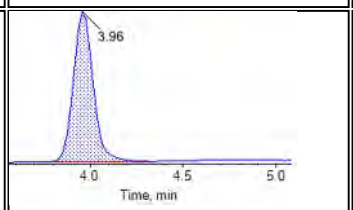

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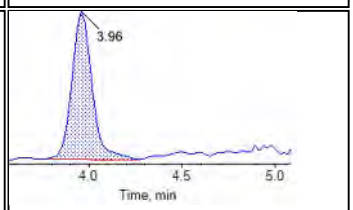

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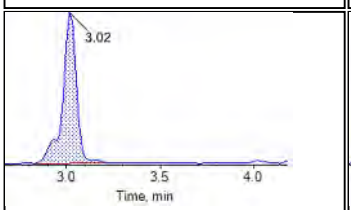

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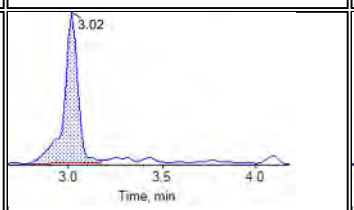

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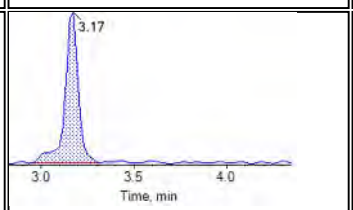

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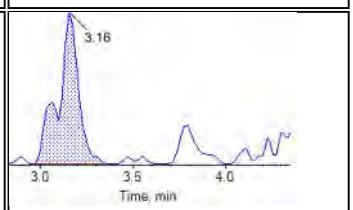

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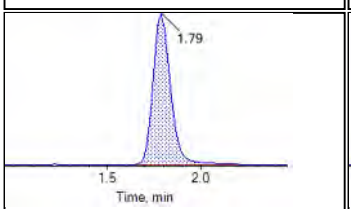

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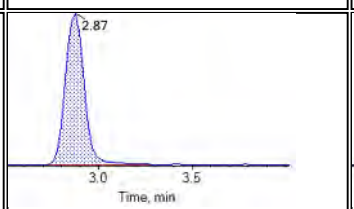

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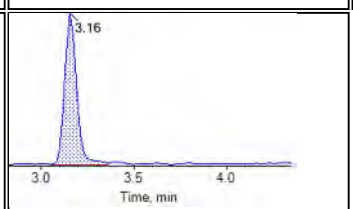

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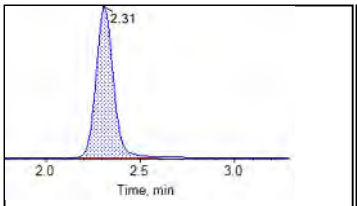

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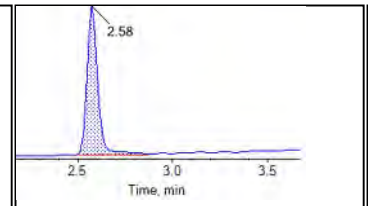

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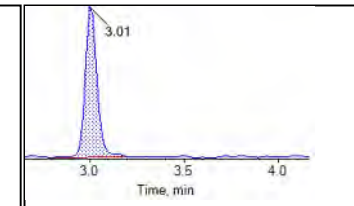

d3-MeFOSAA

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Chromatogram Report

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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			

Chromatograms

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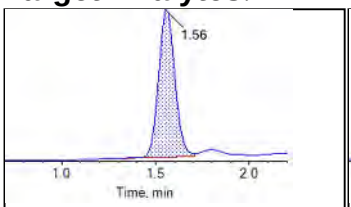

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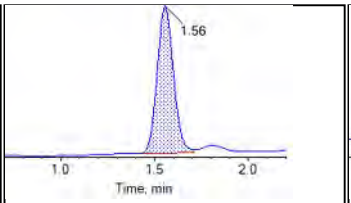

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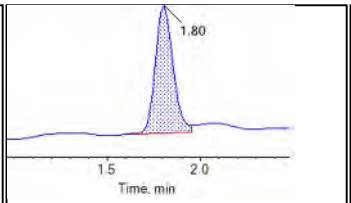

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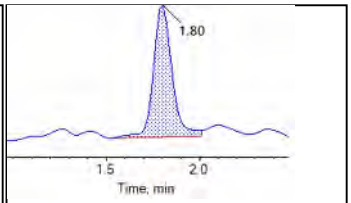

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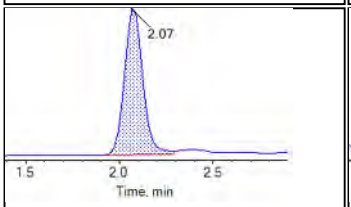

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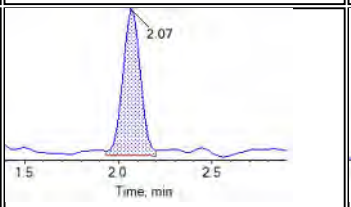

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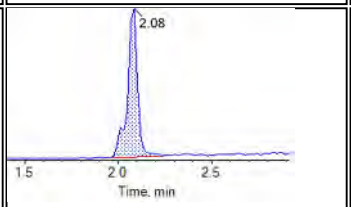

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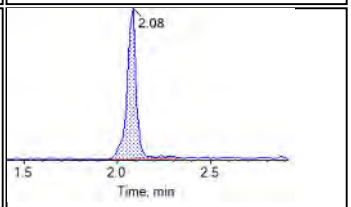

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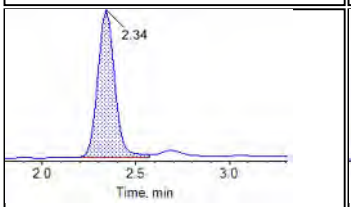

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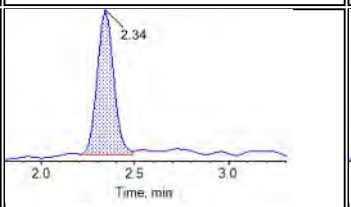

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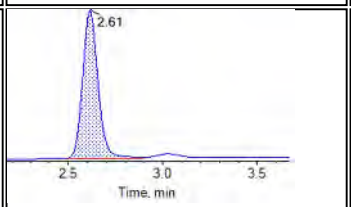

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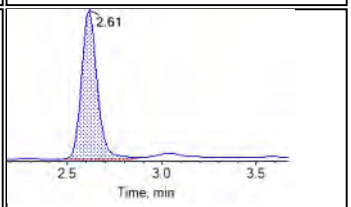

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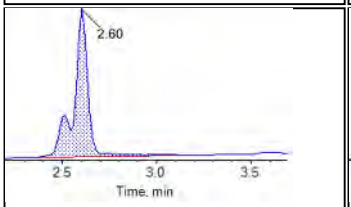

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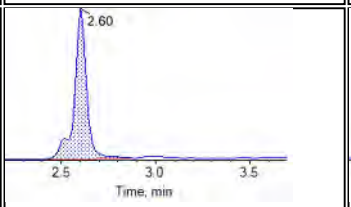

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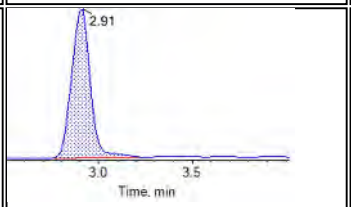

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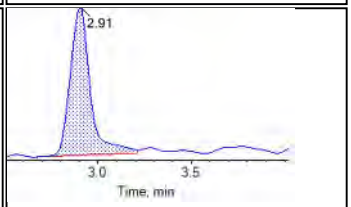

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Chromatogram Report

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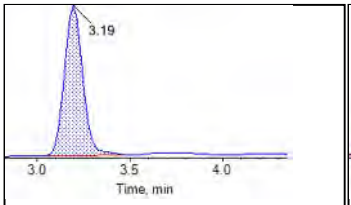

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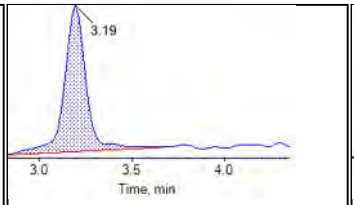

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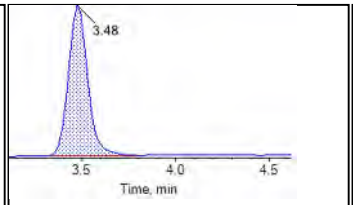

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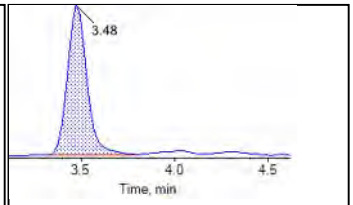

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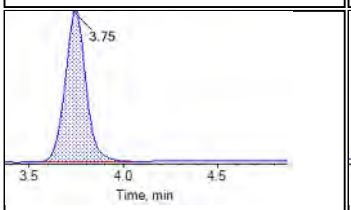

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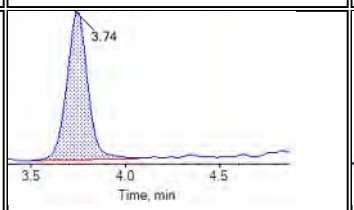

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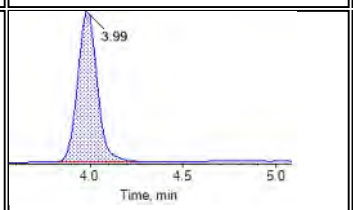

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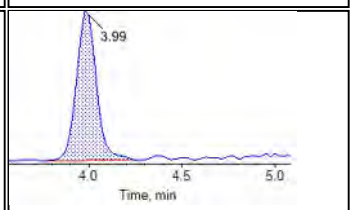

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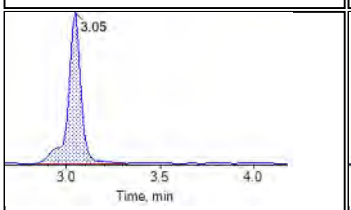

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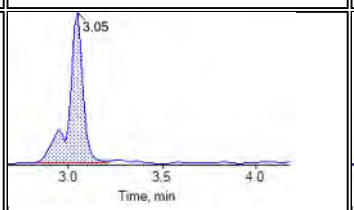

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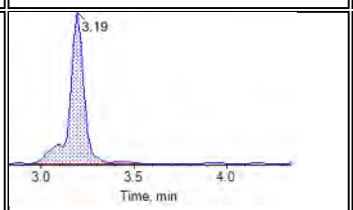

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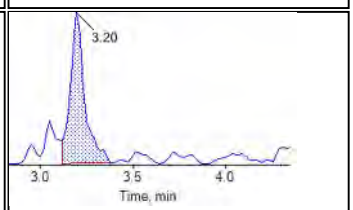

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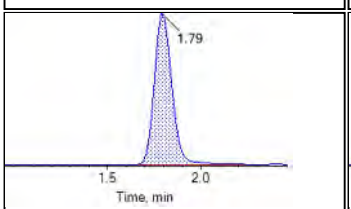
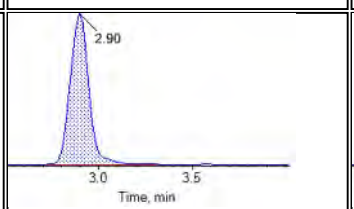


13C2-PFHxA



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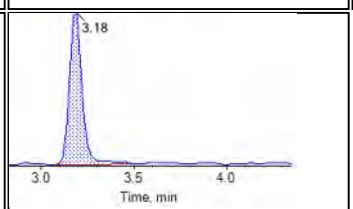
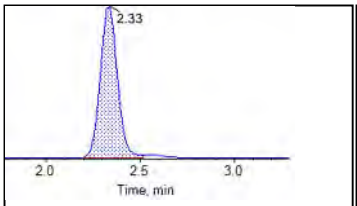


d5-EtFOSAA

Internal Standards:



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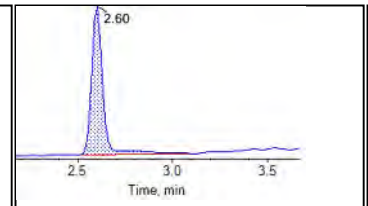
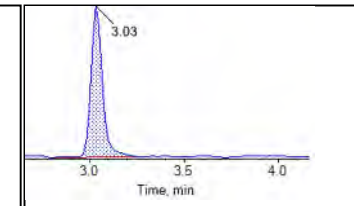


13C4-PFOS



d3-MeFOSAA

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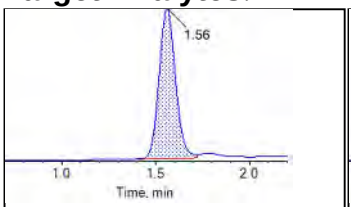
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:55:38 AM

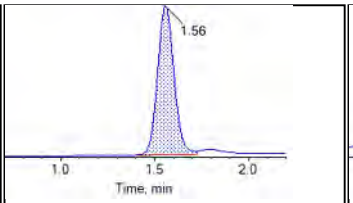
Sample Name	JZ83	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T18:54:15	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

Target Analytes:



PFBS_1



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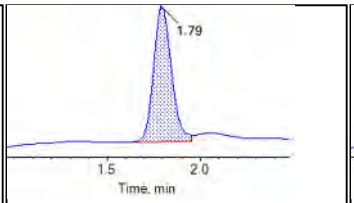

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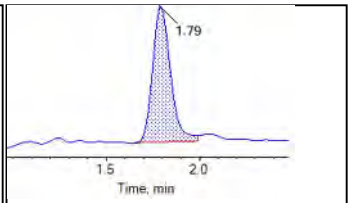

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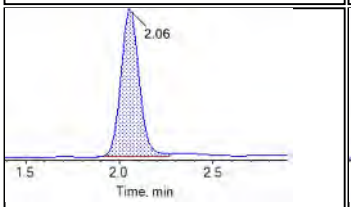

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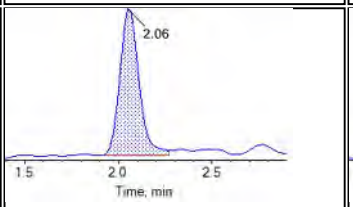

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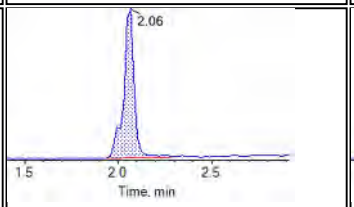

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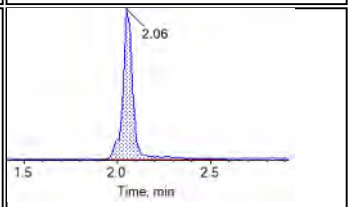

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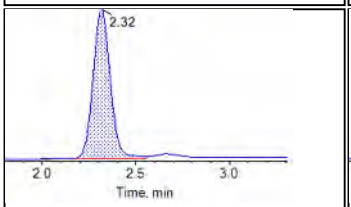

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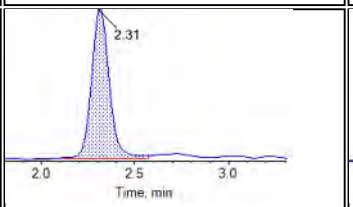

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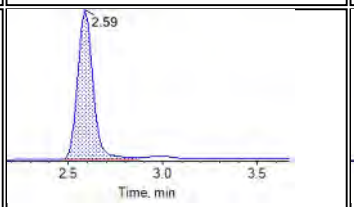

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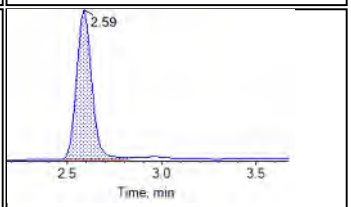

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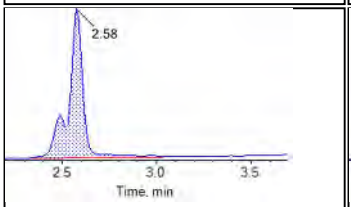

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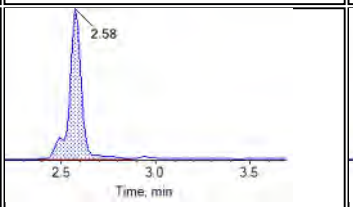

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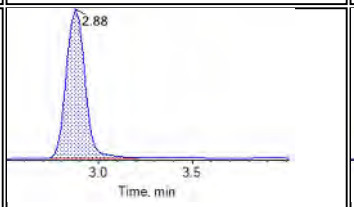

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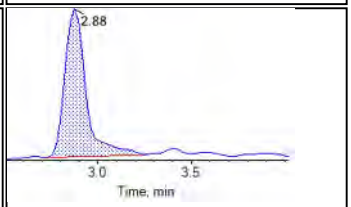

PFDA_2

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Chromatogram Report

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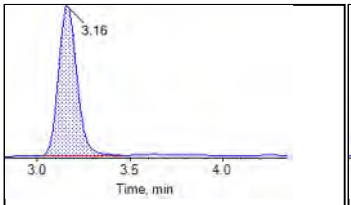

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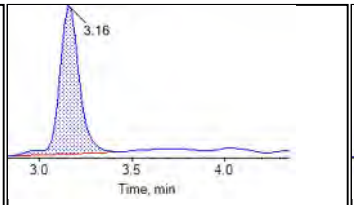

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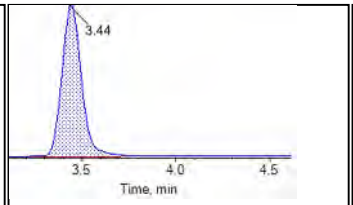

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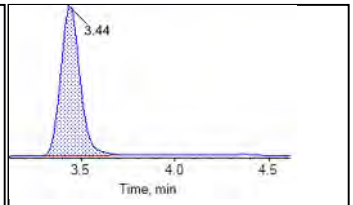

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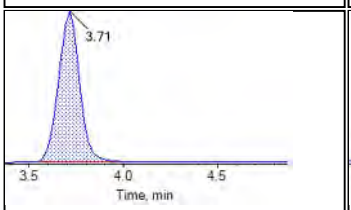

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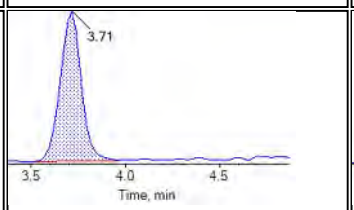

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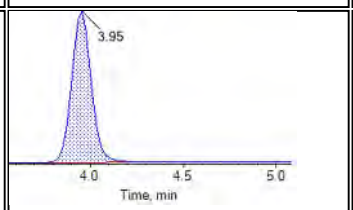

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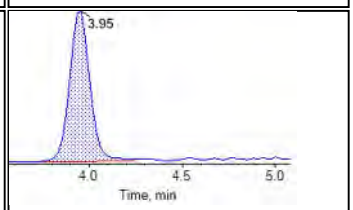

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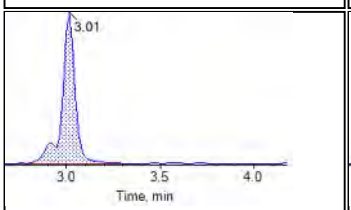

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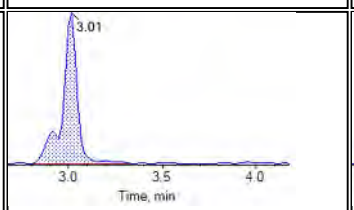

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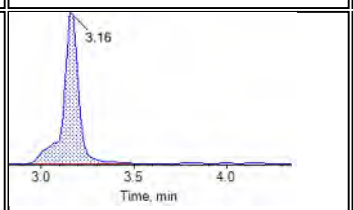

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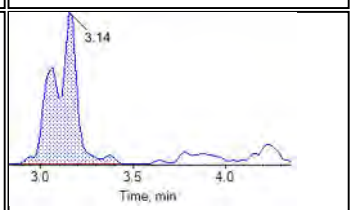

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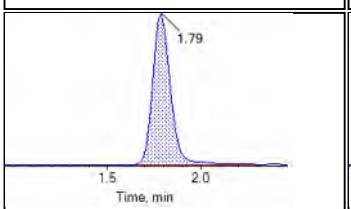

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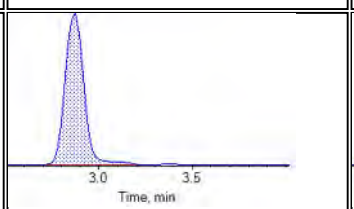

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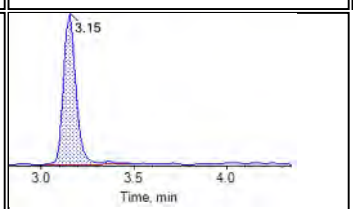
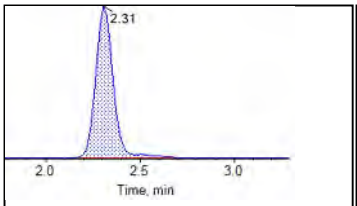


d5-EtFOSAA

Internal Standards:



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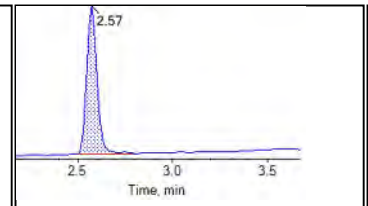

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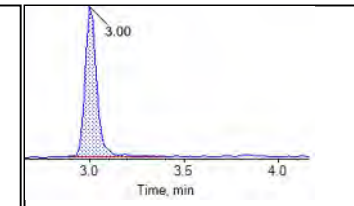

d3-MeFOSAA

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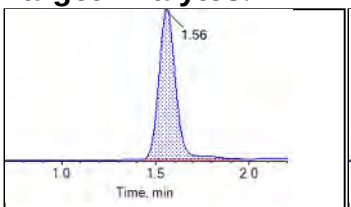
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:55:43 AM

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			

Chromatograms

Target Analytes:



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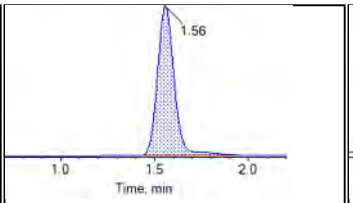

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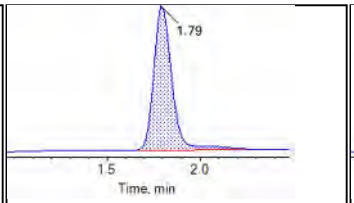

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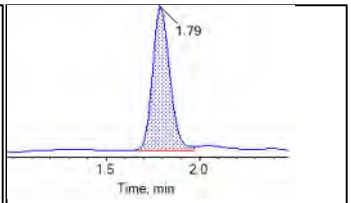

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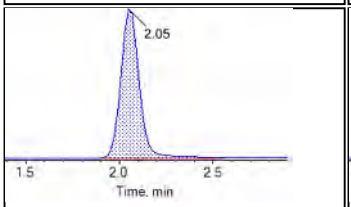

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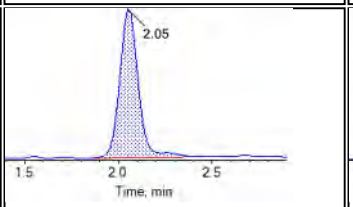

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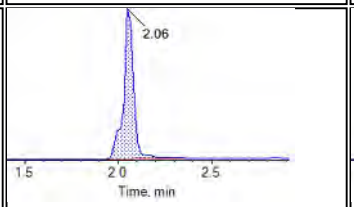

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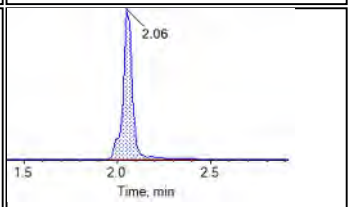

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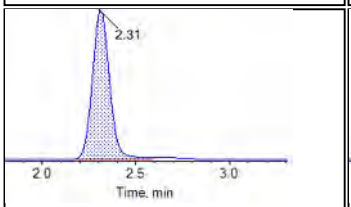

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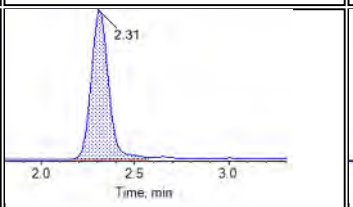

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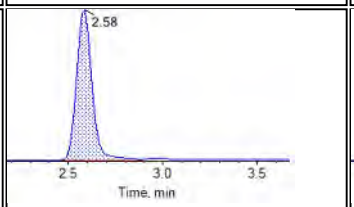
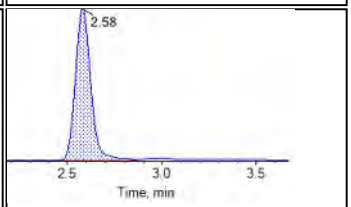


PFNA_1



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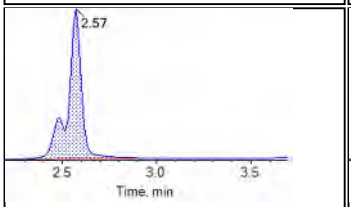

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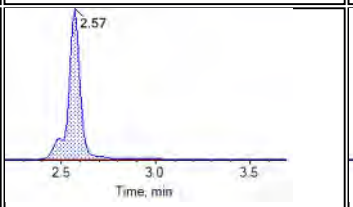

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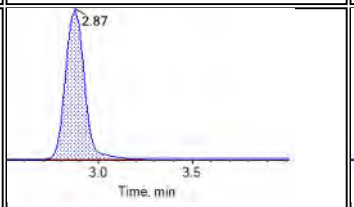

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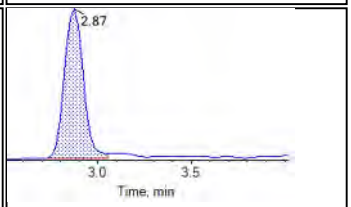

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Chromatogram Report

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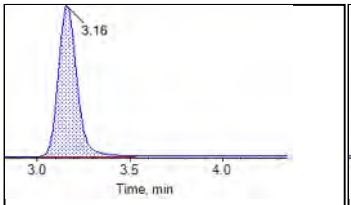

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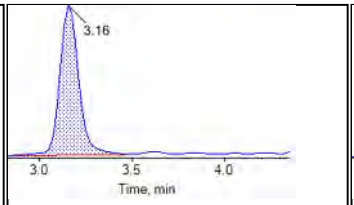

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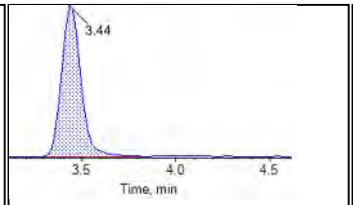

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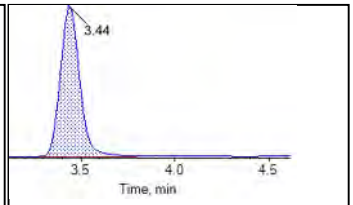

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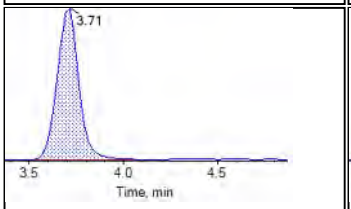

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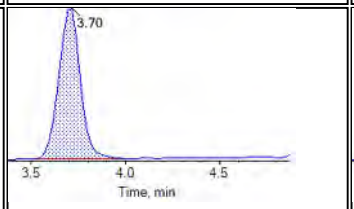

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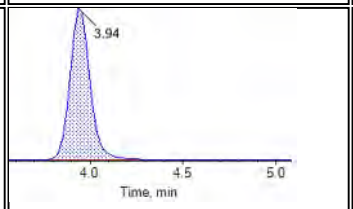

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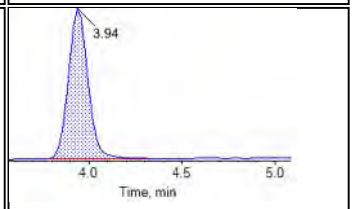

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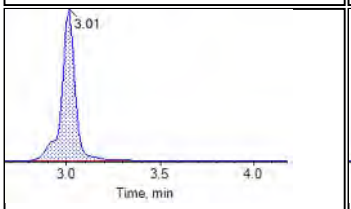

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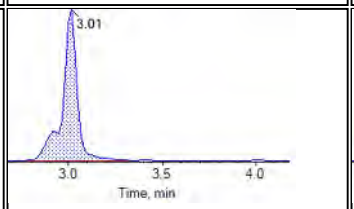

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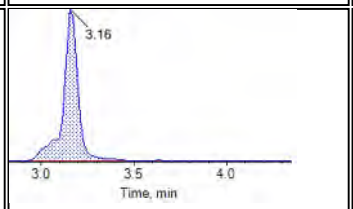

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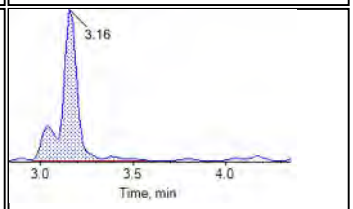

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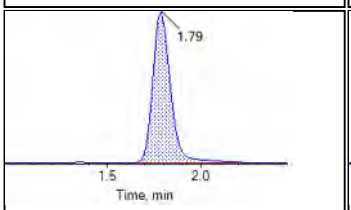
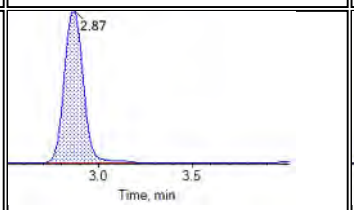


13C2-PFHxA



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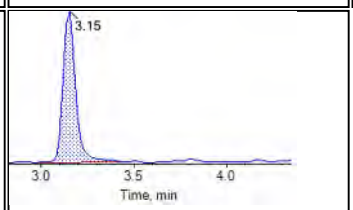

d5-EtFOSAA

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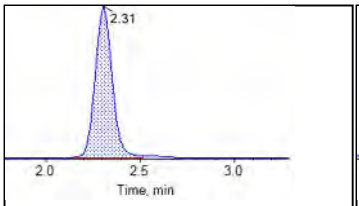

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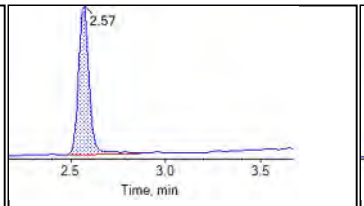

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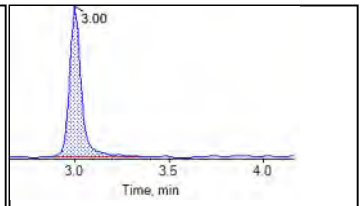

d3-MeFOSAA

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Chromatogram Report

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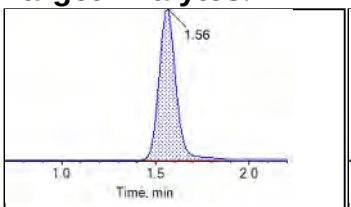
Sample Name	JZ85	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:12:08	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

Target Analytes:



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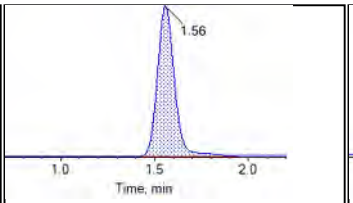

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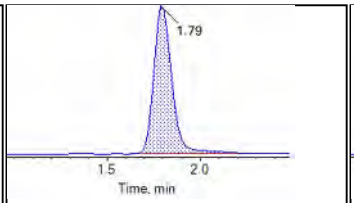

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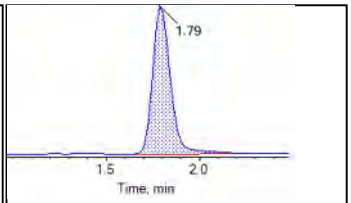

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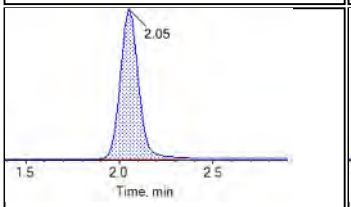

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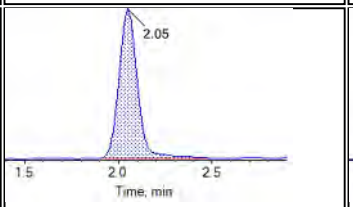

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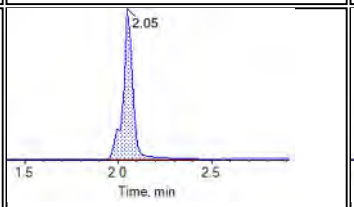

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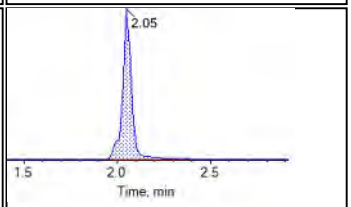

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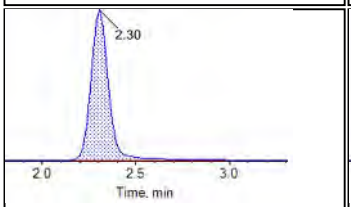

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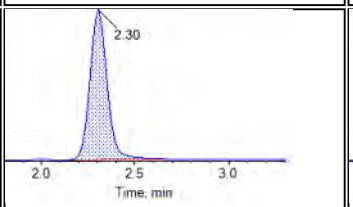

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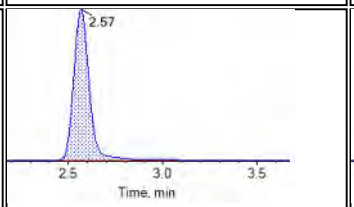

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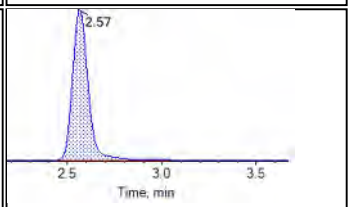

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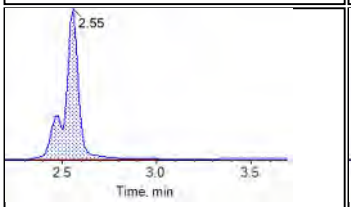

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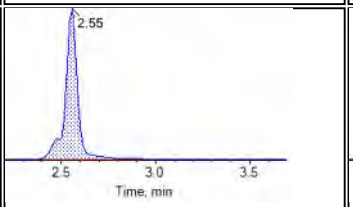

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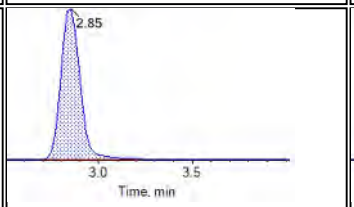

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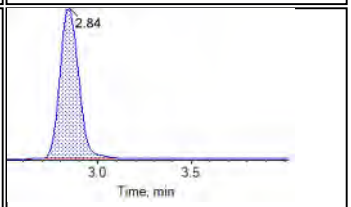

PFDA_2

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Chromatogram Report

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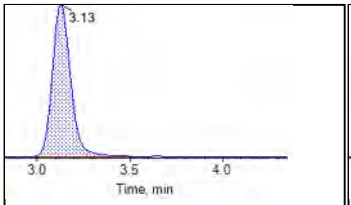

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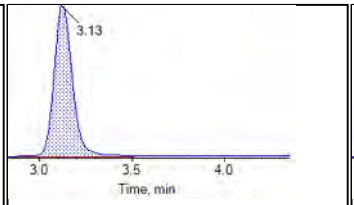

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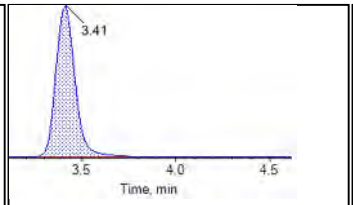

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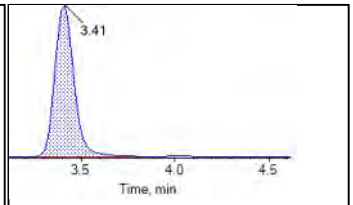

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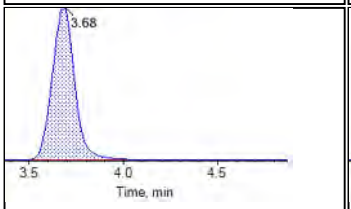

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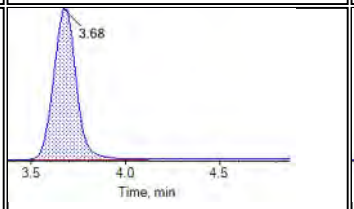

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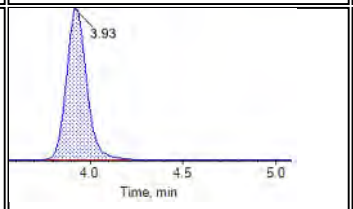

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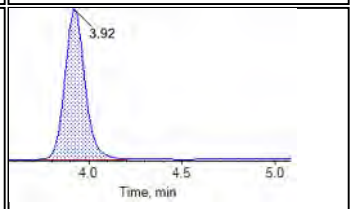

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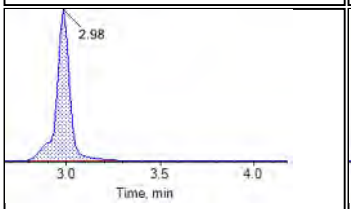

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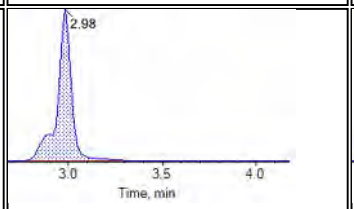

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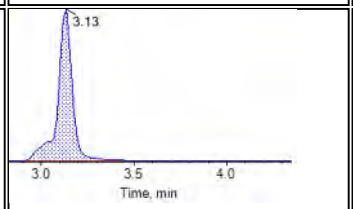

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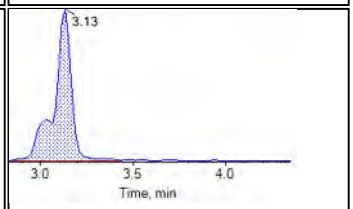

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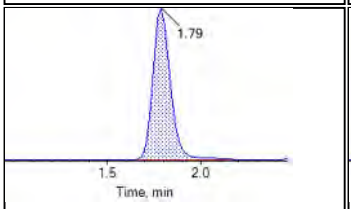
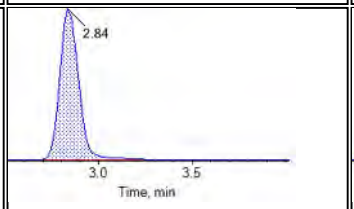


13C2-PFHxA



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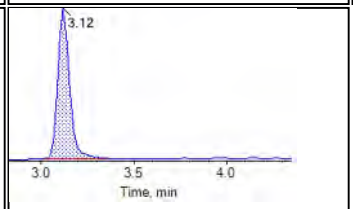
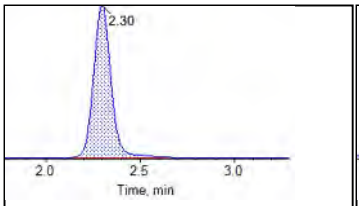


d5-EtFOSAA

Internal Standards:



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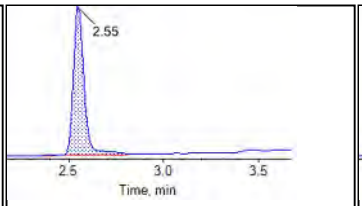
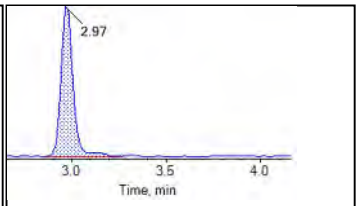


13C4-PFOS



d3-MeFOSAA

BATTELLE

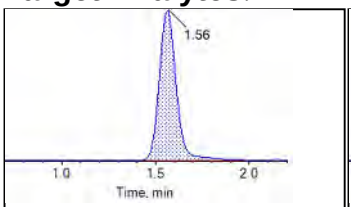
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:55:51 AM

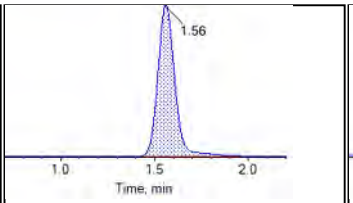
Sample Name	JZ86	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:21:04	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

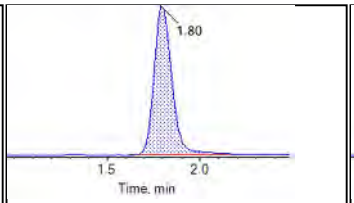
Target Analytes:



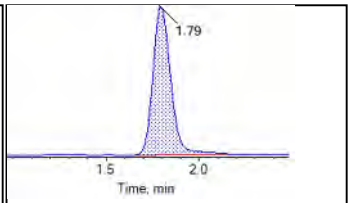
PFBS_1



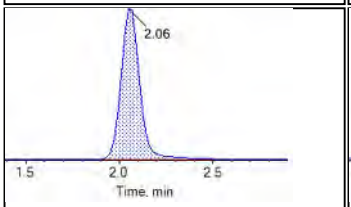
PFBS_2



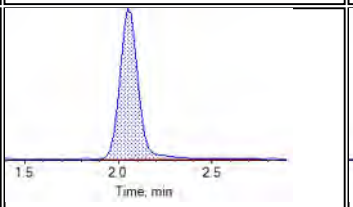
PFHxA_1



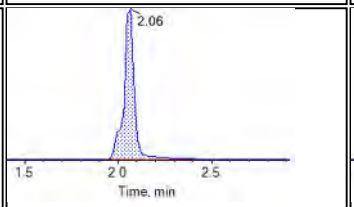
PFHxA_2



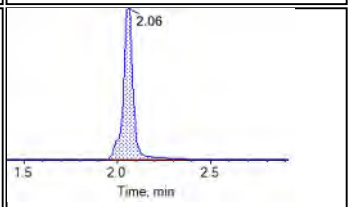
PFHpA_1



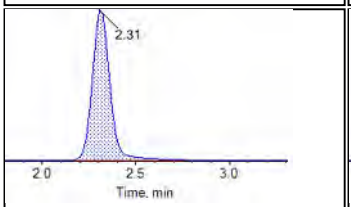
PFHpA_2



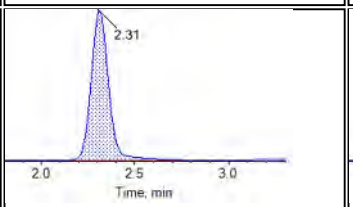
PFHxS_1



PFHxS_2



PFOA_1



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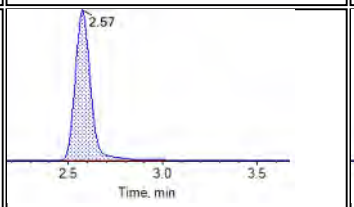

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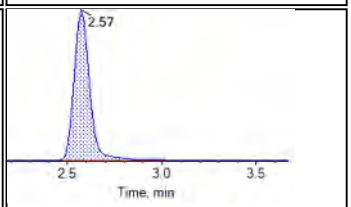

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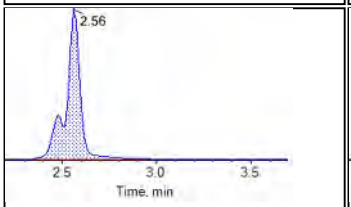
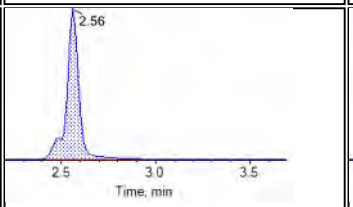
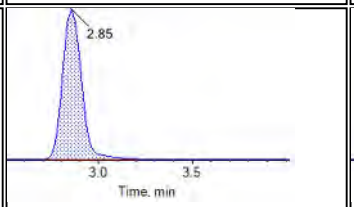


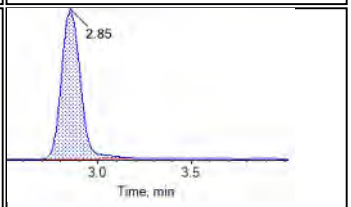
PFOS_1



PFOS_2



PFDA_1



PFDA_2

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Chromatogram Report

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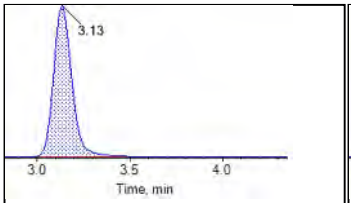
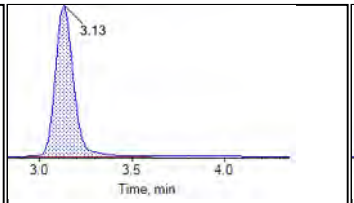
Printed: 23/08/2018 10:55:51 AM



PFUnA_1



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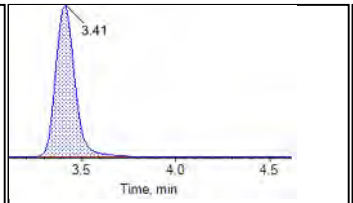
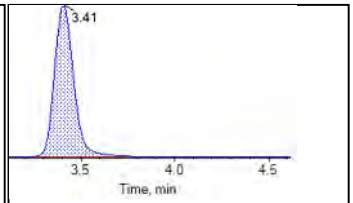


PFDoA_1



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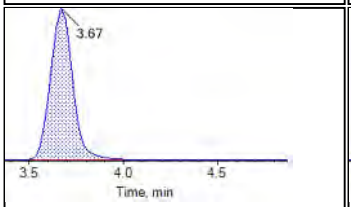
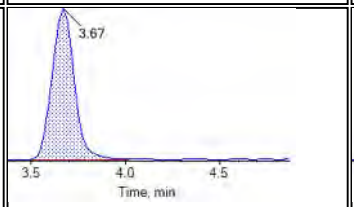


PFTrDA_1



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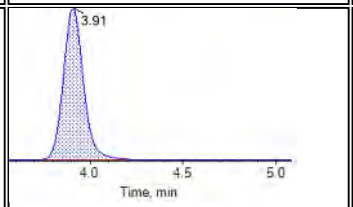

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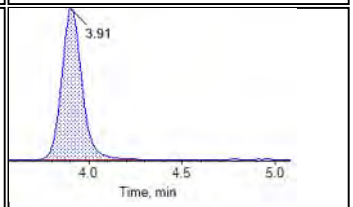

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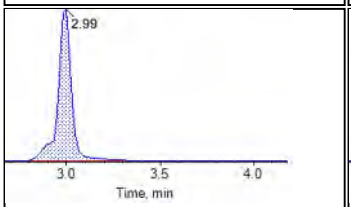
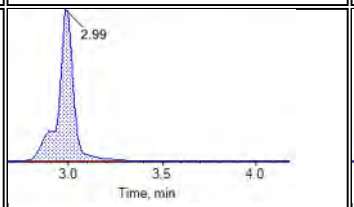


NMeFOSAA_1



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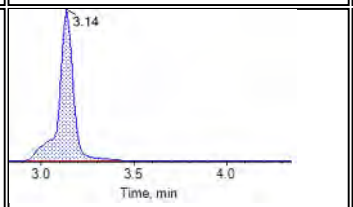

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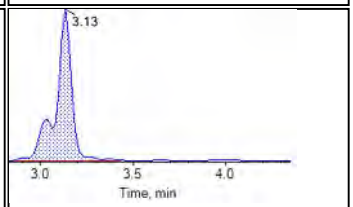

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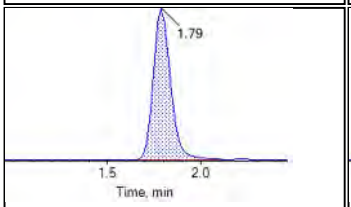
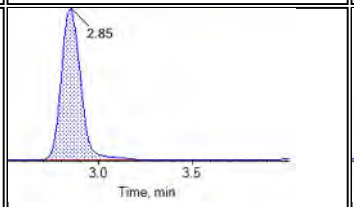
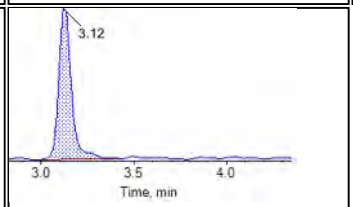


13C2-PFHxA

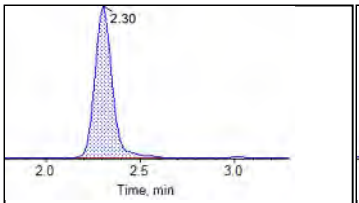


13C2-PFDA

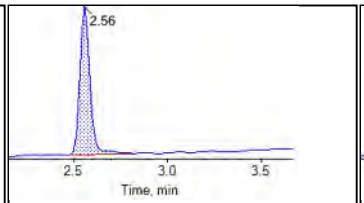


d5-EtFOSAA

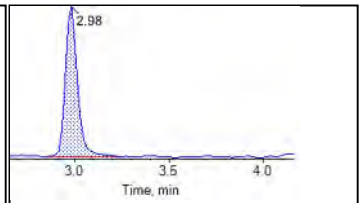
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

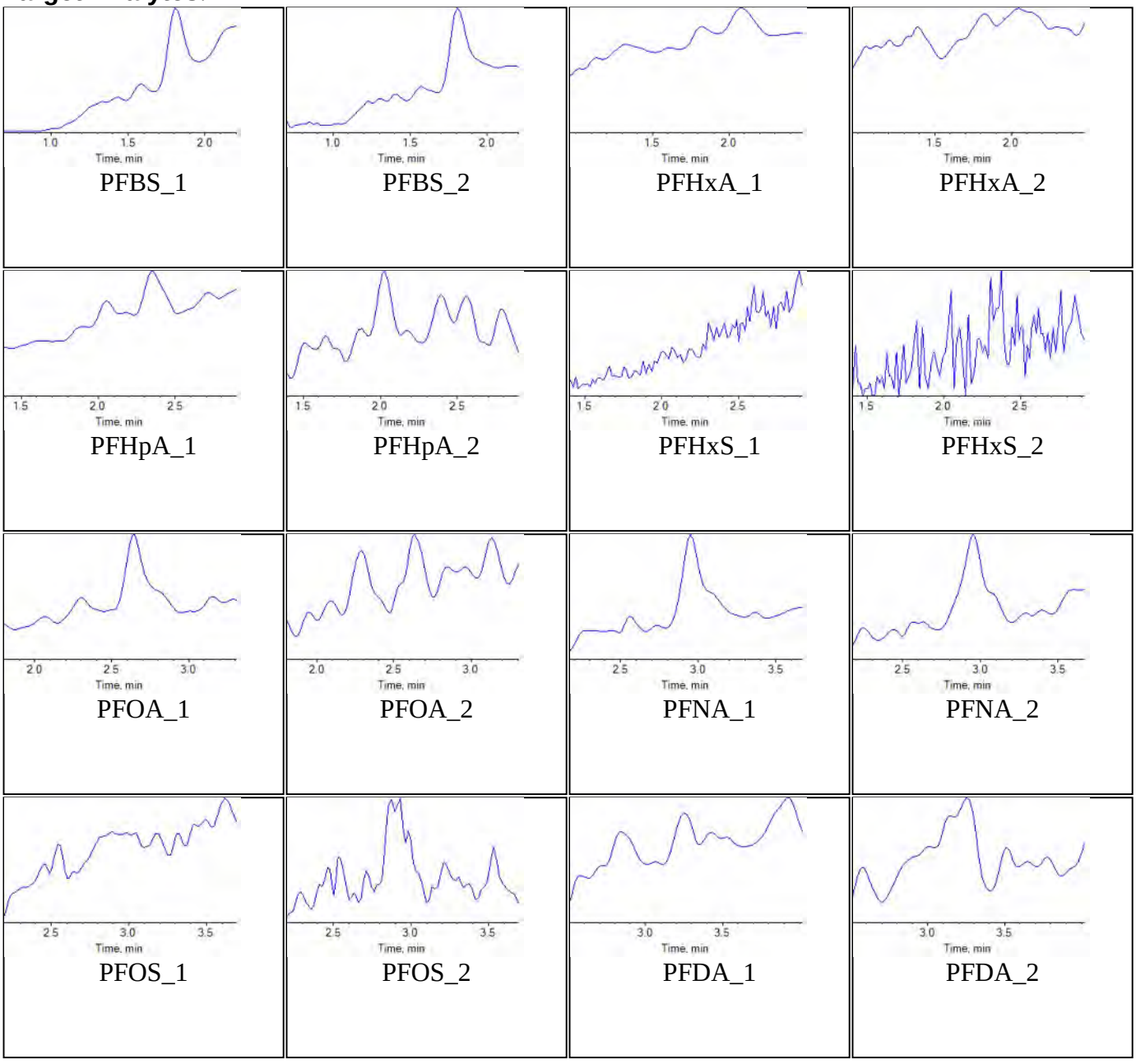
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:55:56 AM

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

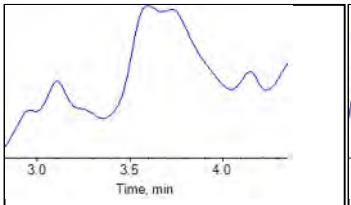
Target Analytes:



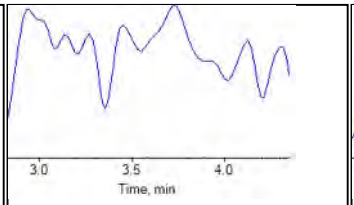
BATTELLE

Chromatogram Report

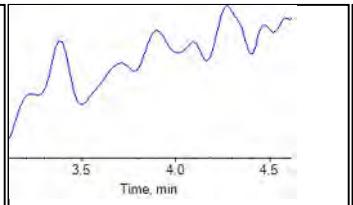
Created with Analyst Reporter
Printed: 23/08/2018 10:55:56 AM



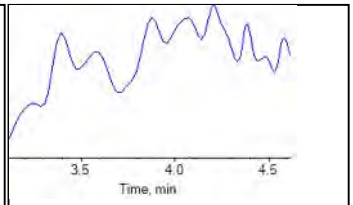
PFUnA_1



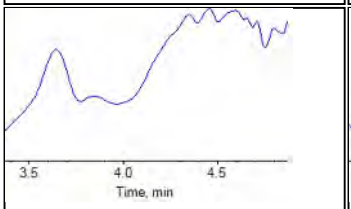
PFUnA_2



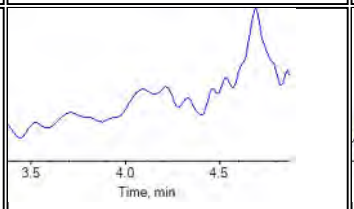
PFDoA_1



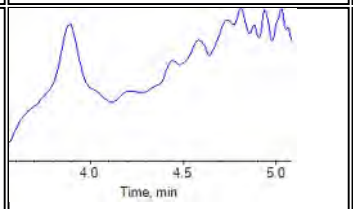
PFDoA_2



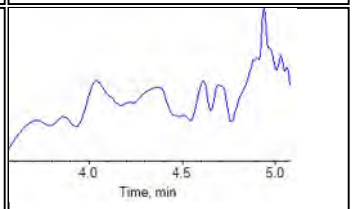
PFTrDA_1



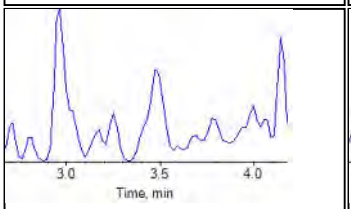
PFTrDA_2



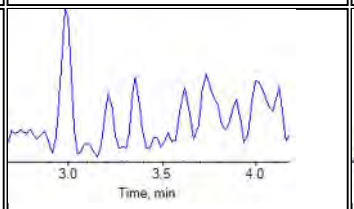
PFTeDA_1



PFTeDA_2



NMeFOSAA_1



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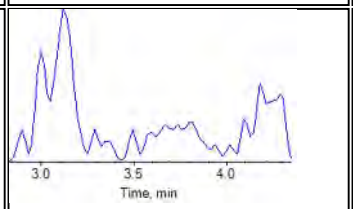
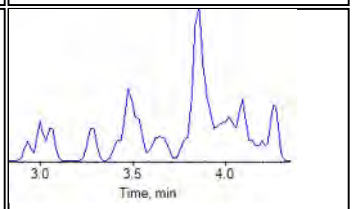
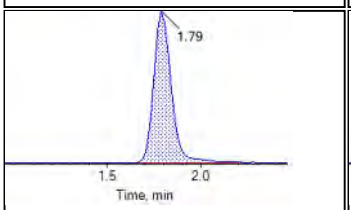


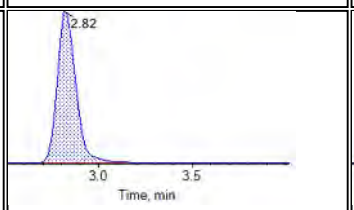
NEtFOSAA_1



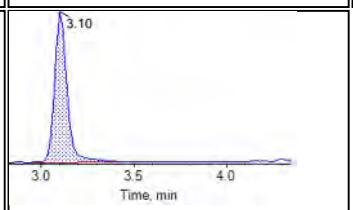
NEtFOSAA_2



13C2-PFHxA

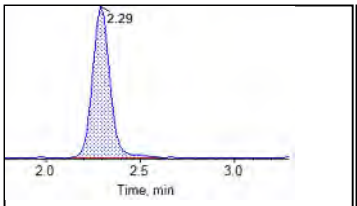


13C2-PFDA

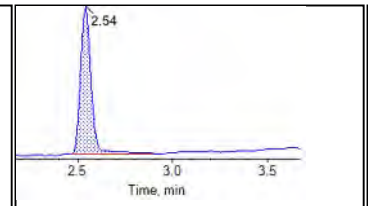


d5-EtFOSAA

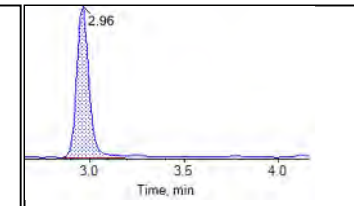
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

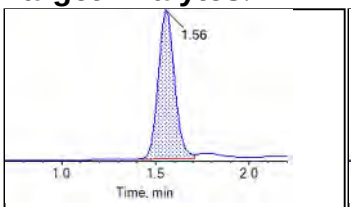
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:56:00 AM

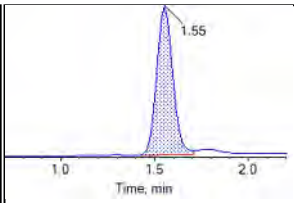
Sample Name	JZ77 ICC	**Injection Vial**	12
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:38:57	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

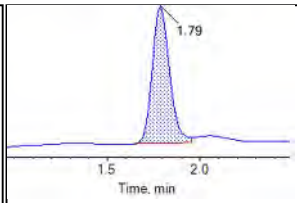
Target Analytes:



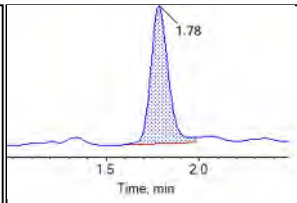
PFBS_1



PFBS_2



PFHxA_1



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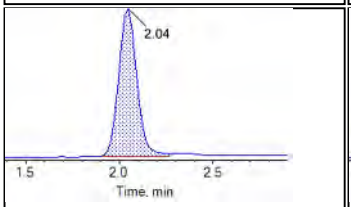

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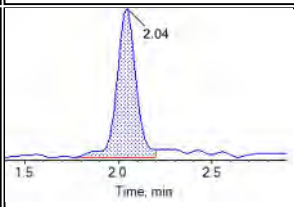

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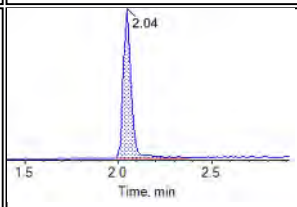

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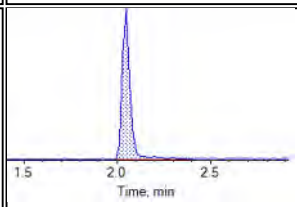
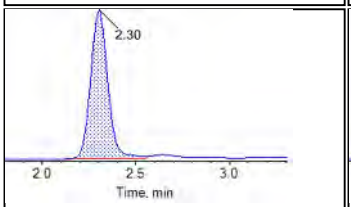
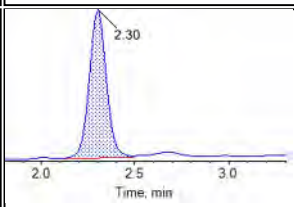


PFHxS_2



PFOA_1



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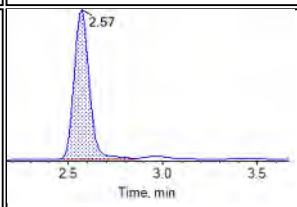

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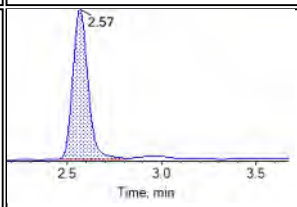

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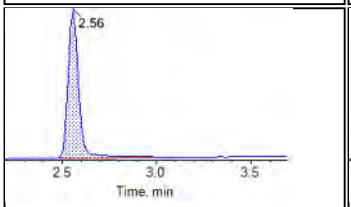
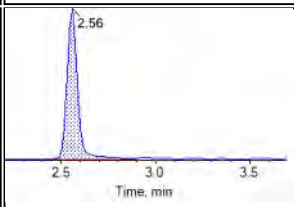


PFOS_1



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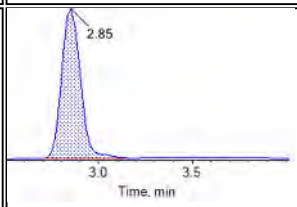
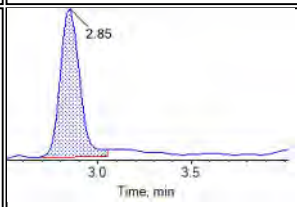


PFDA_1



PFDA_2

BATTELLE

Chromatogram Report

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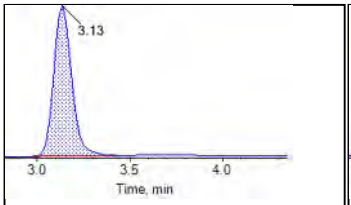
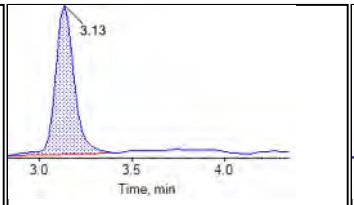
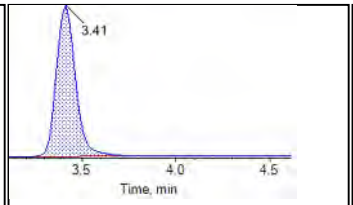
Printed: 23/08/2018 10:56:00 AM



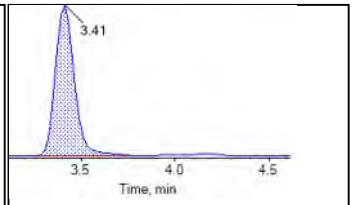
PFUnA_1



PFUnA_2



PFDoA_1



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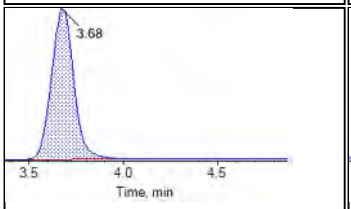
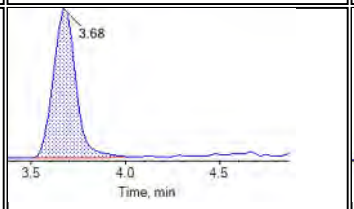


PFTrDA_1



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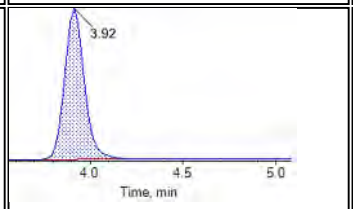

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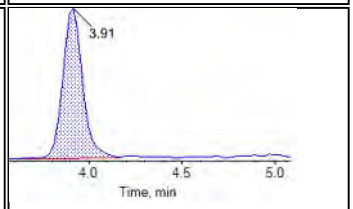

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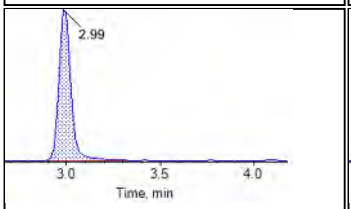
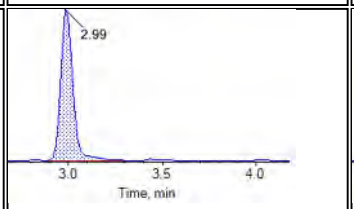
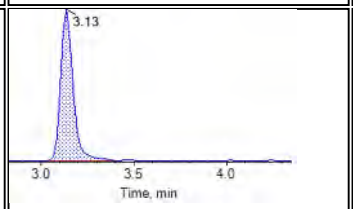


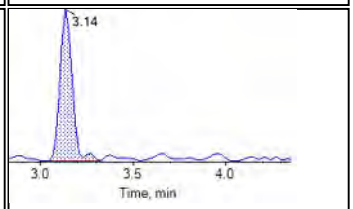
NMeFOSAA_1



NMeFOSAA_2



NEtFOSAA_1



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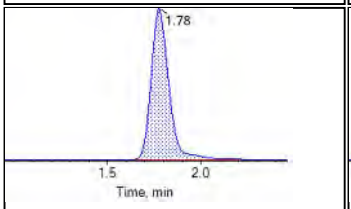
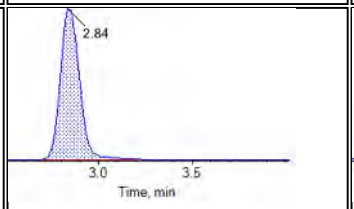
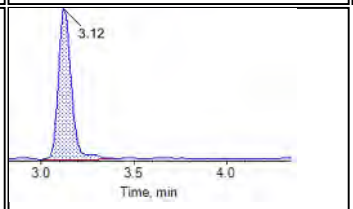


13C2-PFHxA

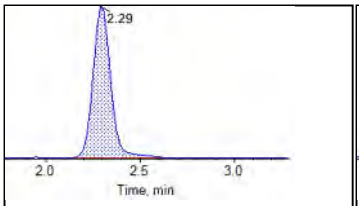


13C2-PFDA

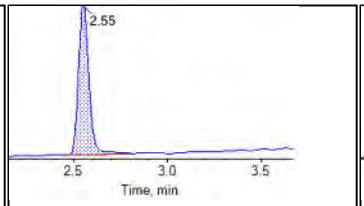


d5-EtFOSAA

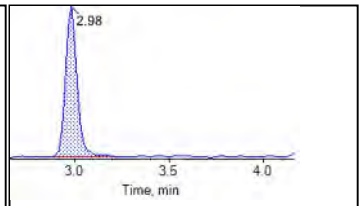
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

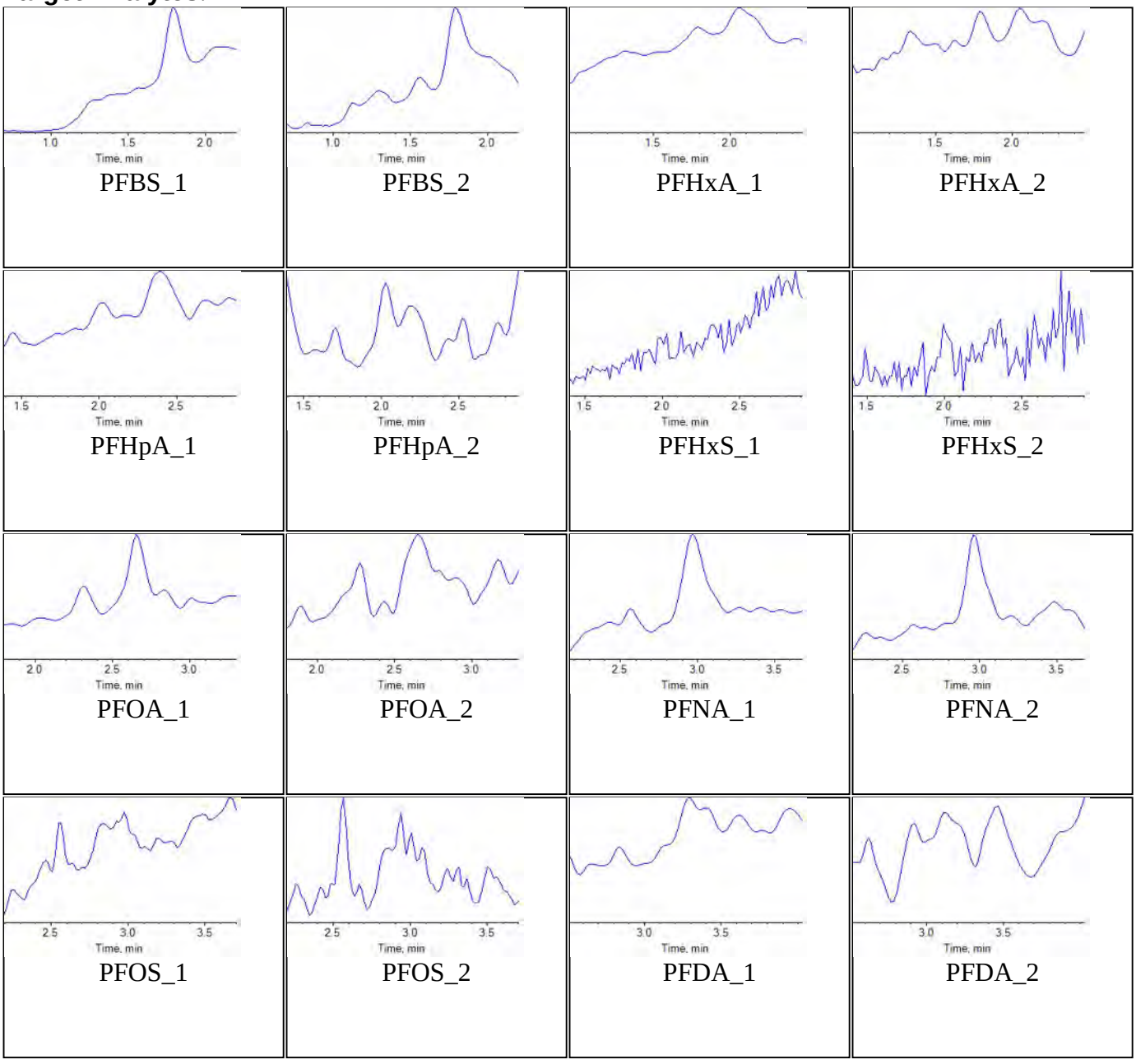
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:56:16 AM

Sample Name	CR631PB-FS(0)	**Injection Vial**	14
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:56:50	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

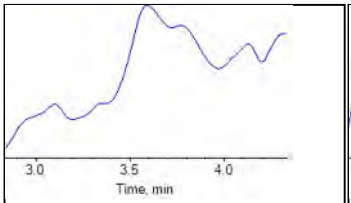
Target Analytes:



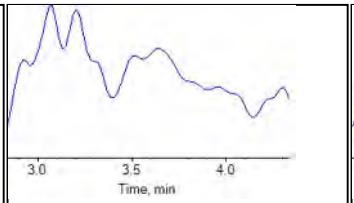
BATTELLE

Chromatogram Report

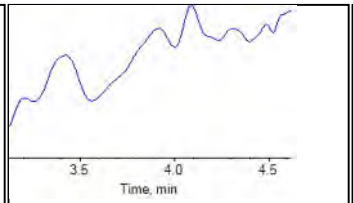
Created with Analyst Reporter
Printed: 23/08/2018 10:56:16 AM



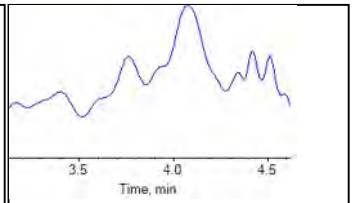
PFUnA_1



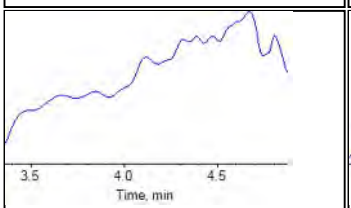
PFUnA_2



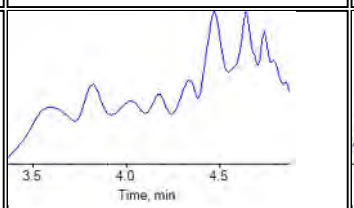
PFDoA_1



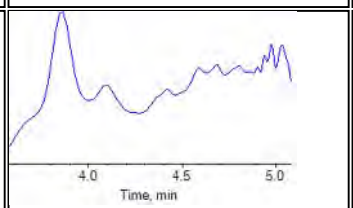
PFDoA_2



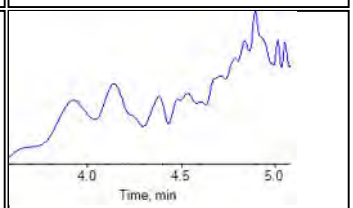
PFTrDA_1



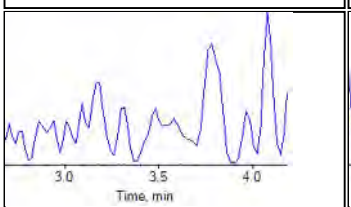
PFTrDA_2



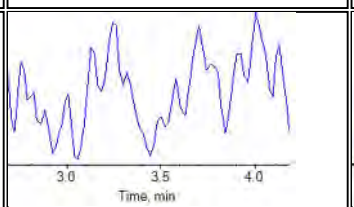
PFTeDA_1



PFTeDA_2



NMeFOSAA_1



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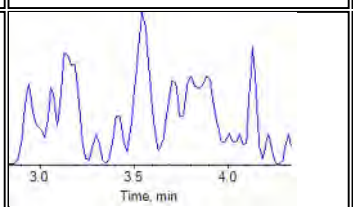
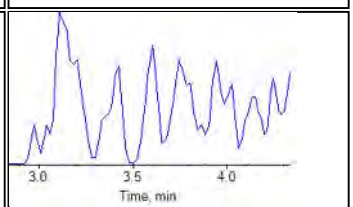
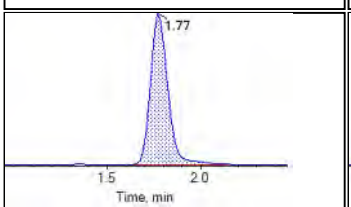


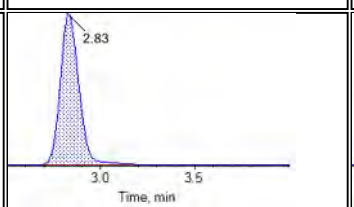
NEtFOSAA_1



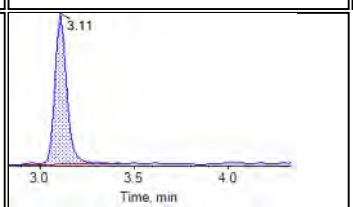
NEtFOSAA_2



13C2-PFHxA

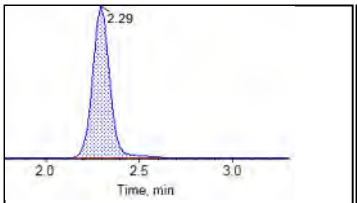


13C2-PFDA

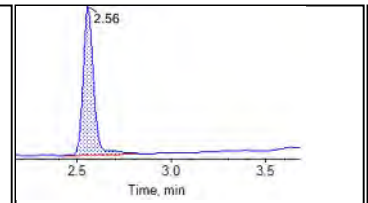


d5-EtFOSAA

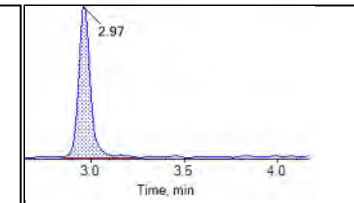
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

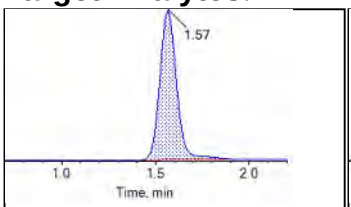
Chromatogram Report

Created with Analyst Reporter
Printed: 23/08/2018 10:56:22 AM

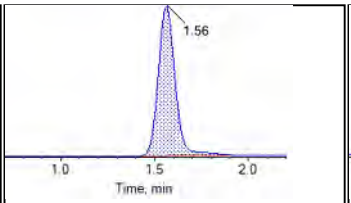
Sample Name	CR632LCS-FS(0)	**Injection Vial**	15
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:05:47	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

Target Analytes:



PFBS_1



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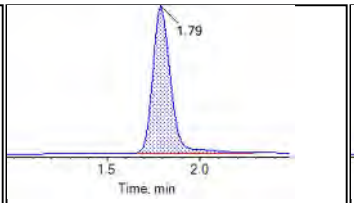

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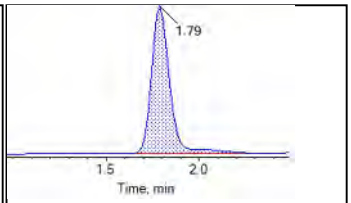

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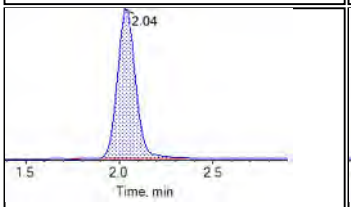

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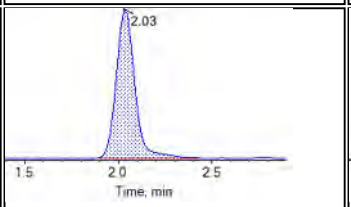

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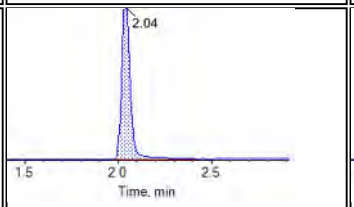

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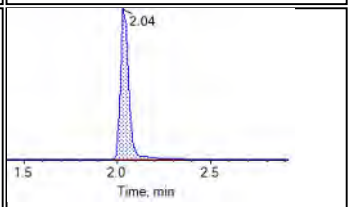

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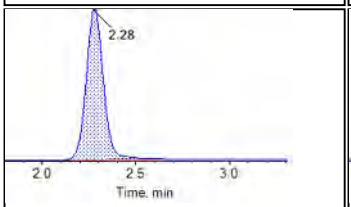

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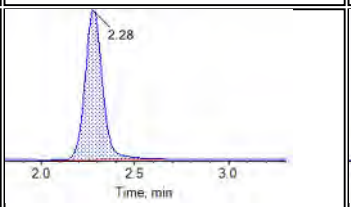

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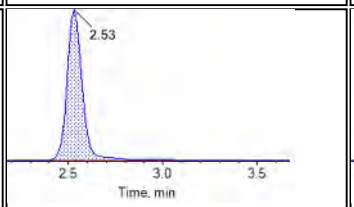

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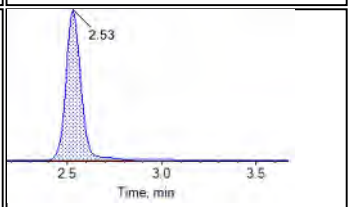

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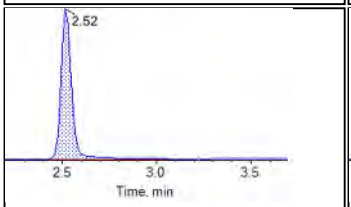

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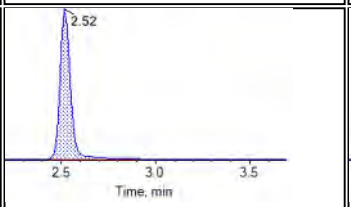

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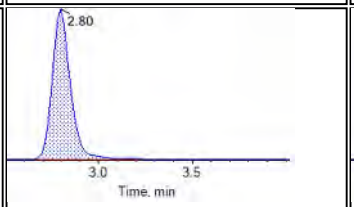

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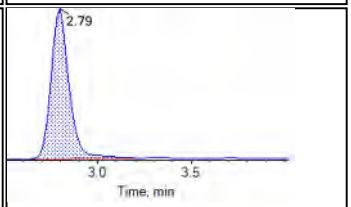

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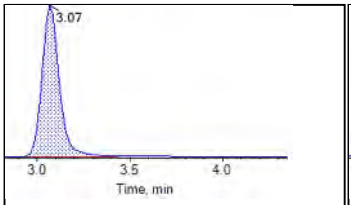

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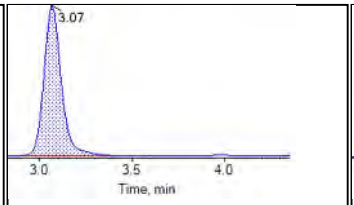

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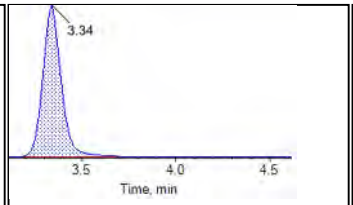

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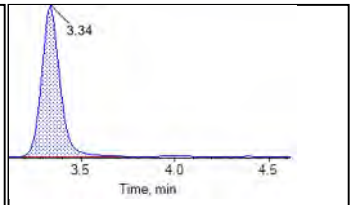

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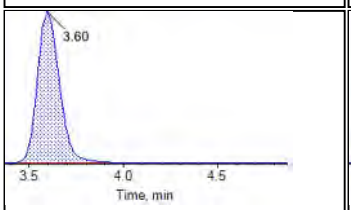

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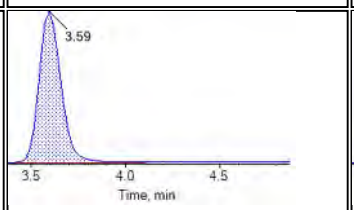

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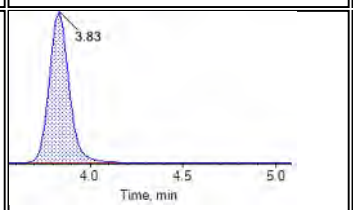

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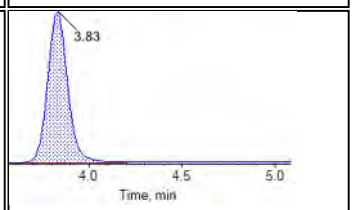

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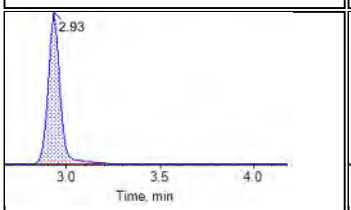

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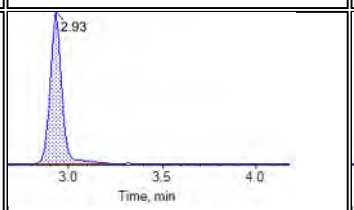

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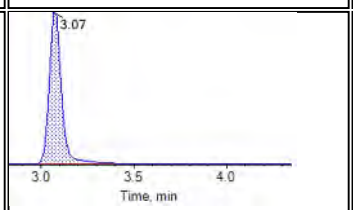

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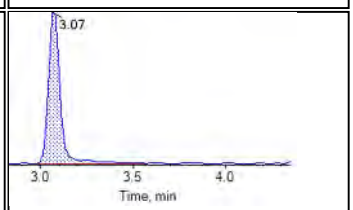

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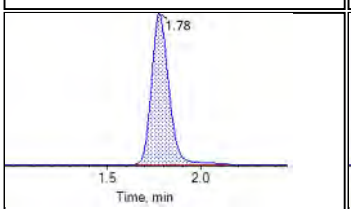

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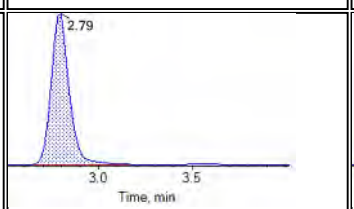

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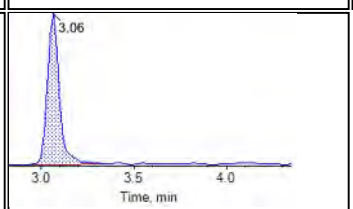

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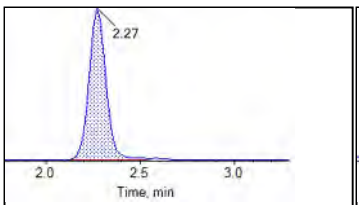

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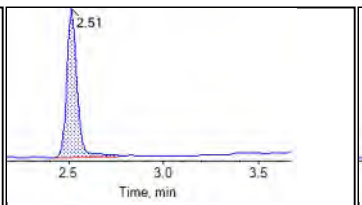

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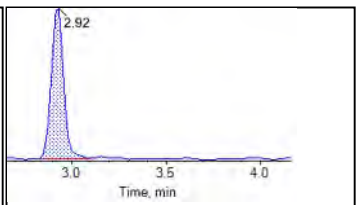

d3-MeFOSAA

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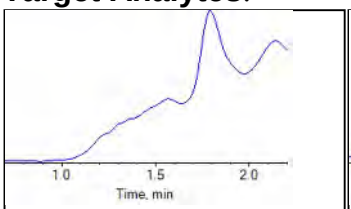
Sample Name	J7448-FS(0)	**Injection Vial**	16
Sample ID	JAX-RES-08152018-1015-34-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:14:44	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

Target Analytes:



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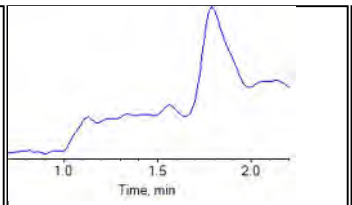

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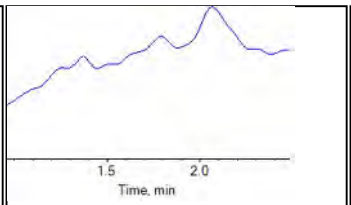

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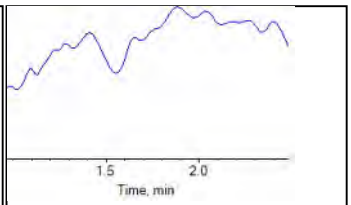

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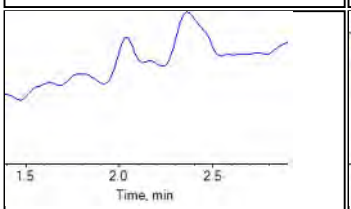

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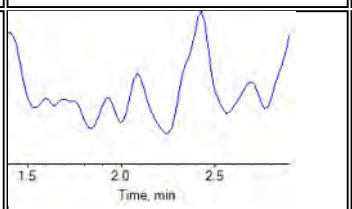

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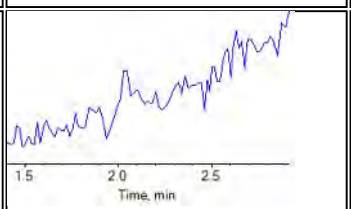

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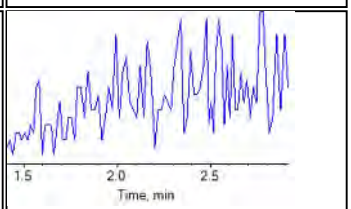

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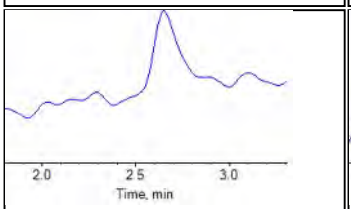

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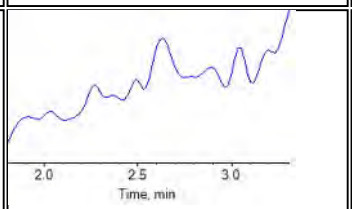

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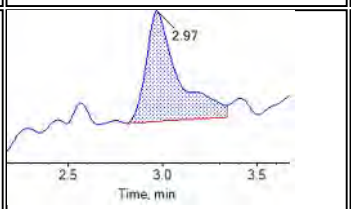

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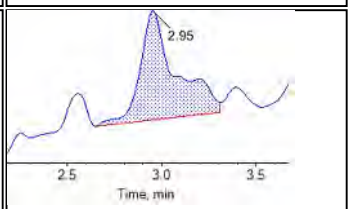

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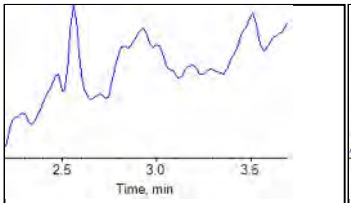

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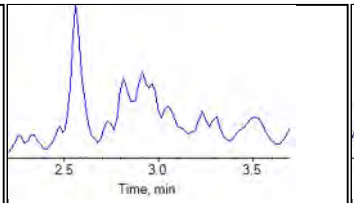

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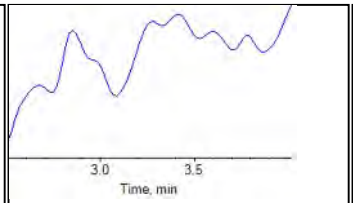

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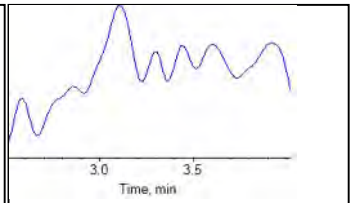

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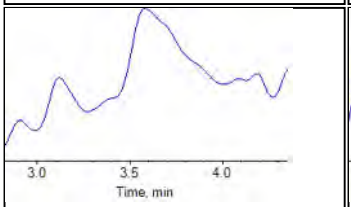

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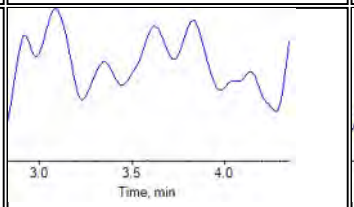

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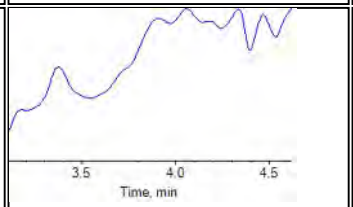

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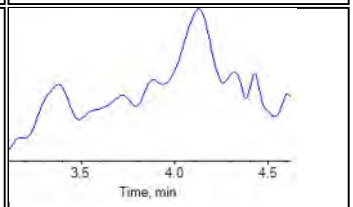

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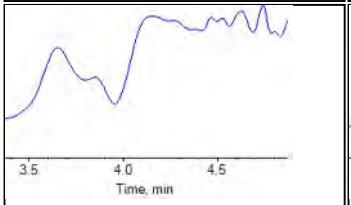

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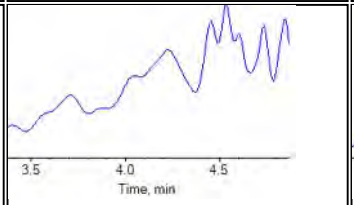

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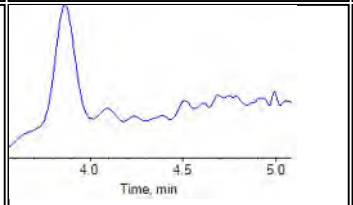

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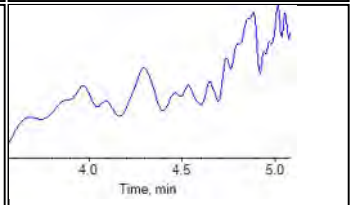

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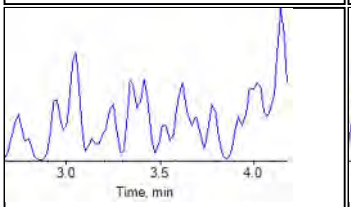

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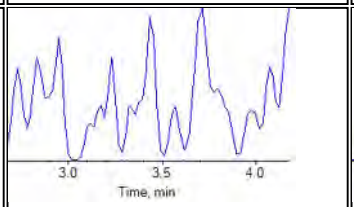

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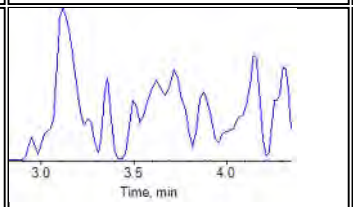

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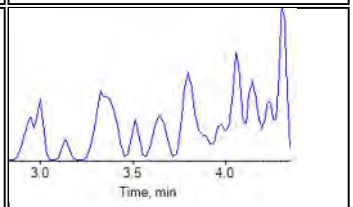

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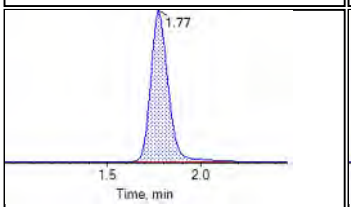
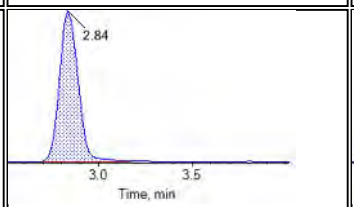
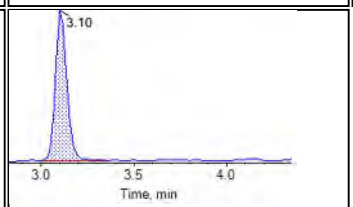


13C2-PFHxA



13C2-PFDA



d5-EtFOSAA

Internal Standards:

BATTELLE

Chromatogram Report

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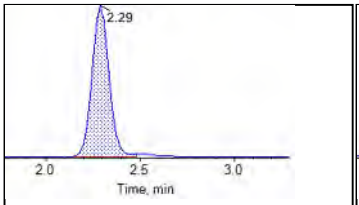

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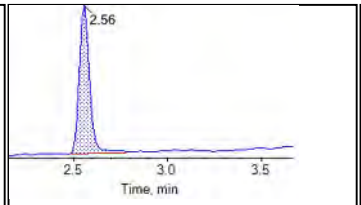

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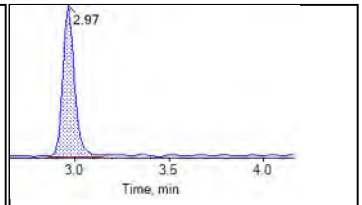

d3-MeFOSAA

BATTELLE

Chromatogram Report

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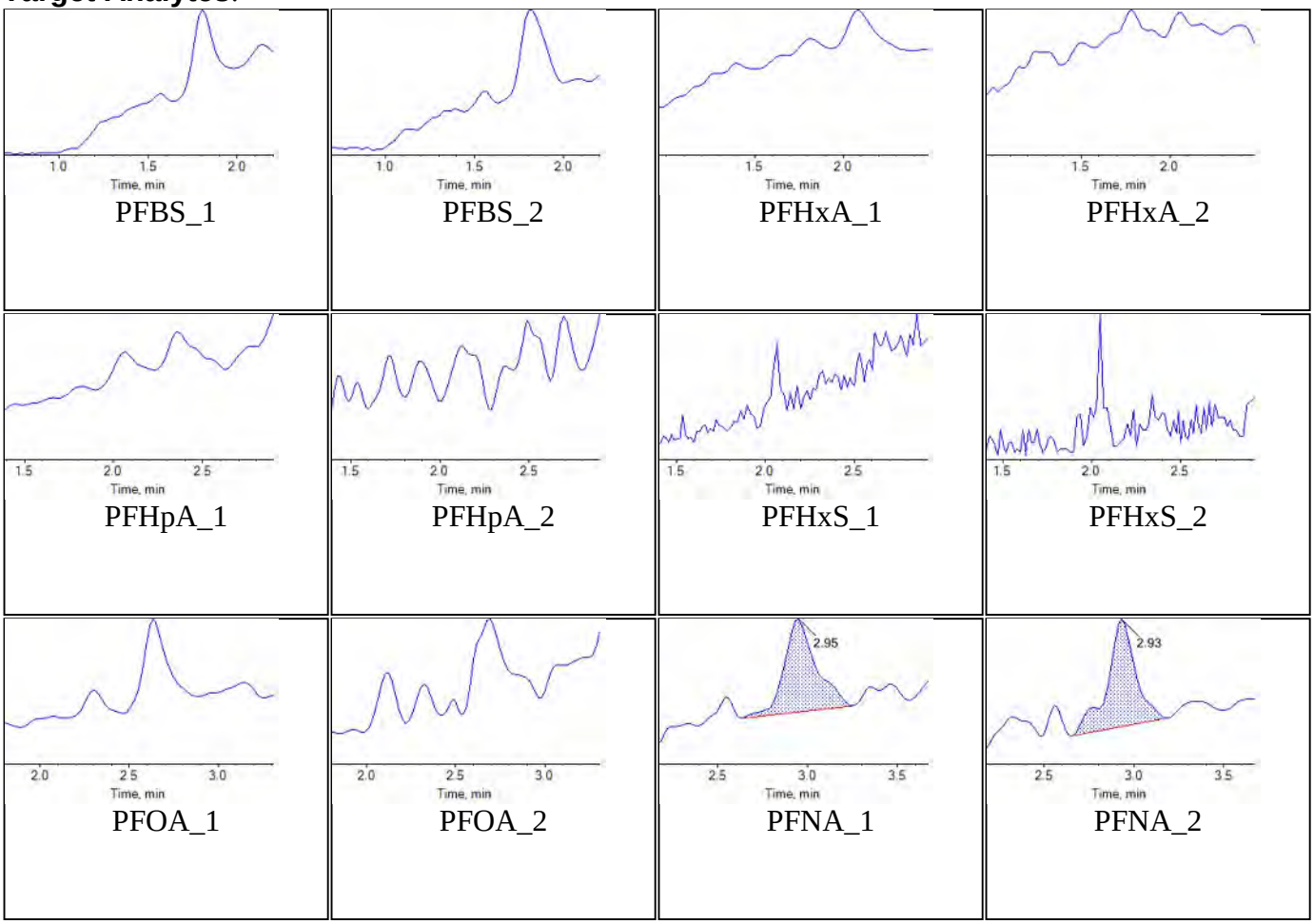
Printed: 23/08/2018 10:56:33 AM

Sample Name	J7450-FS(0)	**Injection Vial**	17
Sample ID	JAX-RES-08152018-1045-33-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:23:42	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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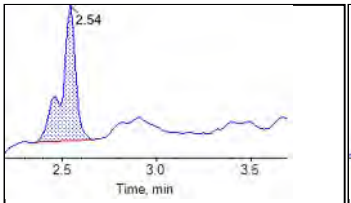

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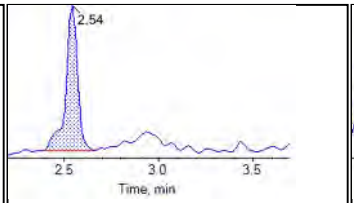
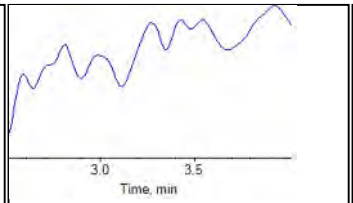


PFOS_2



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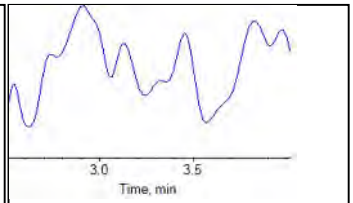

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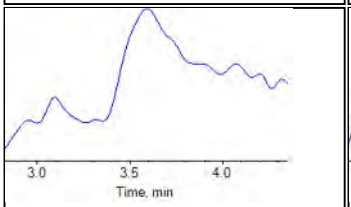

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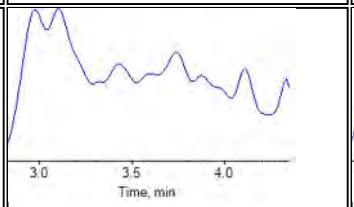

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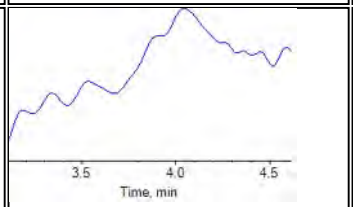

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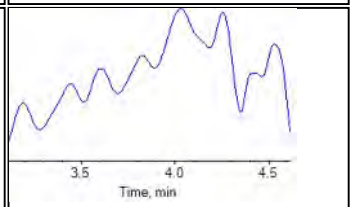

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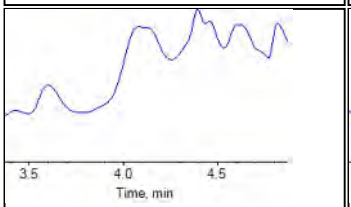

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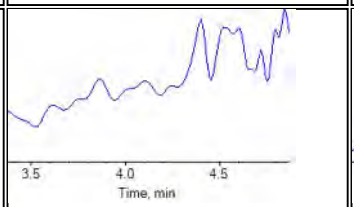

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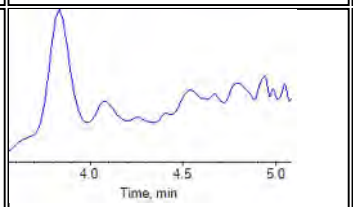

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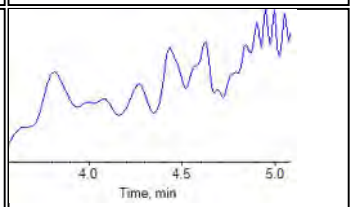

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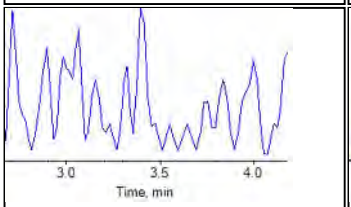

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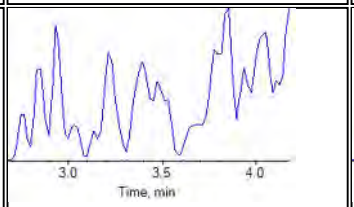

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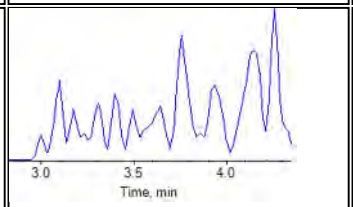

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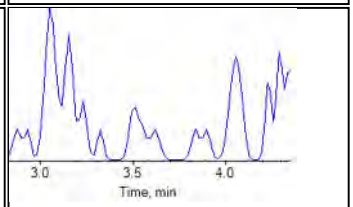

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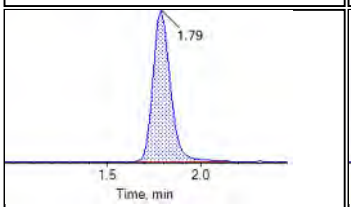
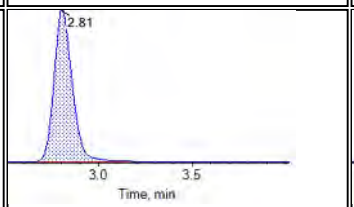


13C2-PFHxA



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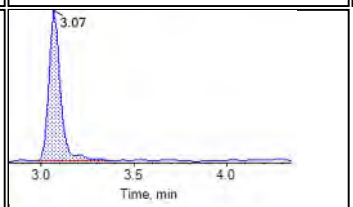

d5-EtFOSAA

Internal Standards:

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Chromatogram Report

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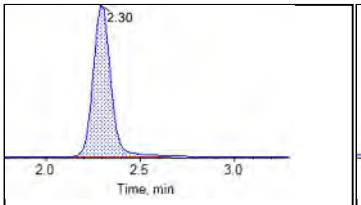

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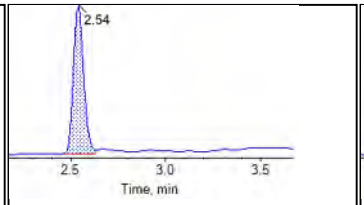

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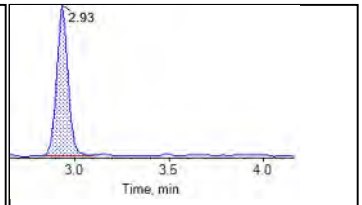

d3-MeFOSAA

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Chromatogram Report

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Printed: 23/08/2018 10:56:38 AM

Sample Name	J7452-FS(0)	**Injection Vial**	18
Sample ID	JAX-RES-08152018-1130-15-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:32:38	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

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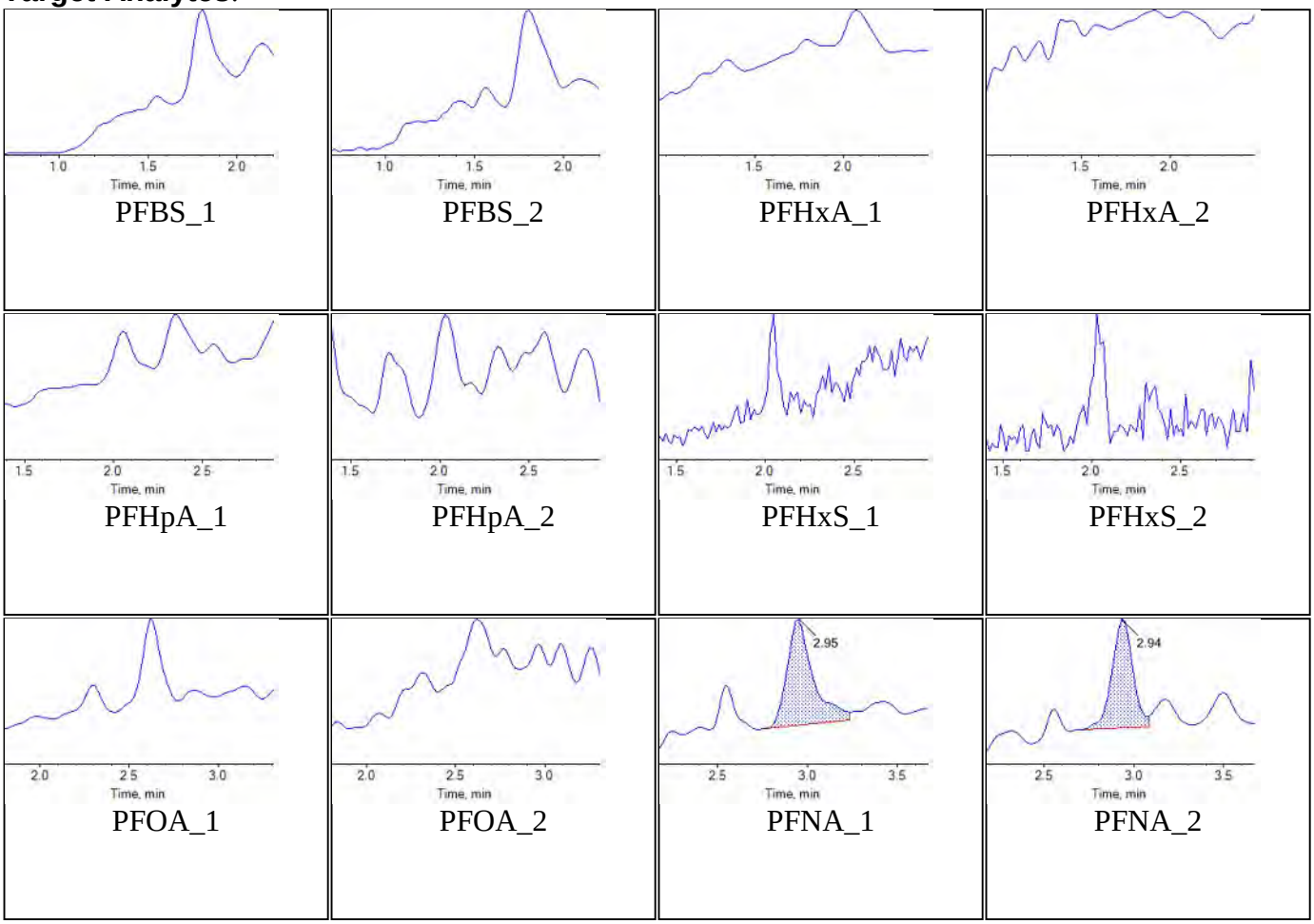

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Chromatogram Report

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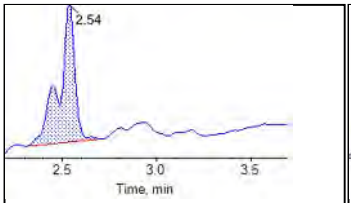
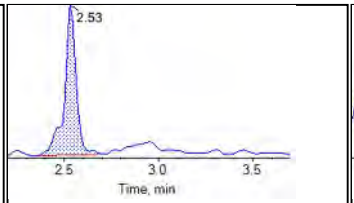


PFOS_1



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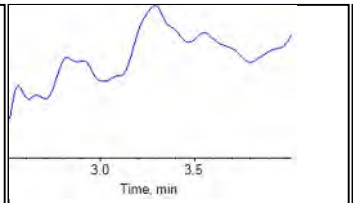

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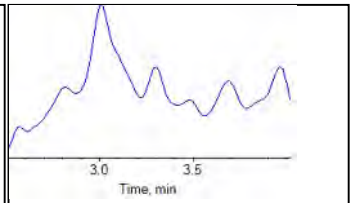

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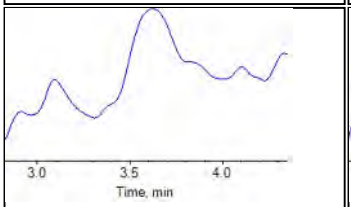

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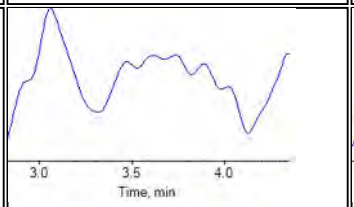
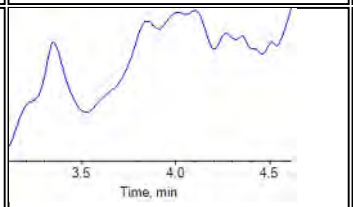


PFUnA_2



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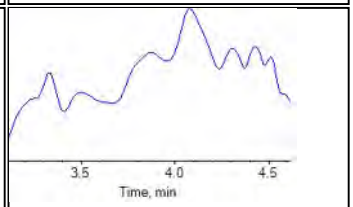

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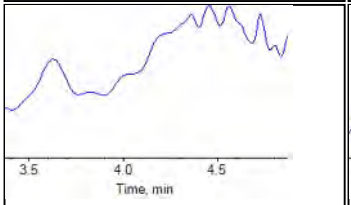

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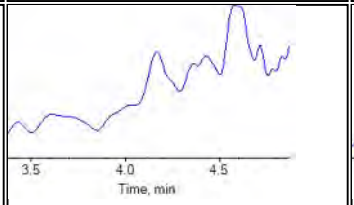

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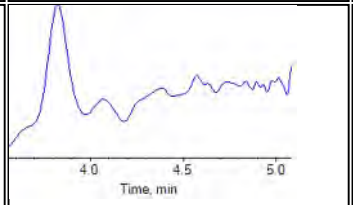

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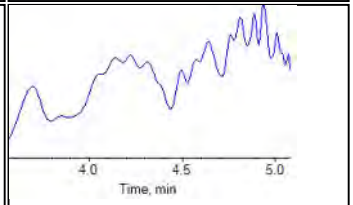

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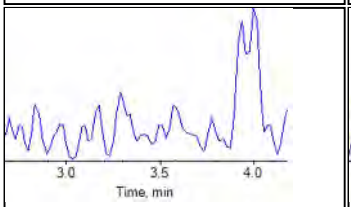

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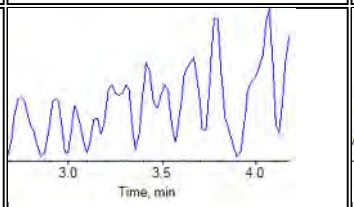

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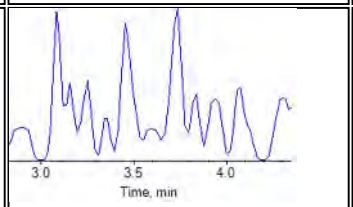

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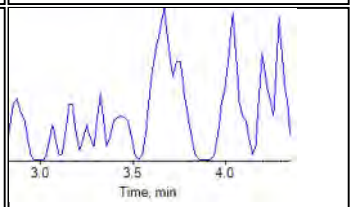

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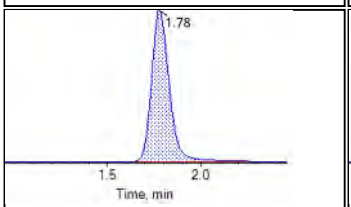
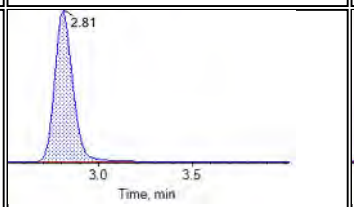


13C2-PFHxA



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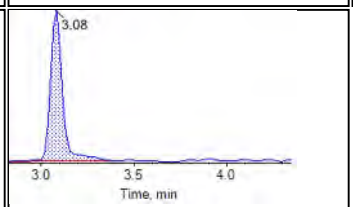

d5-EtFOSAA

Internal Standards:

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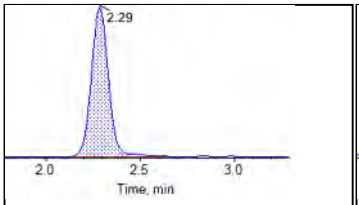

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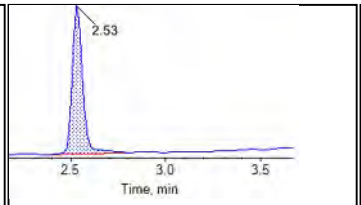
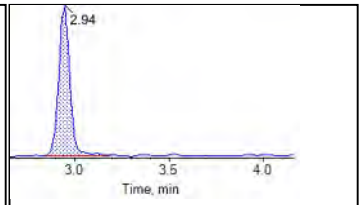


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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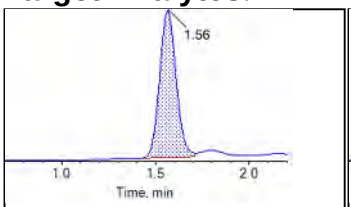
Sample Name	JZ82 CCV	**Injection Vial**	19
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:41:36	**Data File**	08222018_DW.wiff
Acquisition Method	5-0371.dam	**Result Table**	08232018_DW
Sample Comment			

Chromatograms

Target Analytes:



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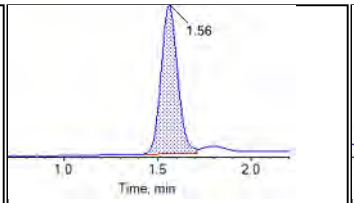

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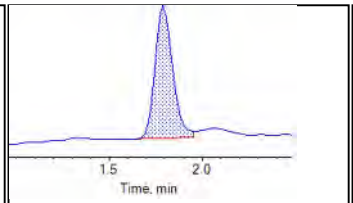

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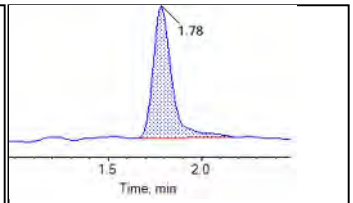

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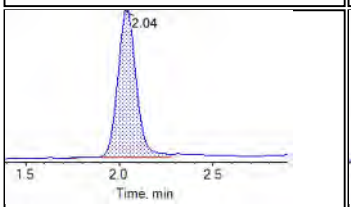

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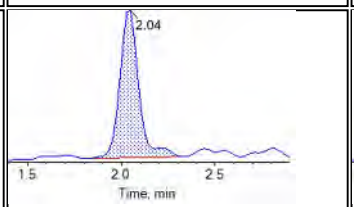

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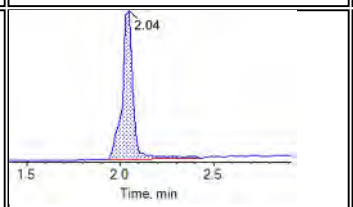

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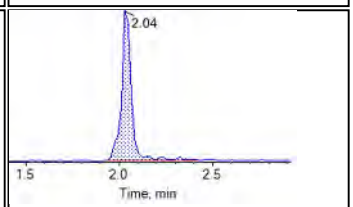

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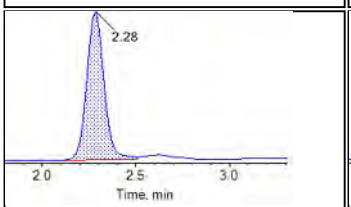

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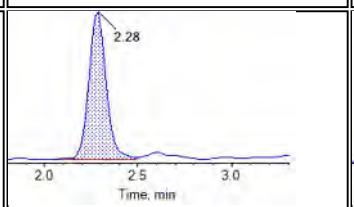

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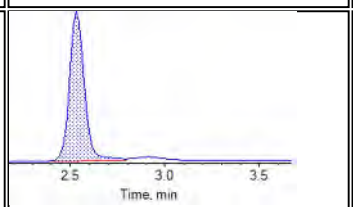

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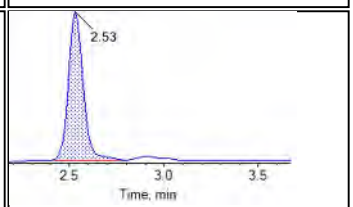

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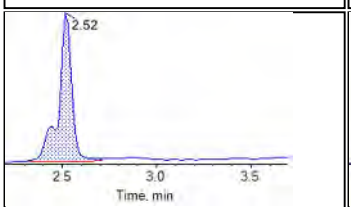

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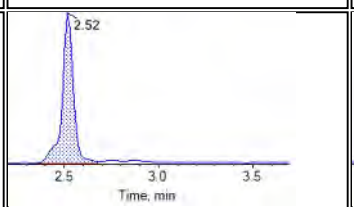

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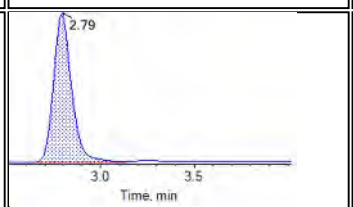

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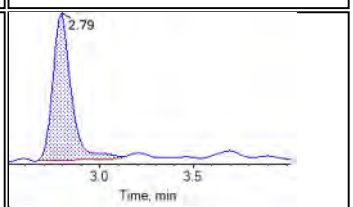

PFDA_2

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Chromatogram Report

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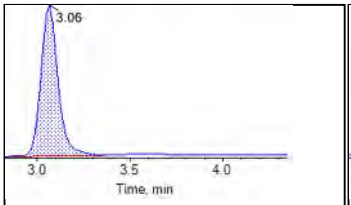

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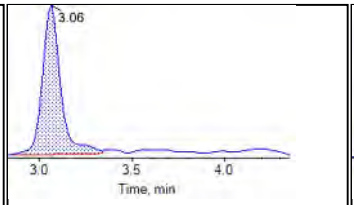

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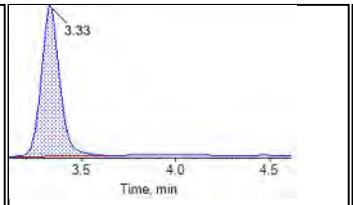

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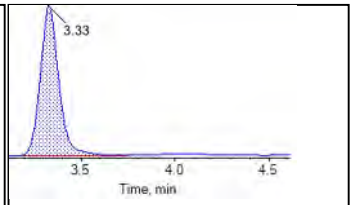

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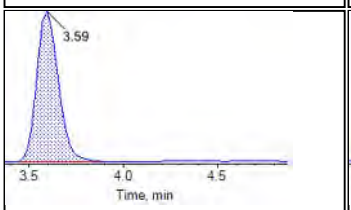

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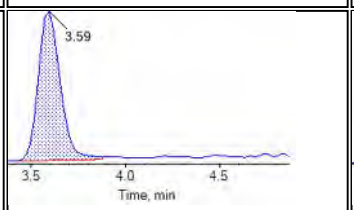

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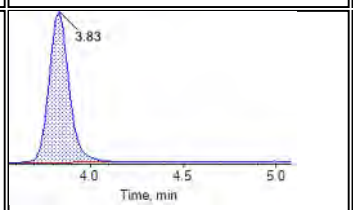

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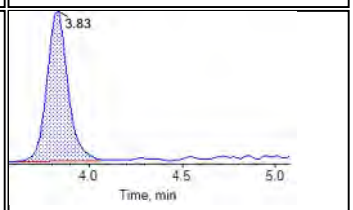

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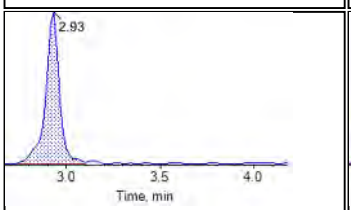

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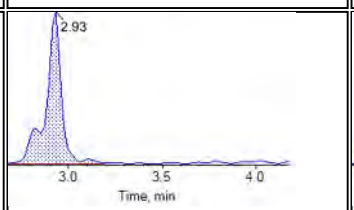

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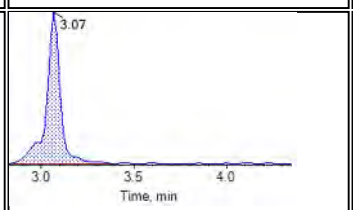

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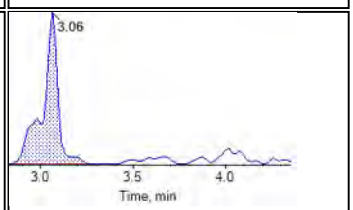

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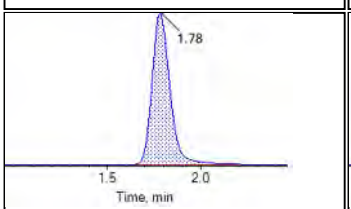

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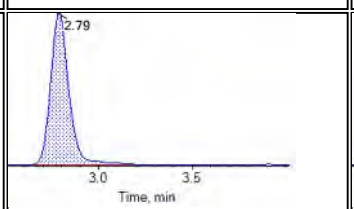

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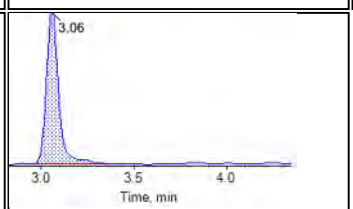

d5-EtFOSAA

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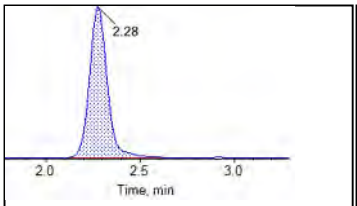

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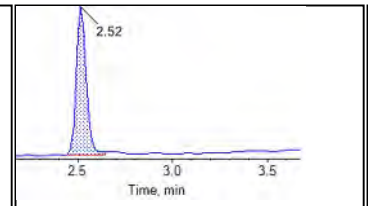

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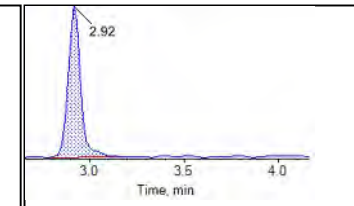

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"CR632LCS-FS","SOP 5-369","Initial","CR632LCS-FS","BNO","BDO-1839","d5-EtFOSAA","1.480000","ng/L","","-99.00","NA","","SIS","93.00","","-99.00","NA","YES","1.600000","",".250000",".000500",".50",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","307-24-4","PFHxA",".480000","ng/L","U",".21","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".48",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","375-85-9","PFHpA",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".00050

0",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","335-67-1","PFOA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","375-95-1","PFNA",".960000","ng/L","U",".36","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","335-76-2","PFDA",".960000","ng/L","U",".38","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","2058-94-8","PFUnA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","307-55-1","PFDoA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","72629-94-8","PFTrDA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-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-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","2355-31-9","NMeFOSAA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","2991-50-6","NEtFOSAA",".960000","ng/L","U",".42","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","375-73-5","PFBS",".480000","ng/L","U",".20","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".48",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","1763-23-1","PFOS",".960000","ng/L","U",".29","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","355-46-4","PFHxS",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","BDO-2106","13C2-PFHxA",".450000","ng/L","","-99.00","NA","","SIS","117.00","","-99.00","NA","YES",".380000","",".260000",".000500",".50",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","BDO-2110","13C2-PFDA",".390000","ng/L","","-99.00","NA","","SIS","100.00","","-99.00","NA","YES",".380000","",".260000",".000500",".50",""
"JAX-RES-08152018-1015-34-","SOP 5-369","Initial","J7448-FS","BNO","BDO-1839","d5-EtFOSAA","1.490000","ng/L","","-99.00","NA","","SIS","97.00","","-99.00","NA","YES","1.540000","",".260000",".000500",".50",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","307-24-4","PFHxA",".490000","ng/L","U",".22","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".49",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","375-85-9","PFHpA",".980000","ng/L","U",".33","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","335-67-1","PFOA",".980000","ng/L","U",".37","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500

",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","375-95-1","PFNA",".980000","ng/L","U",".36","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","335-76-2","PFDA",".980000","ng/L","U",".38","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","2058-94-8","PFUnA",".980000","ng/L","U",".37","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","307-55-1","PFDoA",".980000","ng/L","U",".41","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","72629-94-8","PFTrDA",".980000","ng/L","U",".41","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","376-06-7","PFTeDA","1.470000","ng/L","U",".72","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500","1.47",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","2355-31-9","NMeFOSAA",".980000","ng/L","U",".41","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","2991-50-6","NEtFOSAA",".980000","ng/L","U",".43","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","375-73-5","PFBS",".490000","ng/L","U",".21","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".49",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","1763-23-1","PFOS",".980000","ng/L","U",".29","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","355-46-4","PFHxS",".980000","ng/L","U",".33","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".98",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","BDO-2106","13C2-PFHxA",".400000","ng/L","","-99.00","NA","","SIS","102.00","","-99.00","NA","YES",".390000","",".255000",".000500",".50",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","BDO-2110","13C2-PFDA",".370000","ng/L","","-99.00","NA","","SIS","93.00","","-99.00","NA","YES",".390000","",".255000",".000500",".50",""
"JAX-RES-08152018-1045-33-","SOP 5-369","Initial","J7450-FS","BNO","BDO-1839","d5-EtFOSAA","1.400000","ng/L","","-99.00","NA","","SIS","89.00","","-99.00","NA","YES","1.570000","",".255000",".000500",".50",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","307-24-4","PFHxA",".480000","ng/L","U",".21","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".48",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","375-85-9","PFHpA",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","335-67-1","PFOA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","375-95-1","PFNA",".960000","ng/L","U",".36","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500

","".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","335-76-
2","PFDA",".960000","ng/L","U",".38","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500
",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","2058-94-
8","PFUnA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".00050
0",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","307-55-
1","PFDoA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".00050
0",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","72629-94-
8","PFTrDA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".0005
00",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","376-06-
7","PFTeDA","1.440000","ng/L","U",".70","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000
500","1.44",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","2355-31-
9","NMeFOSAA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".0
00500",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","2991-50-
6","NEtFOSAA",".960000","ng/L","U",".42","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".00
0500",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","375-73-
5","PFBS",".480000","ng/L","U",".20","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500"
,".48",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","1763-23-
1","PFOS",".960000","ng/L","U",".29","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500"
,".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","355-46-
4","PFHxS",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500
",".96",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","BDO-2106","13C2-
PFHxA",".430000","ng/L","","-99.00","NA","","SIS","112.00","","-99.00","NA","YES",".380000","",".260000",".0005
00",".50",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","BDO-2110","13C2-
PFDA",".420000","ng/L","","-99.00","NA","","SIS","108.00","","-99.00","NA","YES",".380000","",".260000",".00050
0",".50",""
"JAX-RES-08152018-1130-15-","SOP 5-369","Initial","J7452-FS","BNO","BDO-1839","d5-
EtFOSAA","1.520000","ng/L","","-99.00","NA","","SIS","99.00","","-99.00","NA","YES","1.540000","",".260000",".0
00500",".50",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR631PB-FS","","WATER","CR631PB-FS","Method
Bla","","-99.000000","SOP 5-369","Gen Prep","Initial","08/22/2018 09:42","08/22/2018
19:56","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0518","18-0518","DP-18-0232","DP-18-
0232","18-0518","08/22/2018 09:42","08/23/2018 14:46",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR632LCS-FS","","WATER","CR632LCS-
FS","LCS","","-99.000000","SOP 5-369","Gen Prep","Initial","08/22/2018 09:42","08/22/2018
20:05","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0518","18-0518","DP-18-0232","DP-18-
0232","18-0518","08/22/2018 09:42","08/23/2018 14:46",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08152018-1015-34-FRB","08/15/2018
10:15","W","J7448-FS","NM","SHP-180816-02","1.400000","SOP 5-369","Gen Prep","Initial","08/22/2018
09:42","08/22/2018 20:14","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0518","18-0518","DP-
18-0232","DP-18-0232","18-0518","08/16/2018 11:00","08/23/2018 14:46",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08152018-1045-33-FRB","08/15/2018
10:45","W","J7450-FS","NM","SHP-180816-02","1.400000","SOP 5-369","Gen Prep","Initial","08/22/2018

09:42","08/22/2018 20:23","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0518","18-0518","DP-18-0232","DP-18-0232","18-0518","08/16/2018 11:00","08/23/2018 14:46",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08152018-1130-15-FRB","08/15/2018 11:30","W","J7452-FS","NM","SHP-180816-02","1.400000","SOP 5-369","Gen Prep","Initial","08/22/2018 09:42","08/22/2018 20:32","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0518","18-0518","DP-18-0232","DP-18-0232","18-0518","08/16/2018 11:00","08/23/2018 14:46",""

TETRA TECH

INTERNAL CORRESPONDENCE

TO: **M. PETERSON** **DATE:** **SEPTEMBER 6, 2018**

FROM: **MICHELLE L. WOEBER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – POLYFLUOROALKYL SUBSTANCES (PFAS)**
NAVAL AIR STATION (NAS), JACKSONVILLE
JACKSONVILLE, FLORIDA
SAMPLE DELIVERY GROUP (SDG) 18-0518

SAMPLES: 3/Field Reagent Blanks (FRBs)/PFAS

JAX-RES-08152018-1015-34-FRB
JAX-RES-08152018-1045-33-FRB
JAX-RES-08152018-1130-15-FRB

Overview

The sample set for NAS Jacksonville, SDG 18-0518 consisted of three (3) FRBs. All three (3) 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 15, 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 FRBs were analyzed if the corresponding samples had one or more detections. No contamination was detected in the FRBs associated with the corresponding samples in SDG 18-0534.

The buffering agent Trizma was added to the FRBs.

Non-detected results were reported to the MDL in the database.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

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.

Michelle L. Woeber

Tetra Tech, Inc.
Michelle L. Woeber
Chemist/Data Validator

Joseph A. Samchuck

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.

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted detection limit.
J	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).
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
R	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.
UR	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.
X	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 x 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

PROJ_NO: 08005-SE03	NSAMPLE	JAX-RES-08152018-1015-34-FRB			JAX-RES-08152018-1045-33-FRB			JAX-RES-08152018-1130-15-FRB		
SDG: 18-0518	LAB_ID	J7448-FS			J7450-FS			J7452-FS		
FRACTION: PFAS	SAMP_DATE	8/15/2018			8/15/2018			8/15/2018		
MEDIA: WATER	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-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		0.96	U		0.98	U		0.96	U	
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		0.96	U		0.98	U		0.96	U	
PENTADECAFLUOROOCTANOIC ACID (PFOA)		0.96	U		0.98	U		0.96	U	
PERFLUOROBUTANESULFONIC ACID (PFBS)		0.48	U		0.49	U		0.48	U	
PERFLUORODECANOIC ACID (PFDA)		0.96	U		0.98	U		0.96	U	
PERFLUORODODECANOIC ACID (PFDOA)		0.96	U		0.98	U		0.96	U	
PERFLUOROHEPTANOIC ACID (PFHPA)		0.96	U		0.98	U		0.96	U	
PERFLUOROHEXANESULFONIC ACID (PFHXS)		0.96	U		0.98	U		0.96	U	
PERFLUOROHEXANOIC ACID (PFHXA)		0.48	U		0.49	U		0.48	U	
PERFLUORONONANOIC ACID (PFNA)		0.96	U		0.98	U		0.96	U	
PERFLUOROOCTANESULFONIC ACID (PFOS)		0.96	U		0.98	U		0.96	U	
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.44	U		1.47	U		1.44	U	
PERFLUOROTRIDECANOIC ACID (PFTRIA)		0.96	U		0.98	U		0.96	U	
PERFLUOROUNDECANOIC ACID (PFUNA)		0.96	U		0.98	U		0.96	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-08152018-1015-34-FRB				
Battelle ID	J7448-FS				
Sample Type	SA				
Collection Date	08/15/2018				
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	0.48	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
PFTrDA	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	117				
13C2-PFDA	100				
d5-EtFOSAA	97				

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

Client ID	JAX-RES-08152018-1045-33-FRB				
Battelle ID	J7450-FS				
Sample Type	SA				
Collection Date	08/15/2018				
Extraction Date	08/22/2018				
Analysis Date	08/22/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	W				
Sample Size	0.255				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.49	U	0.22	0.49	2.45
PFHpA	0.98	U	0.33	0.98	2.45
PFOA	0.98	U	0.37	0.98	2.45
PFNA	0.98	U	0.36	0.98	2.45
PFDA	0.98	U	0.38	0.98	2.45
PFUnA	0.98	U	0.37	0.98	2.45
PFDoA	0.98	U	0.41	0.98	2.45
PFTrDA	0.98	U	0.41	0.98	2.45
PFTeDA	1.47	U	0.72	1.47	2.45
NMeFOSAA	0.98	U	0.41	0.98	2.45
NEtFOSAA	0.98	U	0.43	0.98	2.45
PFBS	0.49	U	0.21	0.49	2.45
PFHxS	0.98	U	0.33	0.98	2.45
PFOS	0.98	U	0.29	0.98	2.45
Surrogate Recoveries (%)					
13C2-PFHxA	102				
13C2-PFDA	93				
d5-EtFOSAA	89				

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

Client ID	JAX-RES-08152018-1130-15-FRB				
Battelle ID	J7452-FS				
Sample Type	SA				
Collection Date	08/15/2018				
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	0.48	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
PFTrDA	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	112				
13C2-PFDA	108				
d5-EtFOSAA	99				

APPENDIX C

SUPPORT DOCUMENTATION

BATTELLE It can be done

Chain-of-Custody

Client Contact Information: Tetra Tech	Project Manager: Mark Peterson Sampler Information (print name): David Siefken Phone: 904.334.7260 Email:	Sampling Site: NAS JAX	Site Information: Residential Wells
Project Name: 112608005 SE0375 Project No.: NAS JAX PFAS	Turnaround Time (TAT) Requested: Normal / Priority / RUSH Time Zone:		COC # 003 Page# 1 of 1

	Sample Identification	2018 Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservative: Trizma	Analysis: PFAS-537
J7445	JAX-RES-08152018-0930-18	8-15	0930	G	W	2		2
J7446	JAX-RES-08152018-0930-18-FRB	8-15	0930	G	W	1		1
J7447	JAX-RES-08152018-1015-34	8-15	1015	G	W	2		2
J7448	JAX-RES-08152018-1015-34-FRB	8-15	1015	G	W	1		1
J7449	JAX-RES-08152018-1045-33	8-15	1045	G	W	2		2
J7450	JAX-RES-08152018-1045-33-FRB	8-15	1045	G	W	1		1
J7451	JAX-RES-08152018-1130-15	8-15	1130	G	W	2		2
J7452	JAX-RES-08152018-1130-15-FRB	8-15	1130	G	W	1		1

Receipt Temperature:(°C) 1.4°	Samples Intact: (Yes) - No	Samples on Ice (Yes) No	Receipt Comments:

Relinquished by (Print/Sign)	Company	Date/Time	Received by (Print/Sign)	Company	Date/Time
David Siefken	Tetra Tech	8-15-18 / 1300	FedEx		
			Matt Schumitz	Battelle	8-16-18 1100

Comments: All Potable Water Samples

BATTELLE
It can be done

ShpNo SHP-180816-02

Battelle Project No:

Sample Receipt Form

Approved: ☐ Authorized ☐

Project Number: 112G08005 SE0375 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Thursday, August 16, 2018 11:00 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier **Tracking Number:** Fed Ex

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 1551 4077	Custody Seals	Intact	Intact	Therm_2	1.4	8

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): 1.4 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:** J7445 - J7452

Samples logged in by: Schumitz, Matt **Date/Time:** 08/16/2018 11:00 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

BATTELLE
It can be done

ShpNo SHP-180816-02

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: 112G08005 SE0375 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Thursday, August 16, 2018 11:00 AM

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:
J7445	JAX-RES-08152018-0930-18	08/15/18 9:30	08/16/18 11:25	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7446	JAX-RES-08152018-0930-18-FRB	08/15/18 9:30	08/16/18 11:25	1	W	1.4	NA	NA	NA	R0119 (NA)			
J7447	JAX-RES-08152018-1015-34	08/15/18 10:15	08/16/18 11:25	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7448	JAX-RES-08152018-1015-34-FRB	08/15/18 10:15	08/16/18 11:26	1	W	1.4	NA	NA	NA	R0119 (NA)			
J7449	JAX-RES-08152018-1045-33	08/15/18 10:45	08/16/18 11:26	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7450	JAX-RES-08152018-1045-33-FRB	08/15/18 10:45	08/16/18 11:26	1	W	1.4	NA	NA	NA	R0119 (NA)			
J7451	JAX-RES-08152018-1130-15	08/15/18 11:30	08/16/18 11:26	2	W	1.4	NA	NA	NA	R0119 (NA)			
J7452	JAX-RES-08152018-1130-15-FRB	08/15/18 11:30	08/16/18 11:27	1	W	1.4	NA	NA	NA	R0119 (NA)			

Total Samples: 8

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0232
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/15/2018	08/16/2018	1.4

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 18-0509.

	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. There were no ion ratio exceedances above 50% RPD 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.
$\leq$ 1/3 the MRL	No exceedances noted.
	No comments.

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.

Matrix Spike (MS) / Duplicate (MSD)	A MS/MSD were prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference was calculated to measure precision.
70-130% of true value, RPD $\leq$ 30%	Not applicable.
	MS/MSD samples were not prepared with this batch of samples.

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 quadradic curve fitting.
R^2 >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.

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project Number: 100119154-SE0375
Preparation Batch: 18-0518
Data Set: DP-18-0232
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

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BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	CTO-SE0375: Naval Air Station Jackson	**Data Set Number:**	DP-18-0232
Project Number:	100119154-SE0375	**Prep Batch Number:**	18-0518
Entered By:	Denise Schumitz	**Entered On:**	08/23/2018
Test Code (Matrix Type):	Master_371(L)		

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 PFTrDA in this method. There is no impact on the data once this point of the calibration is removed.
DMS 8/23/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.08.23 12:34:38 -04'00'

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Glossary of Data Qualifiers

Flag:	Application:
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 highers 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:

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

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:	CR632LCS-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:	08222018_DW.wiff
Result table:	08232018_DW
Area:	210,517.44
IS Name:	d3-MeFOSAA
IS Area:	25,373.27
IS Amount (ng/L):	400
y-intercept:	0.04293
slope:	0.82809

$$\text{Concentration} = \frac{[(210517.44/25373.27) - 0.04293]}{0.82809} * 400 * 0.001 * 1 / 0.25$$

ng/L = 15.95

Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project No.: 100119154-SE0375
Preparation Batch: 18-0518
Data Set: DP-18-0232

	CR631PB-FS (Procedural Blank)	CR632LCS-FS (Laboratory Control Sample)	J7448-FS (JAX-RES-08152018-1015-34-FRB)	J7450-FS (JAX-RES-08152018-1045-33-FRB)	J7452-FS (JAX-RES-08152018-1130-15-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/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

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/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	Lower	Upper
152,475.60	76,237.80	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	
CR631PB-FS(0)	Procedural Blank	8/22/18 19:56	13C4-PFOS	157,722.39	76,237.80	228,713.40		106,764.71	213,529.43	
CR632LCS-FS(0)	Laboratory Control Sample	8/22/18 20:05	13C4-PFOS	183,344.11	76,237.80	228,713.40		106,764.71	213,529.43	
J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/18 20:14	13C4-PFOS	146,482.20	76,237.80	228,713.40		106,764.71	213,529.43	
J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/18 20:23	13C4-PFOS	144,108.02	76,237.80	228,713.40		106,764.71	213,529.43	
J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/18 20:32	13C4-PFOS	161,563.51	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	

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

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/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	
CR631PB-FS(0)	Procedural Blank	8/22/18 19:56	13C2-PFOA	33,834.64	17,687.66	53,062.98		23,109.19	46,218.38	
CR632LCS-FS(0)	Laboratory Control Sample	8/22/18 20:05	13C2-PFOA	42,618.45	17,687.66	53,062.98		23,109.19	46,218.38	
J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/18 20:14	13C2-PFOA	31,591.60	17,687.66	53,062.98		23,109.19	46,218.38	
J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/18 20:23	13C2-PFOA	35,855.42	17,687.66	53,062.98		23,109.19	46,218.38	
J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/18 20:32	13C2-PFOA	37,864.21	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	

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

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/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	12.0	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	
CR631PB-FS(0)	Procedural Blank	8/22/18 19:56	d3-MeFOSAA	21,900.66	11,109.17	33,327.51		14,660.33	29,320.66	
CR632LCS-FS(0)	Laboratory Control Sample	8/22/18 20:05	d3-MeFOSAA	25,373.27	11,109.17	33,327.51		14,660.33	29,320.66	
J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/18 20:14	d3-MeFOSAA	19,483.27	11,109.17	33,327.51		14,660.33	29,320.66	
J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/18 20:23	d3-MeFOSAA	21,492.43	11,109.17	33,327.51		14,660.33	29,320.66	
J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/18 20:32	d3-MeFOSAA	22,094.19	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	

BATTELLE

Summary Asymmetry Report

Created with Analyst Reporter
Printed: 23/08/2018 10:44:00 AM

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	Asymmetry Factor	Passing Range
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

BATTELLE

Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 23/08/2018 10:44:41 AM

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
PFDoA_1	613.0 / 569.0	3.44	31	>10
PFDoA_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

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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	10.50	1.30	3.90	17
PFHpA	375-85-9	10.64	1.49	4.47	17
PFOA	335-67-1	10.54	1.52	4.56	17
PFNA	375-95-1	10.52	1.35	4.05	17
PFDA	335-76-2	10.45	1.62	4.86	17
PFUnA	2058-94-8	10.18	1.74	5.22	17
PFDoA	307-55-1	10.09	1.67	5.01	17
PFTrDA	72629-94-8	10.25	1.83	5.49	17
PFTeDA	376-06-7	11.47	2.47	7.41	17
NMeFOSAA	2355-31-9	10.48	1.08	3.24	17
NEtFOSAA	2991-50-6	10.06	1.29	3.87	17
PFBS	375-73-5	8.65	1.34	4.02	17
PFHxS	355-46-4	9.80	1.55	4.65	17
PFOS	1763-23-1	9.42	1.58	4.74	17

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)
PFHxA	307-24-4	0.22	0.5	2.5	2.5
PFHpA	375-85-9	0.34	1.0	2.5	2.5
PFOA	335-67-1	0.38	1.0	2.5	2.5
PFNA	375-95-1	0.37	1.0	2.5	2.5
PFDA	335-76-2	0.39	1.0	2.5	2.5
PFUnA	2058-94-8	0.38	1.0	2.5	2.5
PFDoA	307-55-1	0.42	1.0	2.5	2.5
PFTrDA	72629-94-8	0.42	1.0	2.5	2.5
PFTeDA	376-06-7	0.73	1.5	2.5	2.5
NMeFOSAA	2355-31-9	0.42	1.0	2.5	2.5
NEtFOSAA	2991-50-6	0.44	1.0	2.5	2.5
PFBS	375-73-5	0.21	0.5	2.5	2.5
PFHxS	3871-99-6	0.34	1.0	2.5	2.5
PFOS	1763-23-1	0.30	1.0	2.5	2.5

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

ID 626 04/18

Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFBS	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
13C2-PFHxA	NA	SIS	315.0 / 270.0	NA
13C2-PFDA	NA	SIS	515.0 / 470.0	NA
d5-EtFOSAA	NA	SIS	589.0 / 419.0	NA
$^{13}C_2$-PFOA	NA	IS	415.0 / 270.0	NA
$^{13}C_4$-PFOS	NA	IS	503.0 / 80.0	NA
d3-MeFOSAA	NA	IS	573.0 / 419.0	NA

Drinking Water Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF[1]	Sample Size (L)	Sample Equivalent (ng/L)[2]
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

[1] - base level dilution as part of the extraction procedure

[2] - 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

Preventive Maintenance Date:	22-Feb-2017

Request ID:	3683
Company Name:	Battelle Memorial Institute
Instrument ID:	X60666
Instrument Model:	QTRAP 5500
Instrument Serial Number:	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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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^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.5	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.9	Read Only
☑ CAD Medium	2.4	Read Only
☑ CAD High	3.4	Read Only
☑ CAD 12	3.4	2.4 to 4.5 x10^{-5} 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. Record10mca.

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^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.8	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	2.1	Read Only
☑ CAD Medium	2.6	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2^{e}6	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0^{e}6	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4^{e}7	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	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	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2^{e}6	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0^{e}6	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4^{e}7	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8^{e}7	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	Width Specs
	Value	Spec	Value	
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	≥1.0^{e}7	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	≥4.0^{e}7	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	≥8.0^{e}6	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	≥4.0^{e}7	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	≥7.2 ^{e}6	0.1302	<0.35
ER 922.010	0.05	3.89 e7	≥2.8 ^{e}6	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	≥2.4 ^{e}7	0.3740	<0.65
ER 922.010	0.05	2.37 e8	≥6.8 ^{e}7	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	≥4.4 ^{e}7	0.1840	<0.35
ER 601.978	0.05	7.74 e7	≥5.6 ^{e}7	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	≥1.2 ^{e}8	0.4382	<0.65
ER 601.978	0.05	2.55 e8	≥1.6 ^{e}8	0.6205	<0.65

Zef Scientific Inc.

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Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
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Canada H9P 1J8

Phone: 1.866.854.7988

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
☐ 236 OR ☑ 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10e6

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
PFDoA	1.00 U	0.42	1.00	2.50
PFTrDA	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	CR631PB-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
PFDoA	1.00	U	0.42	1.00	2.50
PFTrDA	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	117
13C2-PFDA	109
d5-EtFOSAA	99

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

Client ID	Laboratory Control Sample					
Battelle ID	CR632LCS-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				Control Limits	
Units	ng/L	Target	Recovery	Qual	Lower	Upper
PFHxA	16.34	15.00	109		70	130
PFHpA	16.60	15.00	111		70	130
PFOA	15.45	15.00	103		70	130
PFNA	15.53	15.00	104		70	130
PFDA	15.00	15.00	100		70	130
PFUnA	14.18	15.00	95		70	130
PFDoA	14.79	15.00	99		70	130
PFTrDA	14.25	15.00	95		70	130
PFTeDA	14.88	15.00	99		70	130
NMeFOSAA	16.40	15.00	109		70	130
NEtFOSAA	15.95	15.00	106		70	130
PFBS	13.85	13.28	104		70	130
PFHxS	14.12	14.18	100		70	130
PFOS	13.18	14.33	92		70	130

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	98
d5-EtFOSAA	93

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It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	**Project No.(s)**
CTO-SE0375: Naval Air Station Jacksonville	100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

SOP Numbers (see workplan for modifications)

VOASOP No. 5-371

This Batch Contains The Following Samples:
CR631PB-FS
CR632LCS-FS
J7448-FS
J7450-FS
J7452-FS

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

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

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It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description
CR631PB-FS	Procedural Blank
CR632LCS-FS	Laboratory Control Sample
J7448-FS	JAX-RES-08152018-1015-34-FRB
J7450-FS	JAX-RES-08152018-1045-33-FRB
J7452-FS	JAX-RES-08152018-1130-15-FRB

Samples Assigned By: Jonathan Thorn Date : August 21, 2018

Comments:

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BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR631PB-FS	Procedural Blank	250.0	NA	--	08/22/18 SAS
CR632LCS-FS	Laboratory Control Sample	250.0	NA	--	08/22/18 SAS
J7448-FS	JAX-RES-08152018-1015-34-FRB	260.0	1	C	08/22/18 SAS
J7450-FS	JAX-RES-08152018-1045-33-FRB	255.0	1	C	08/22/18 SAS
J7452-FS	JAX-RES-08152018-1130-15-FRB	260.0	1	C	08/22/18 SAS

Comments:

Sample ID:	Comments:
CR631PB-FS	1.26g Trizma(180502-01) weighed on BAL-009
CR632LCS-FS	1.26g Trizma(180502-01) weighed on BAL-009

Samples Assigned By Jonathan Thorn Date : August 21, 2018

* - "C" = Sample is Consumed

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SURROGATE SPIKE FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR631PB-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
CR632LCS-FS	JZ28	LCS/MS	1	75	08/22/18 SAS	JCT	NA
CR632LCS-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7448-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7450-FS	JZ90	SIS	1	50	08/22/18 SAS	JCT	NA
J7452-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
INTERNAL STANDARD SPIKING FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

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
CR631PB-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
CR632LCS-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
J7448-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
J7450-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT
J7452-FS(0)	950	50	JZ87	50	1	1000	1.000	08/22/18 SAS	JCT

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ87	Pipette	B814659662

Extract Id:	Comments:
CR631PB-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.

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BATTELLE - NORWELL OPERATIONS
PREPARATION EXTRACT SPLIT FORM

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR631PB-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
CR632LCS-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7448-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7450-FS	0	--	8/22/2018 9:42:00 AM	NA		NA	NA	1.000	1.000	08/22/18 SAS
J7452-FS	0	--	8/22/2018 9:42:00 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) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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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

18-0518

CTO-SE0375: Drinking Water Analysis

W

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Aug 22 2018 2:43PM SAS	**Received On/By:**	Aug 22 2018 5:40PM DMS
Relinquished From:	Sample Preparation: NA	**Received Location:**	LC Laboratory: NA
Relinquish Comment:	NA	**Received Comment:**	NA

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	CR631PB-FS(0)	1000	1	Intact	NA
2	CR632LCS-FS(0)	1000	1	Intact	NA
3	J7448-FS(0)	1000	1	Intact	NA
4	J7450-FS(0)	1000	1	Intact	NA
5	J7452-FS(0)	1000	1	Intact	NA

Total Extracts: 5

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It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE SPECIFIC COMMENTS

Project Title(s)
CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)
100119154-SE0375

18-0518

CTO-SE0375: Drinking Water Analysis

W

Sample ID:	Comment:	Date/Initials:
CR631PB-FS	Extraction began for all samples at 9:42am	08/22/18 SAS
CR631PB-FS	Sample extraction ended at 10:05am	08/22/18 SAS
CR632LCS-FS	Sample extraction ended at 10:19am	08/22/18 SAS
J7448-FS	Sample extraction ended at 10:11am	08/22/18 SAS
J7450-FS	Sample extraction ended at 10:05am	08/22/18 SAS
J7452-FS	Sample extraction ended at 10:10am	08/22/18 SAS

BATTELLE

Sequence Report

Created with Analyst Reporter
Printed: 23/08/2018 10:45:23 AM

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
14	CR631PB-FS(0)	Procedural Blank	8/22/2018 7:56:50 PM	5-0371.dam	08222018_DW.wiff
15	CR632LCS-FS(0)	Laboratory Control Sample	8/22/2018 8:05:47 PM	5-0371.dam	08222018_DW.wiff
16	J7448-FS(0)	JAX-RES-08152018-1015-34-FRB	8/22/2018 8:14:44 PM	5-0371.dam	08222018_DW.wiff
17	J7450-FS(0)	JAX-RES-08152018-1045-33-FRB	8/22/2018 8:23:42 PM	5-0371.dam	08222018_DW.wiff
18	J7452-FS(0)	JAX-RES-08152018-1130-15-FRB	8/22/2018 8:32:38 PM	5-0371.dam	08222018_DW.wiff
19	JZ82 CCV	CCV	8/22/2018 8:41:36 PM	5-0371.dam	08222018_DW.wiff

BATTELLE

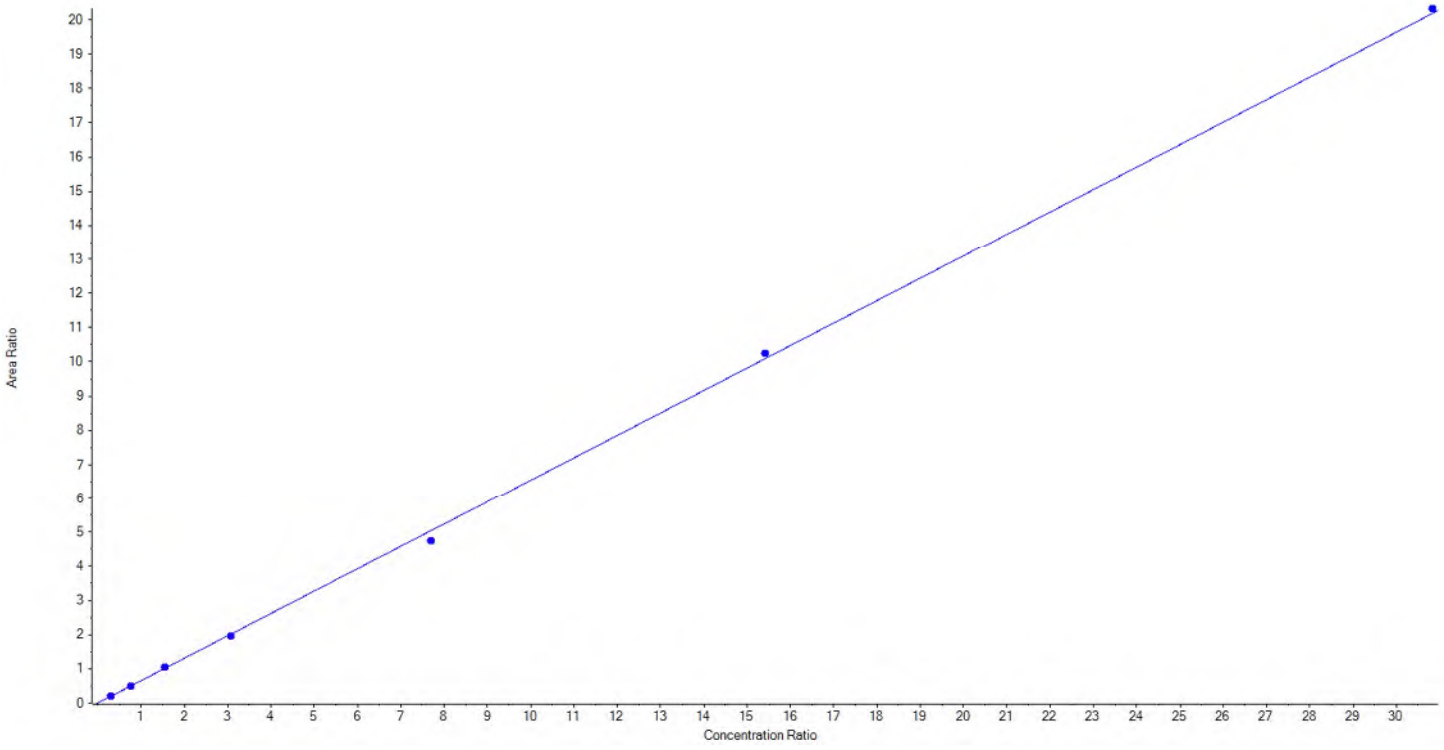
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.65429 x + 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



BATTELLE

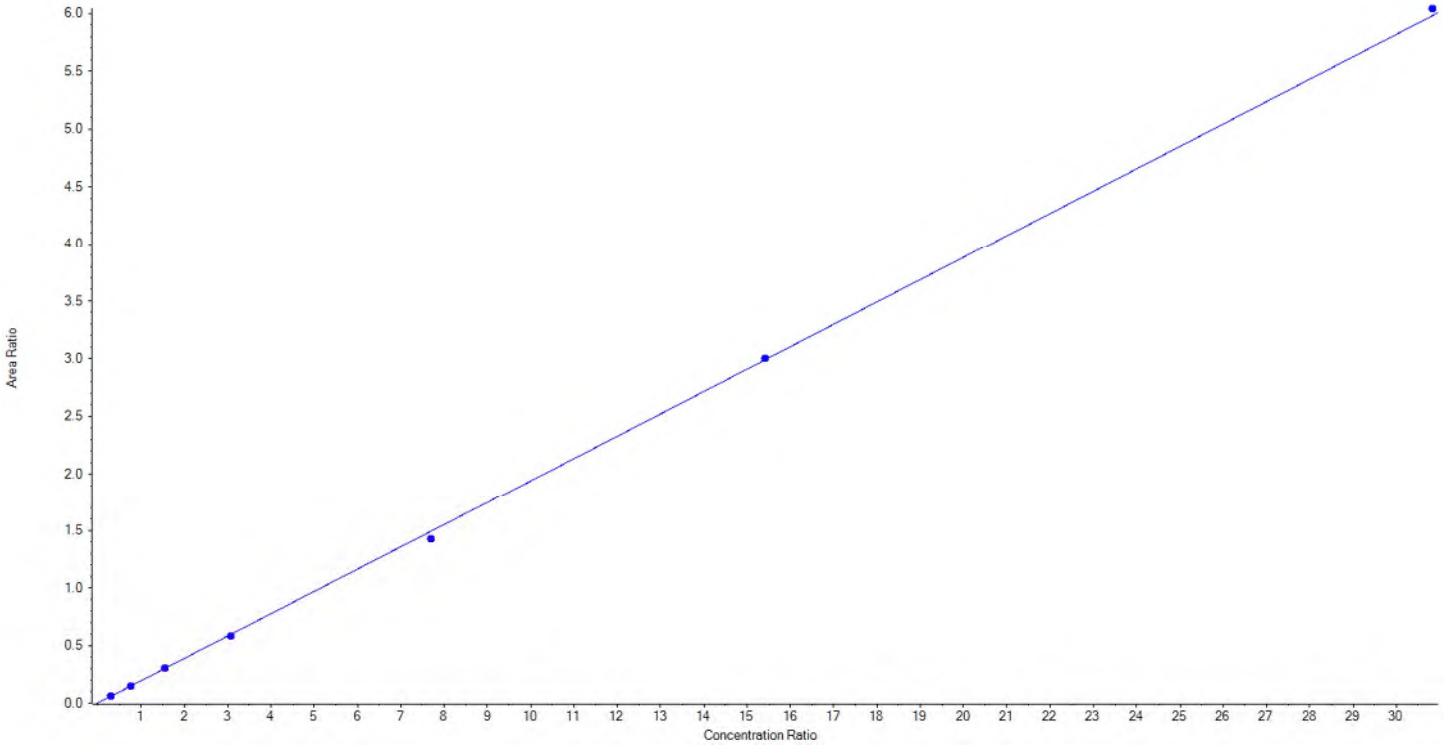
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



BATTELLE

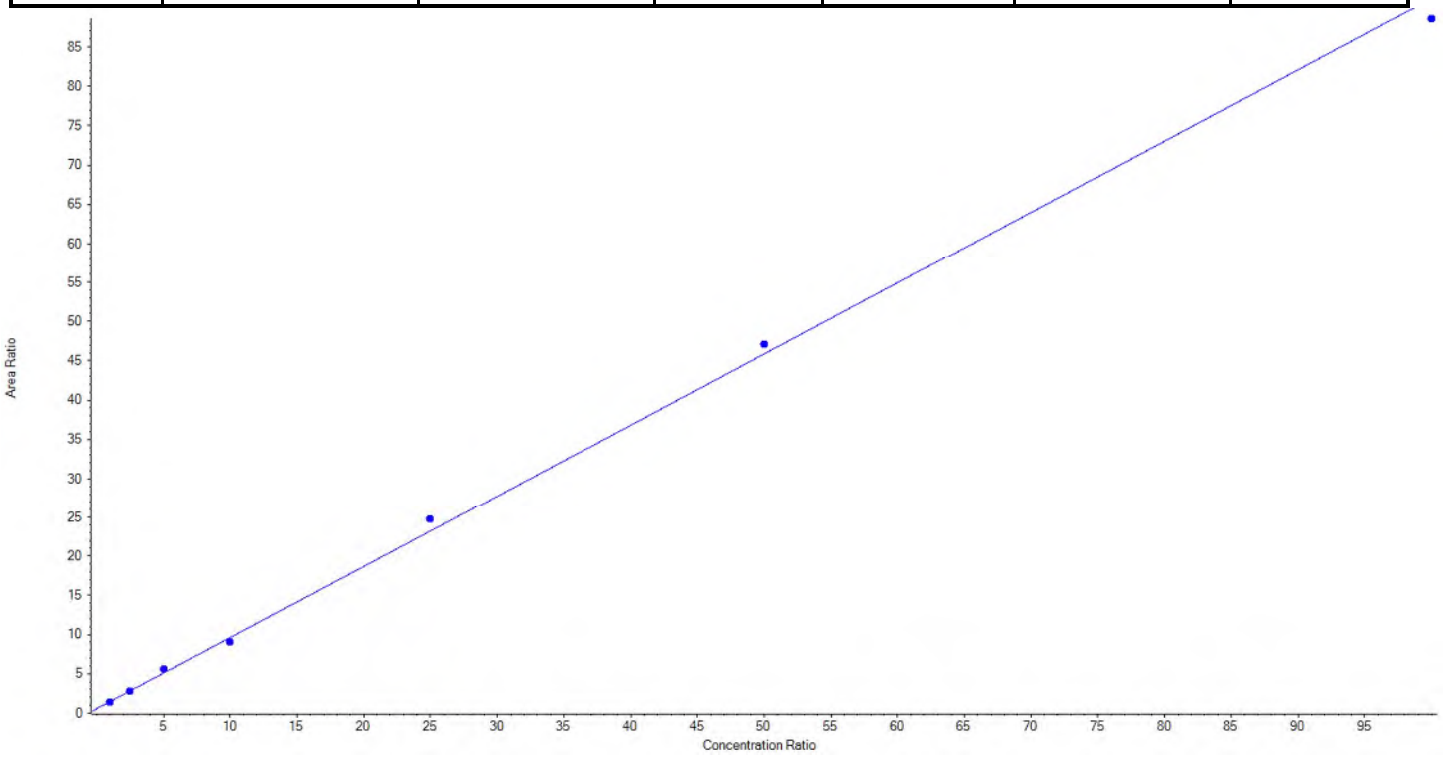
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.90582 x + 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



BATTELLE

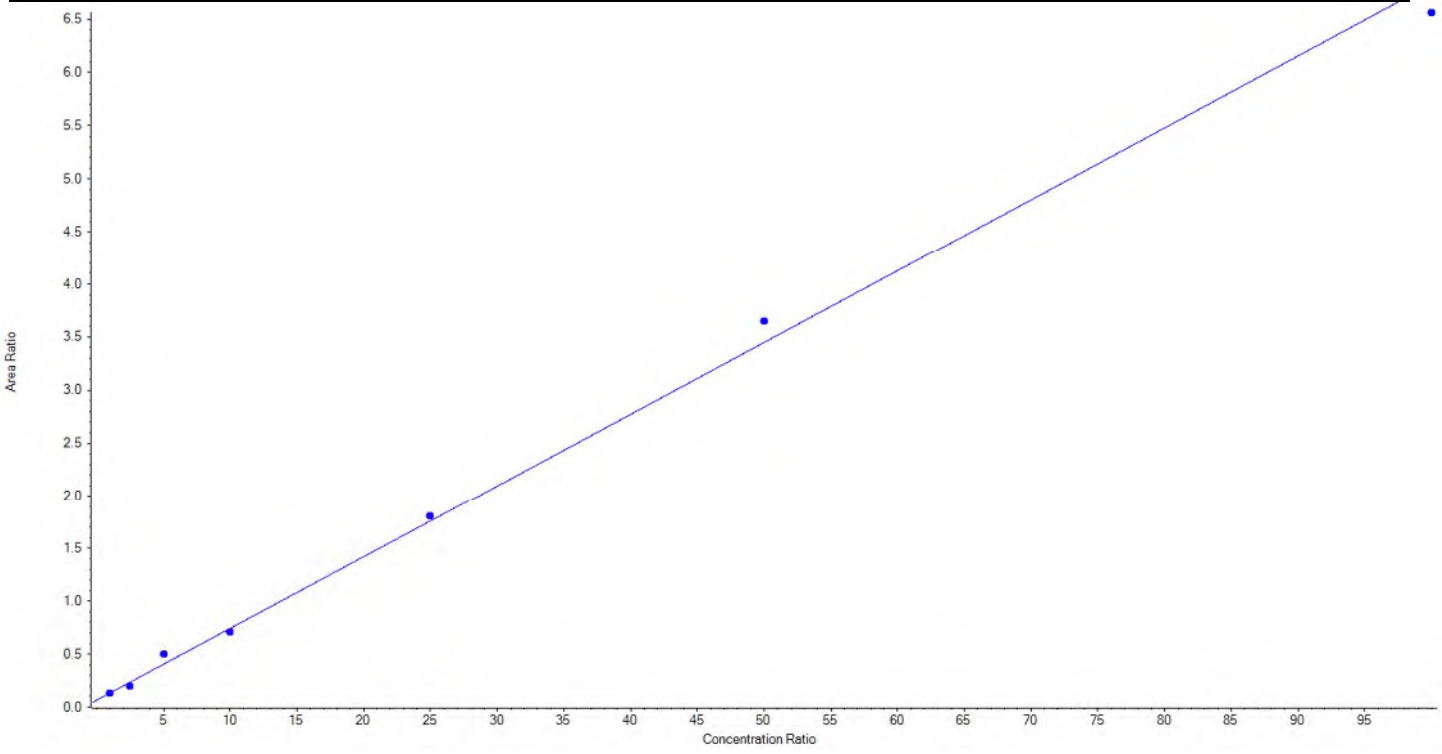
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.06765 x + 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



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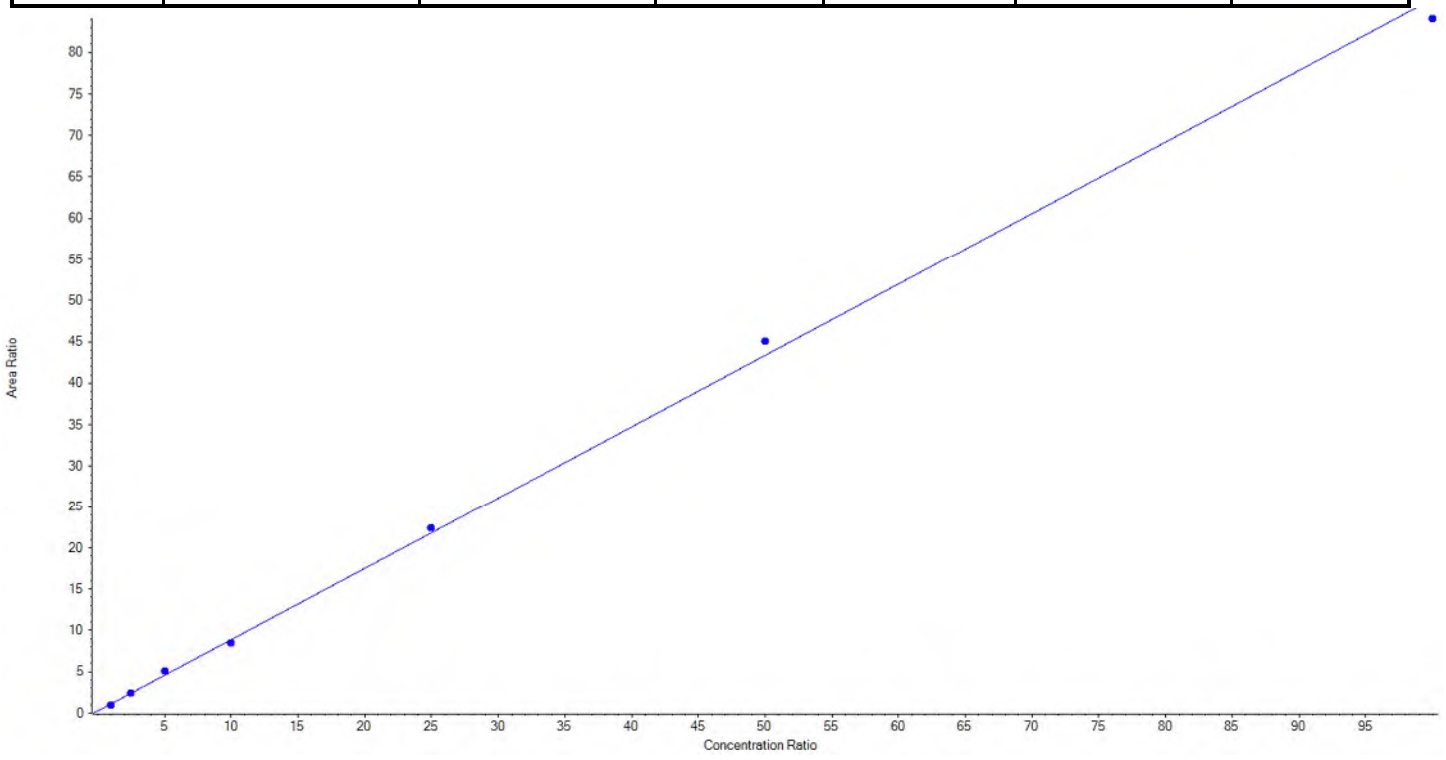
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.86184 x + 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



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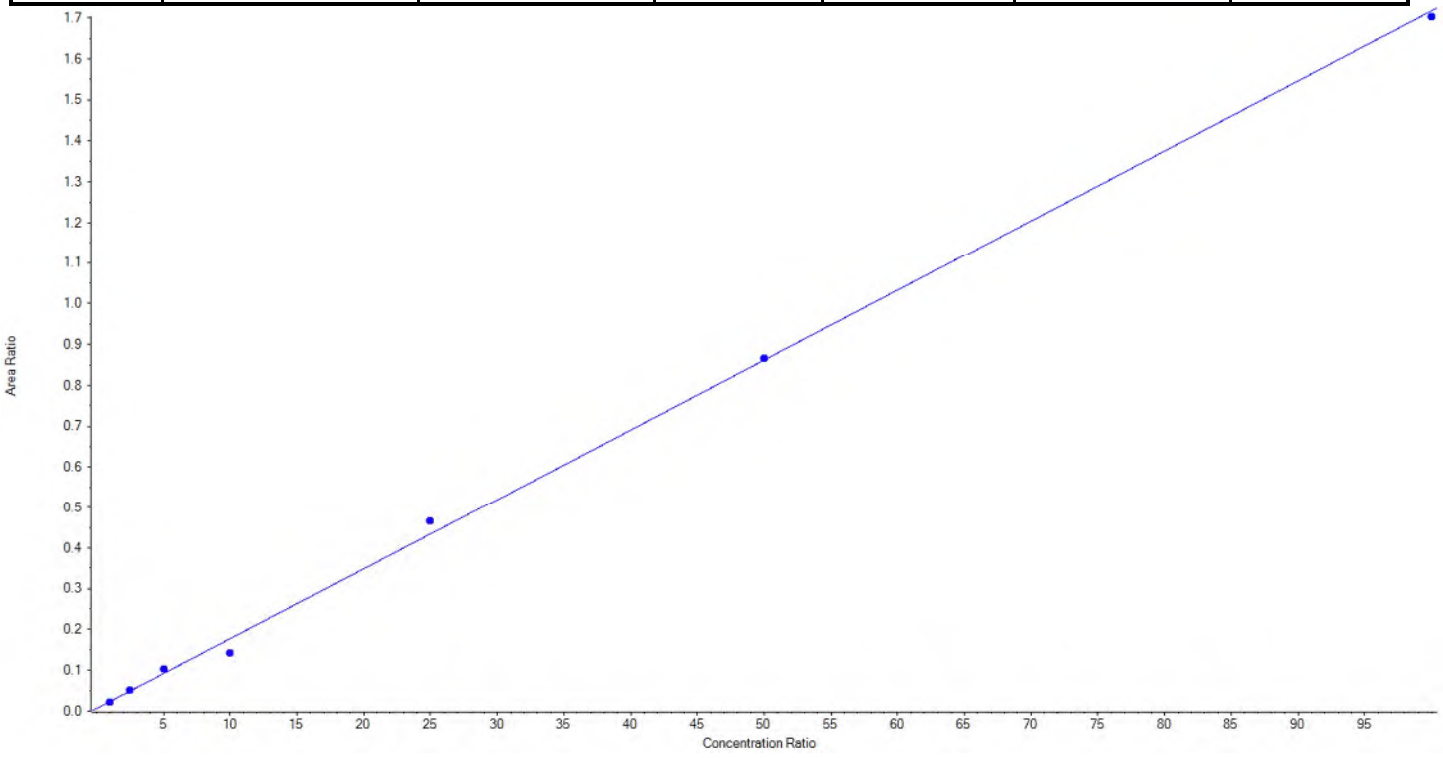
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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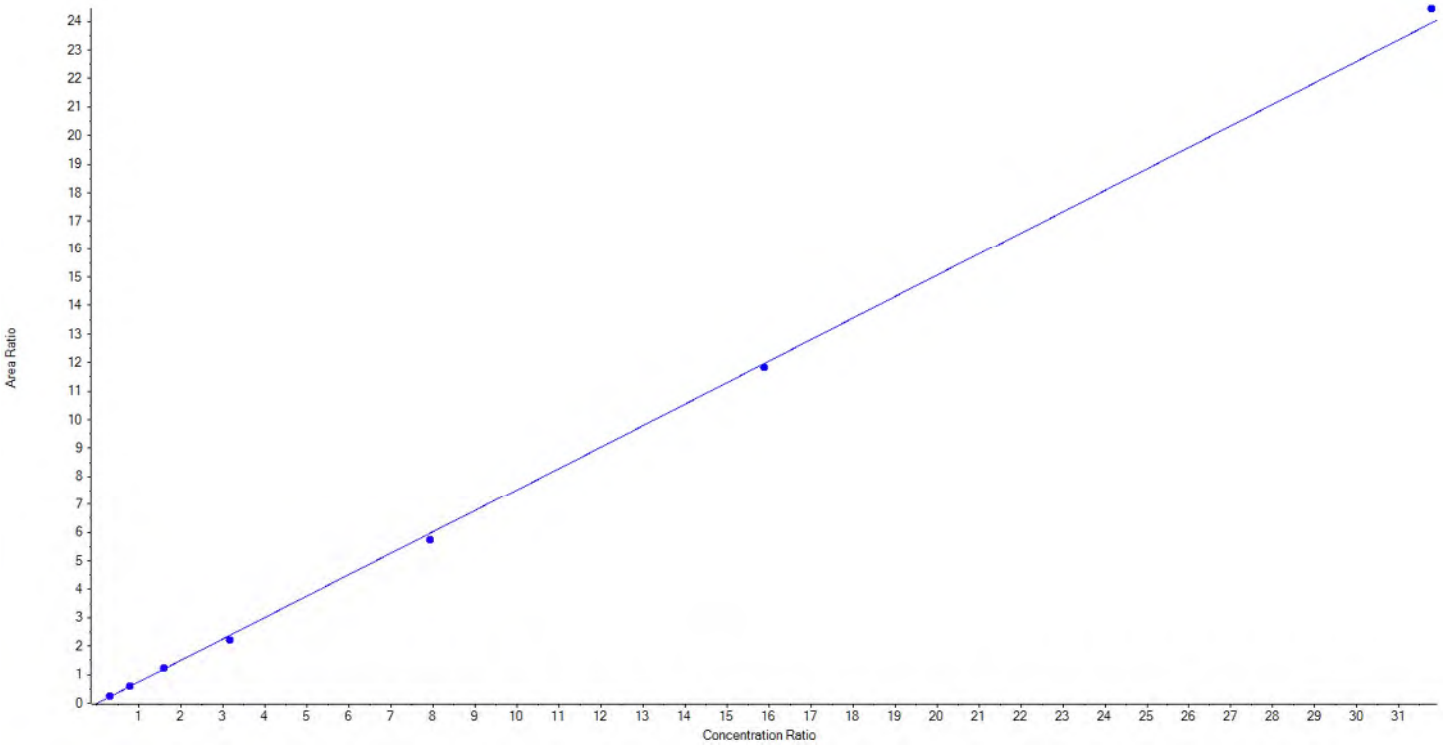
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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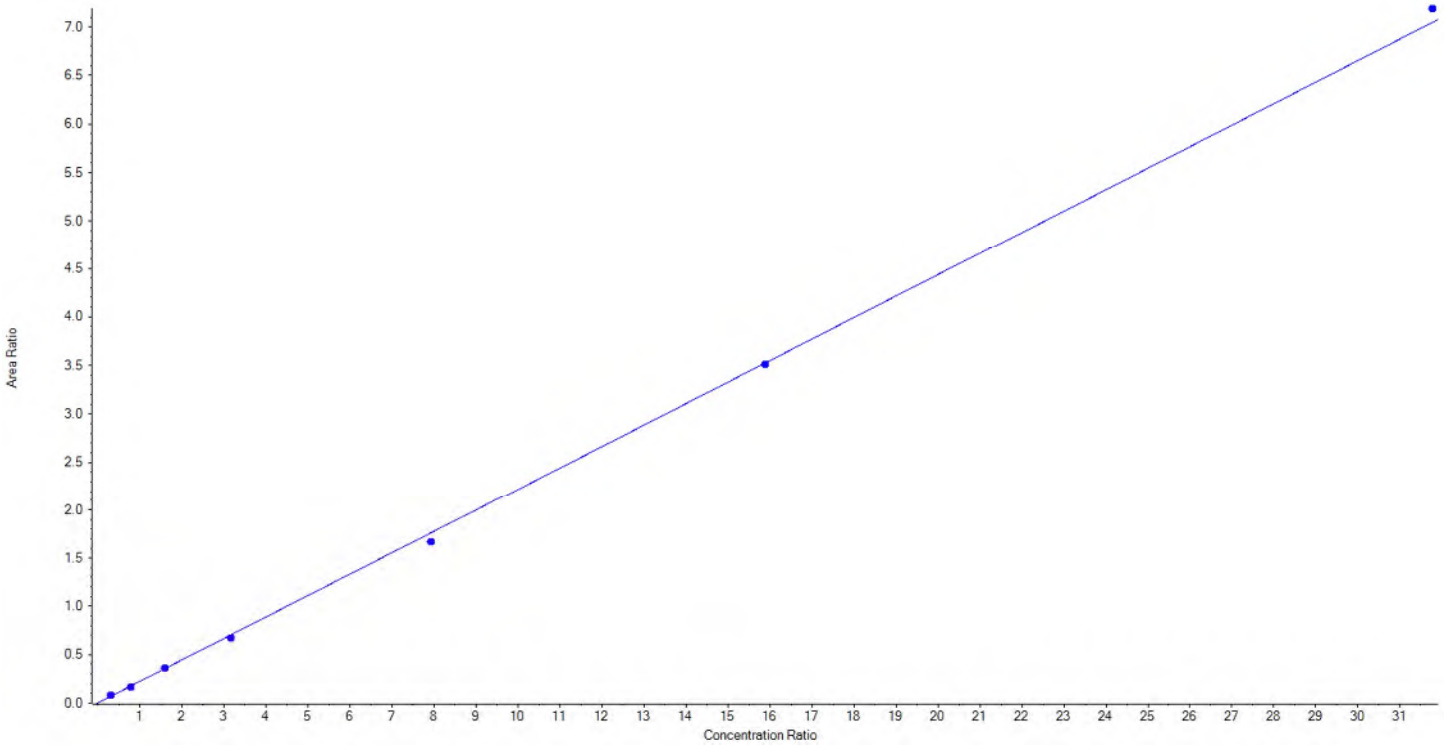
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.22168 x + 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



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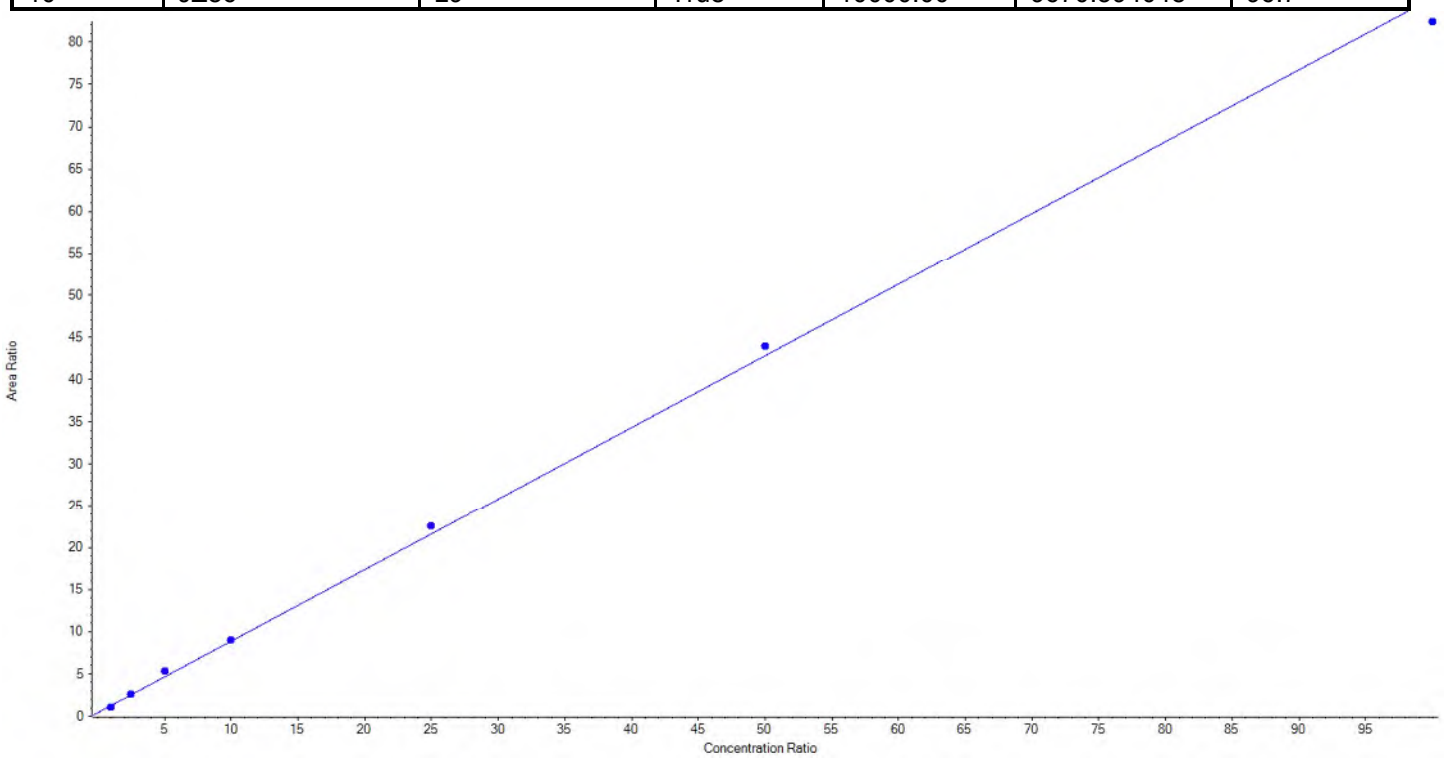
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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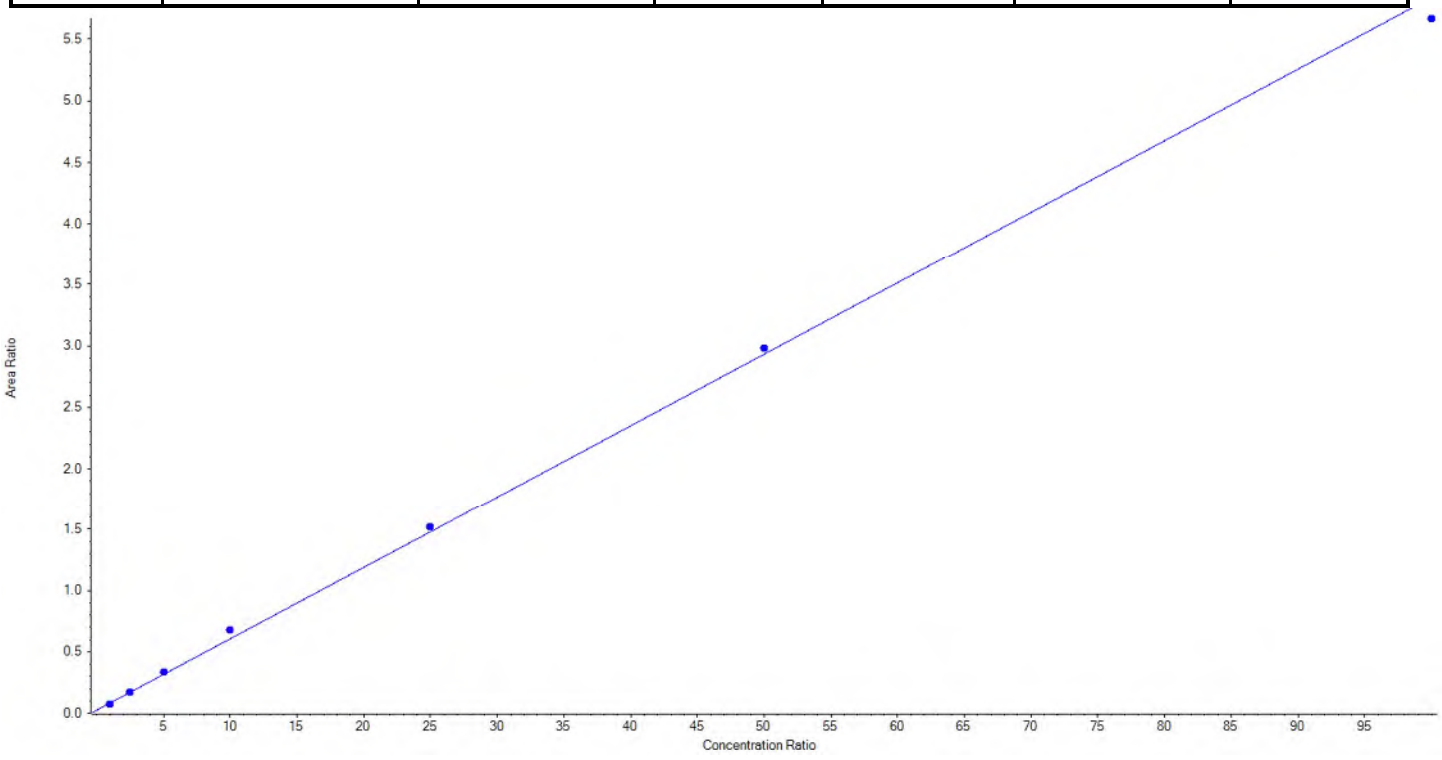
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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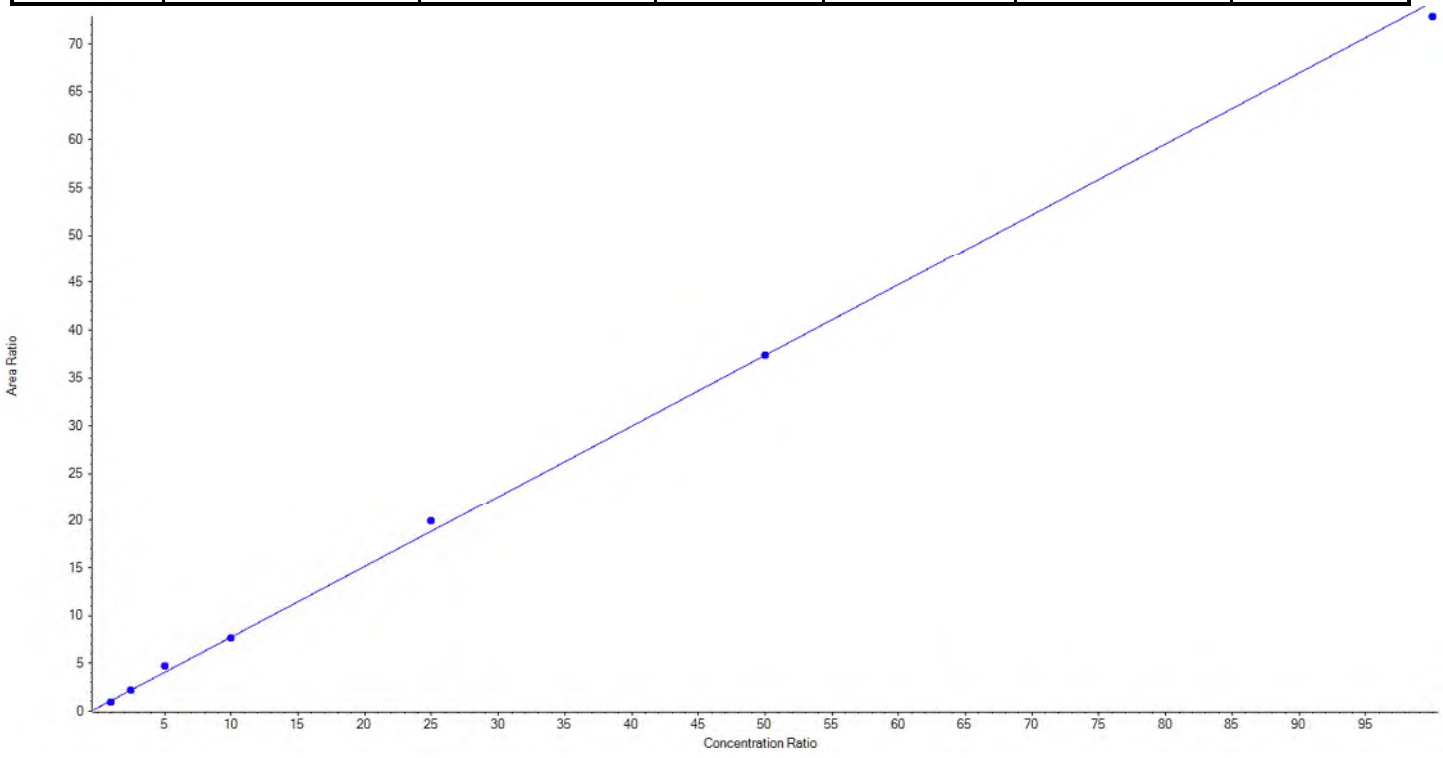
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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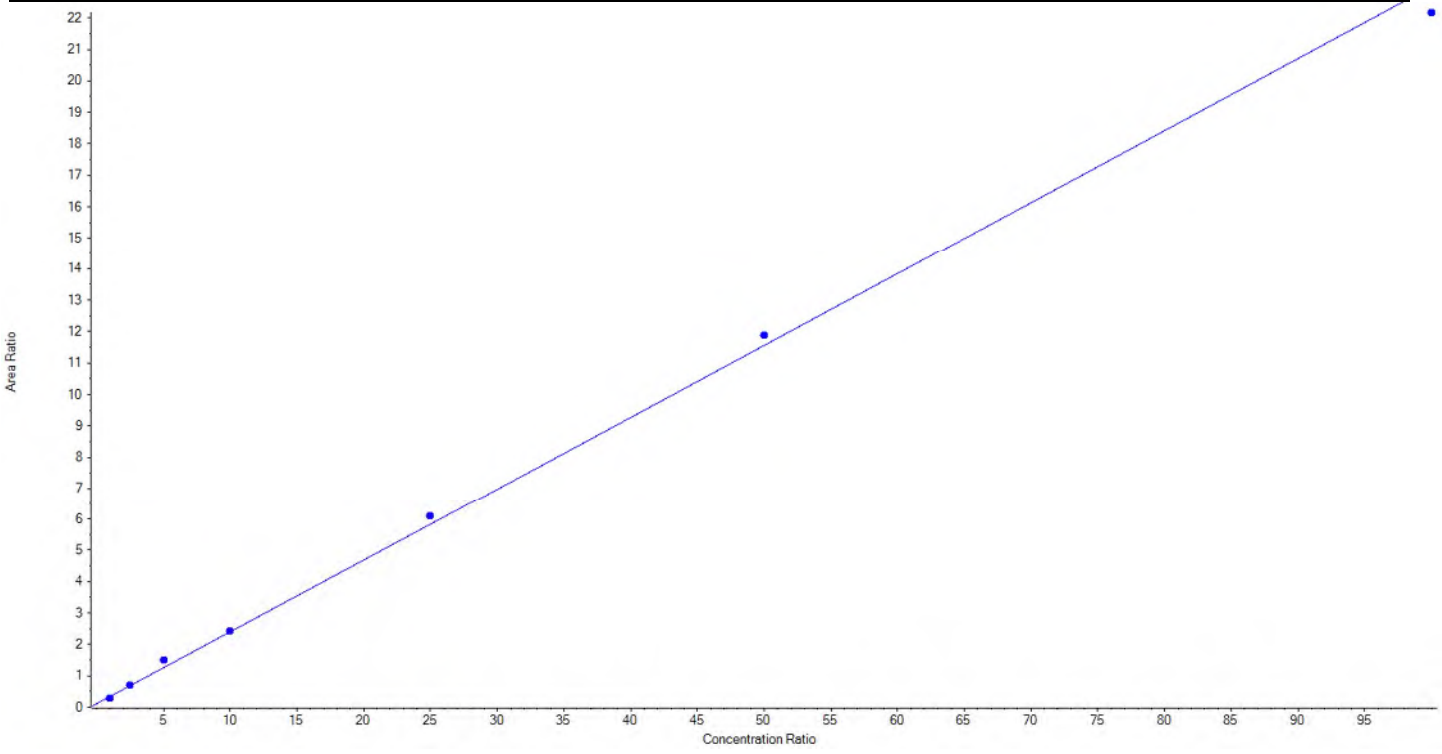
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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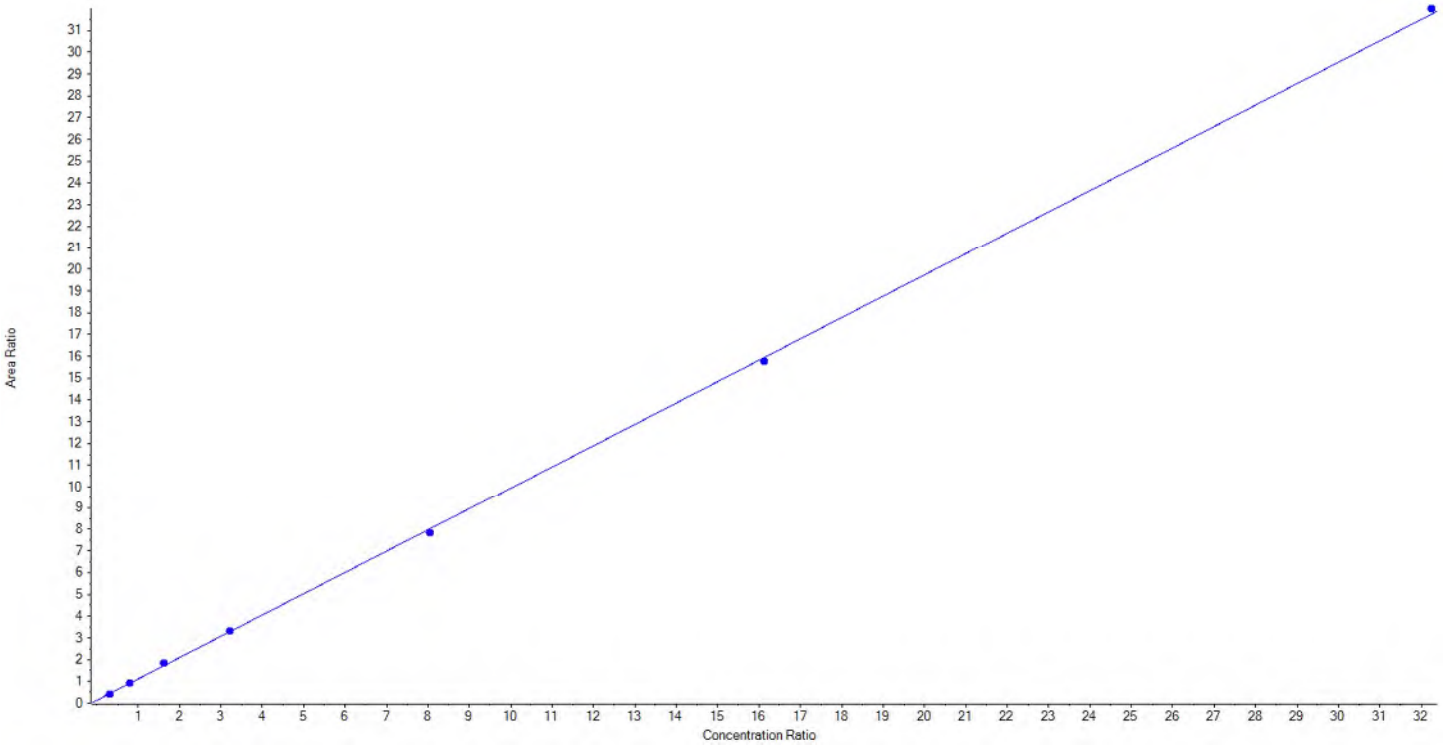
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.98015 x + 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



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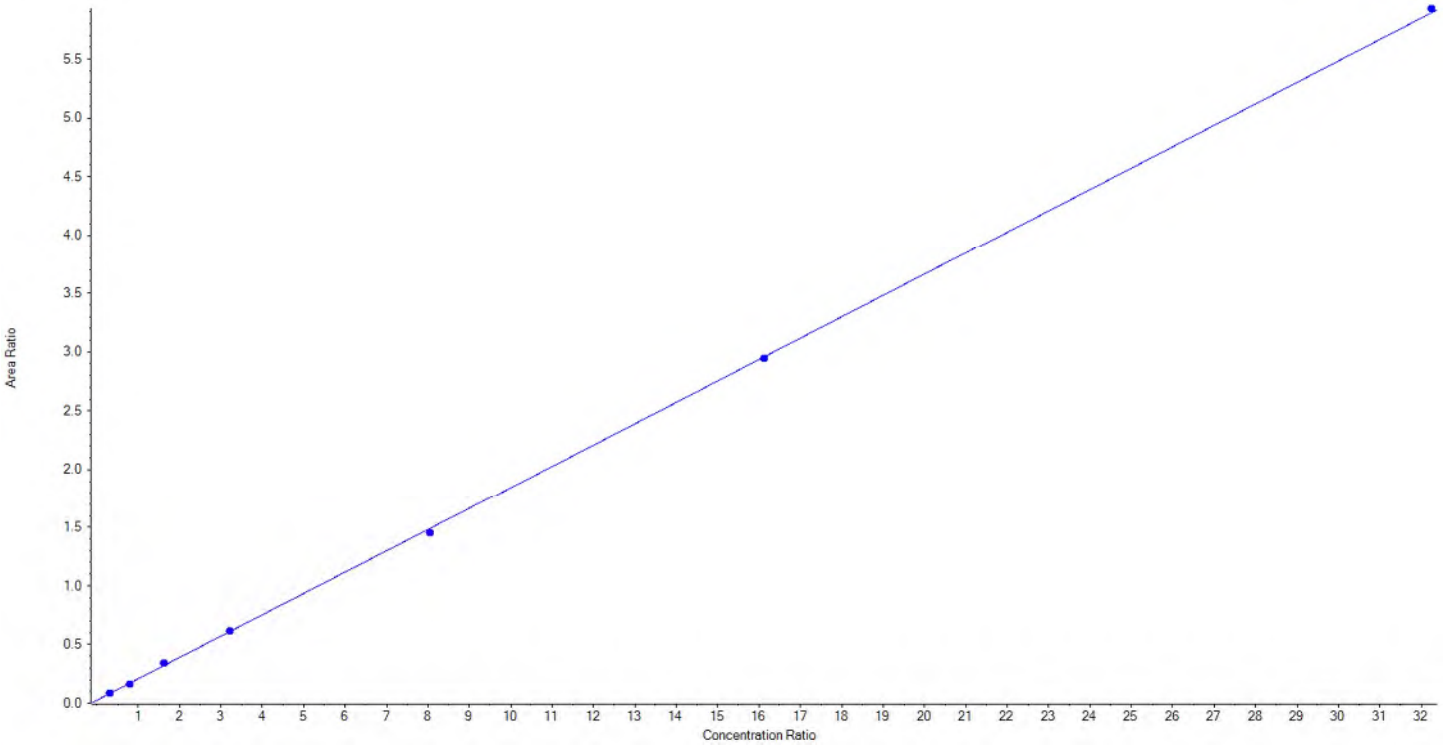
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.18192 x + 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



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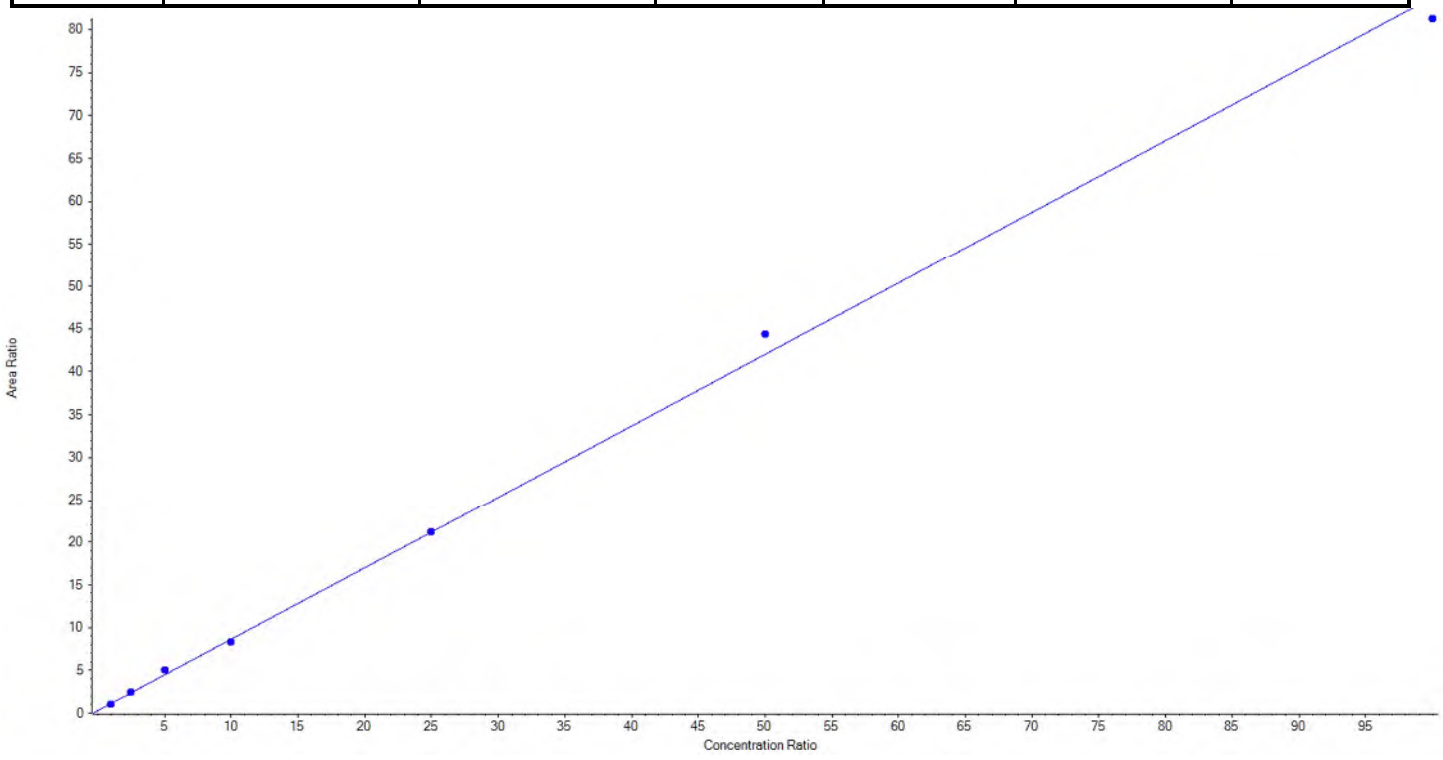
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.83461 x + 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



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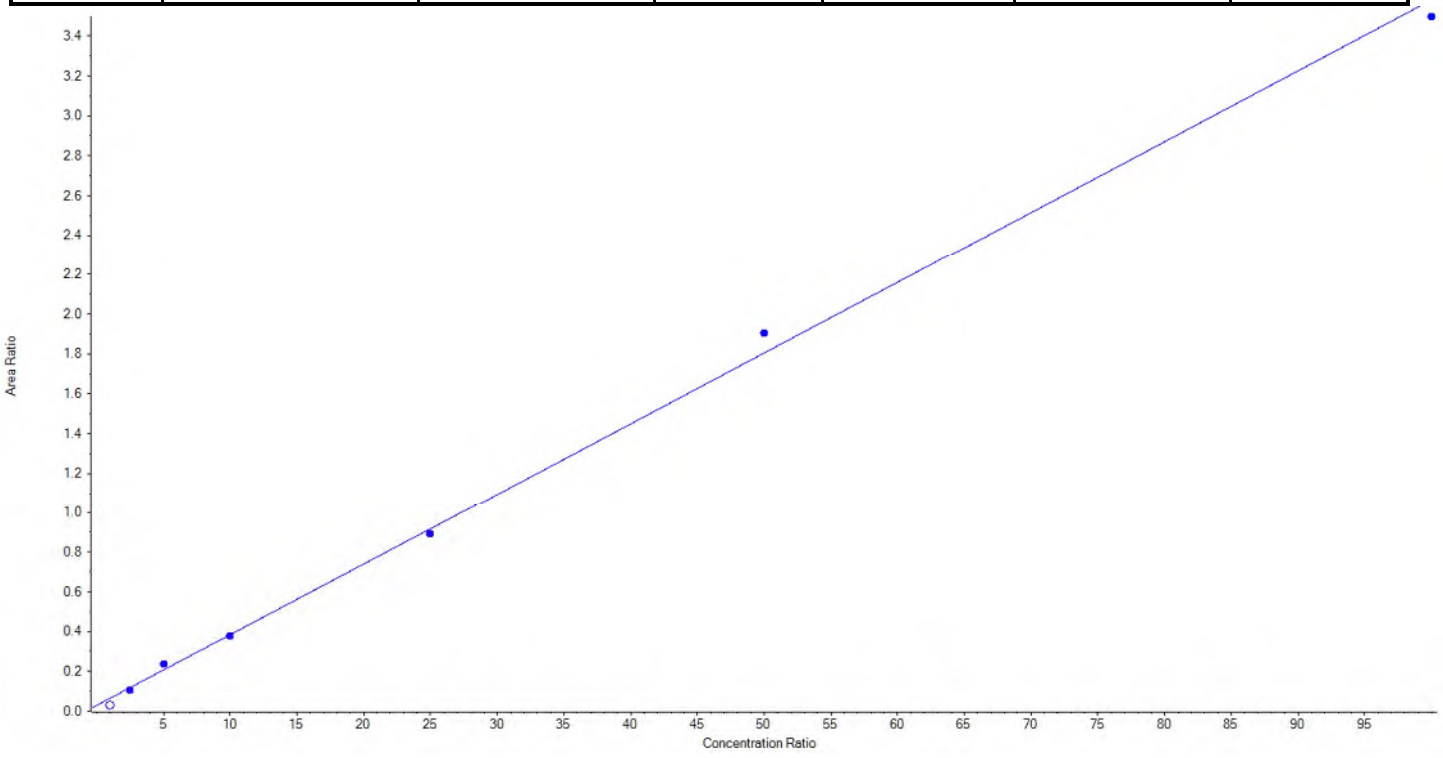
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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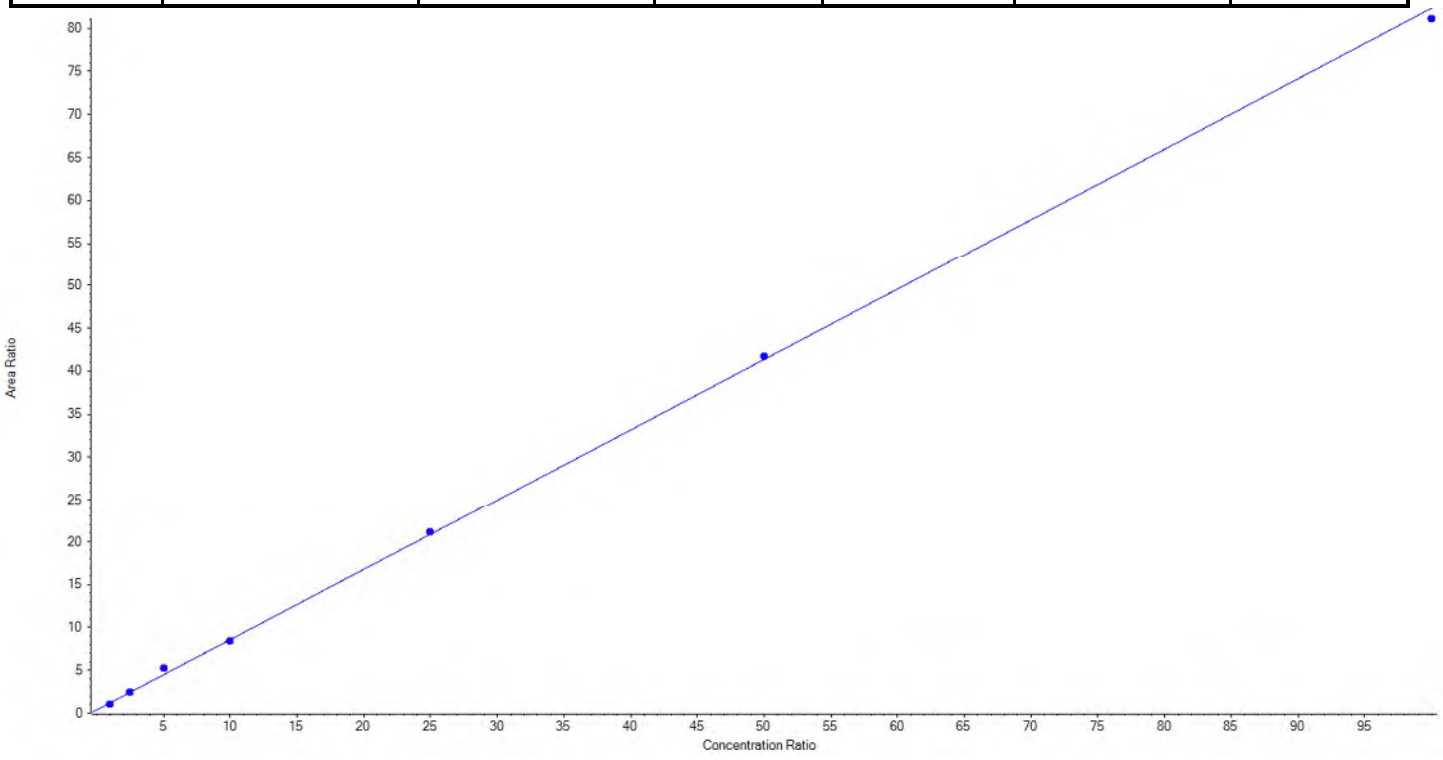
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.81955 x + 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



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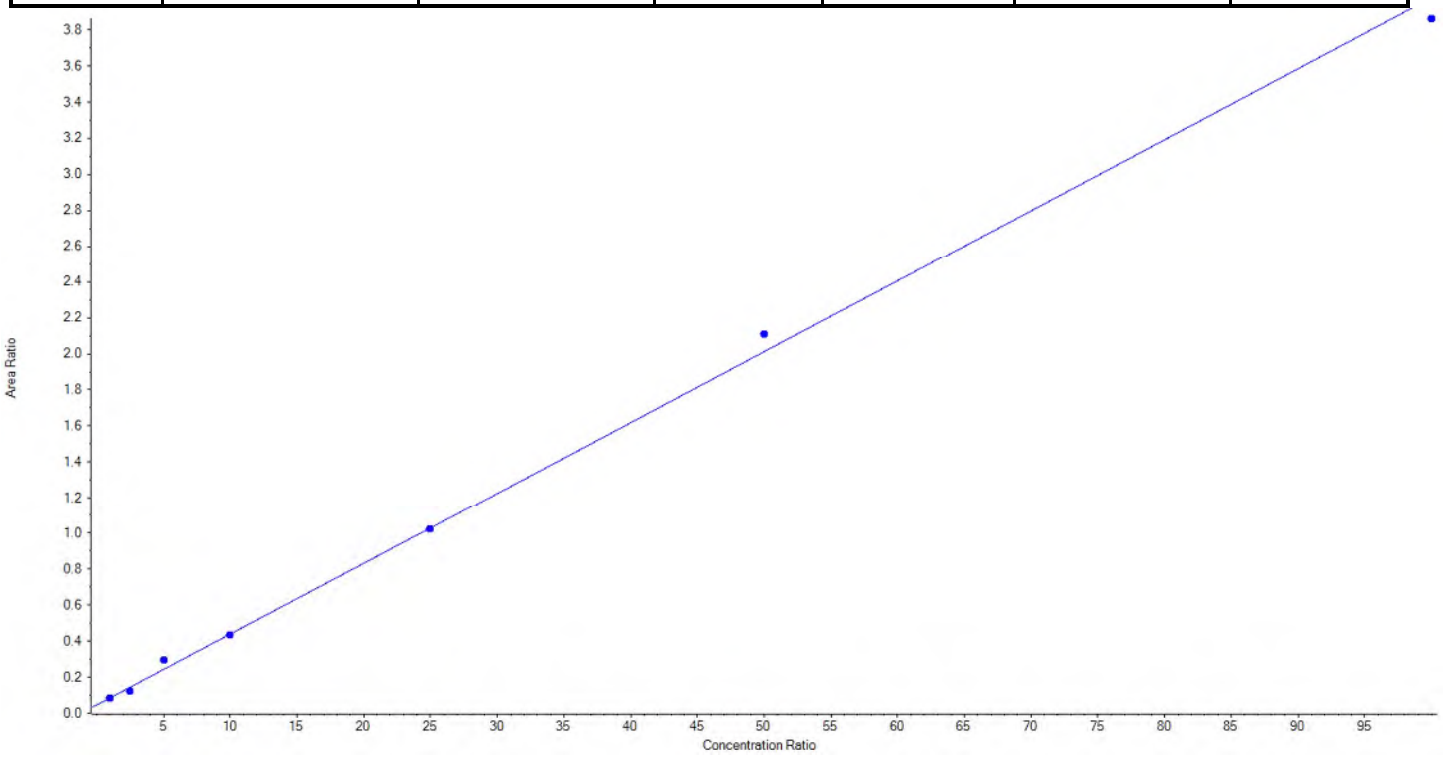
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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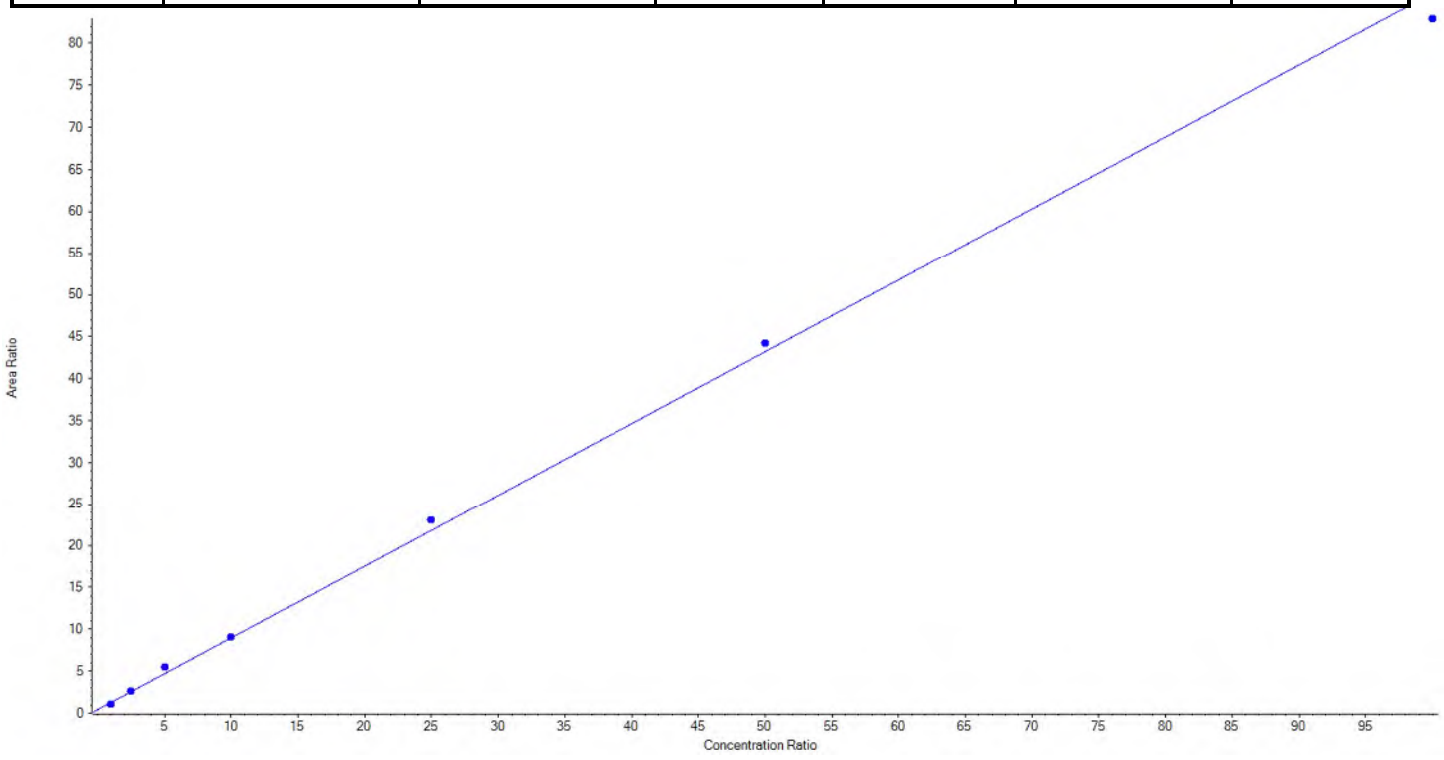
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

Analyte Name	PFDoA_1	**Data File**	08222018_DW.wiff
MRM Transition	613.0 / 569.0	**Result Table**	08232018_DW
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	8/22/2018 6:00:37 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.85553 x + 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



BATTELLE

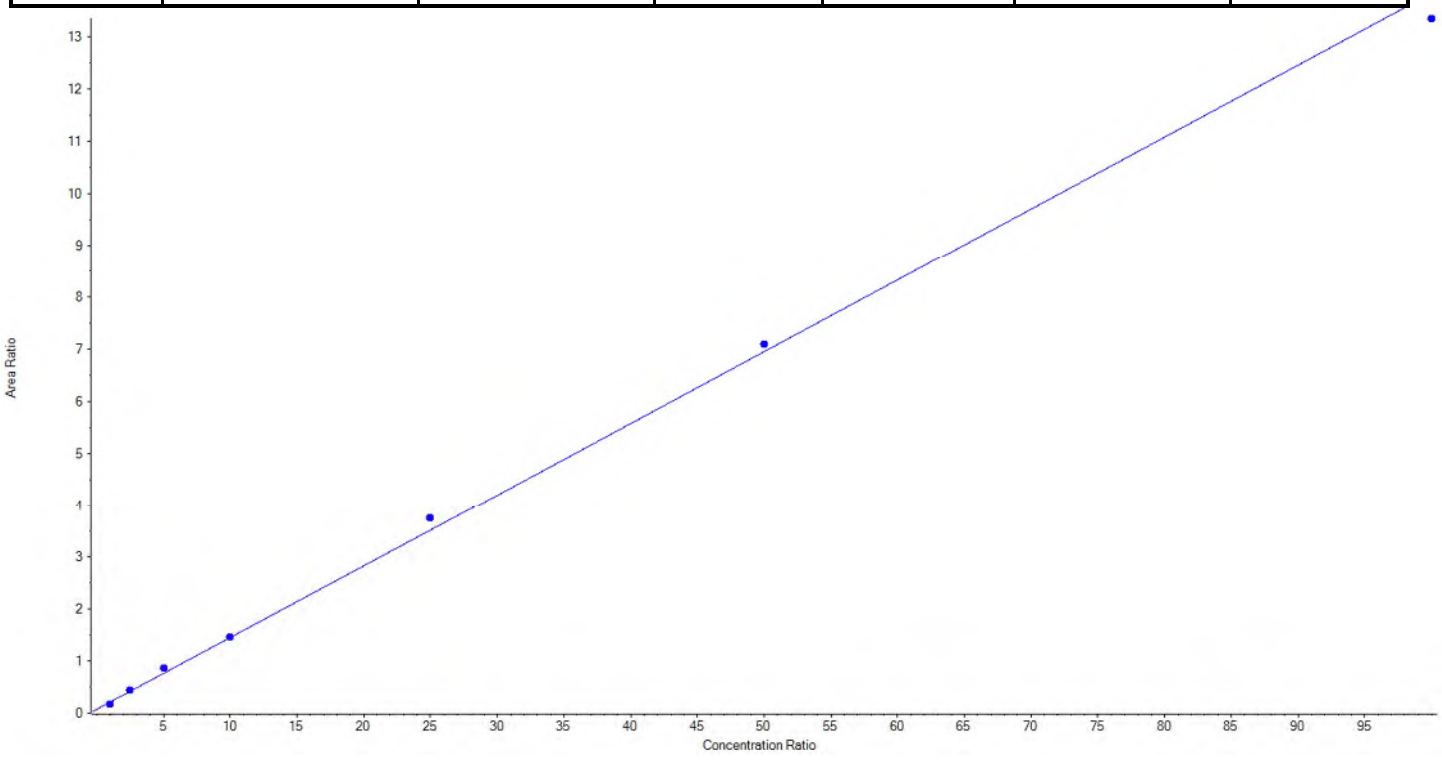
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

Analyte Name	PFDoA_2	**Data File**	08222018_DW.wiff
MRM Transition	613.0 / 319.0	**Result Table**	08232018_DW
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	8/22/2018 6:00:37 PM	**Acquisition Method**	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



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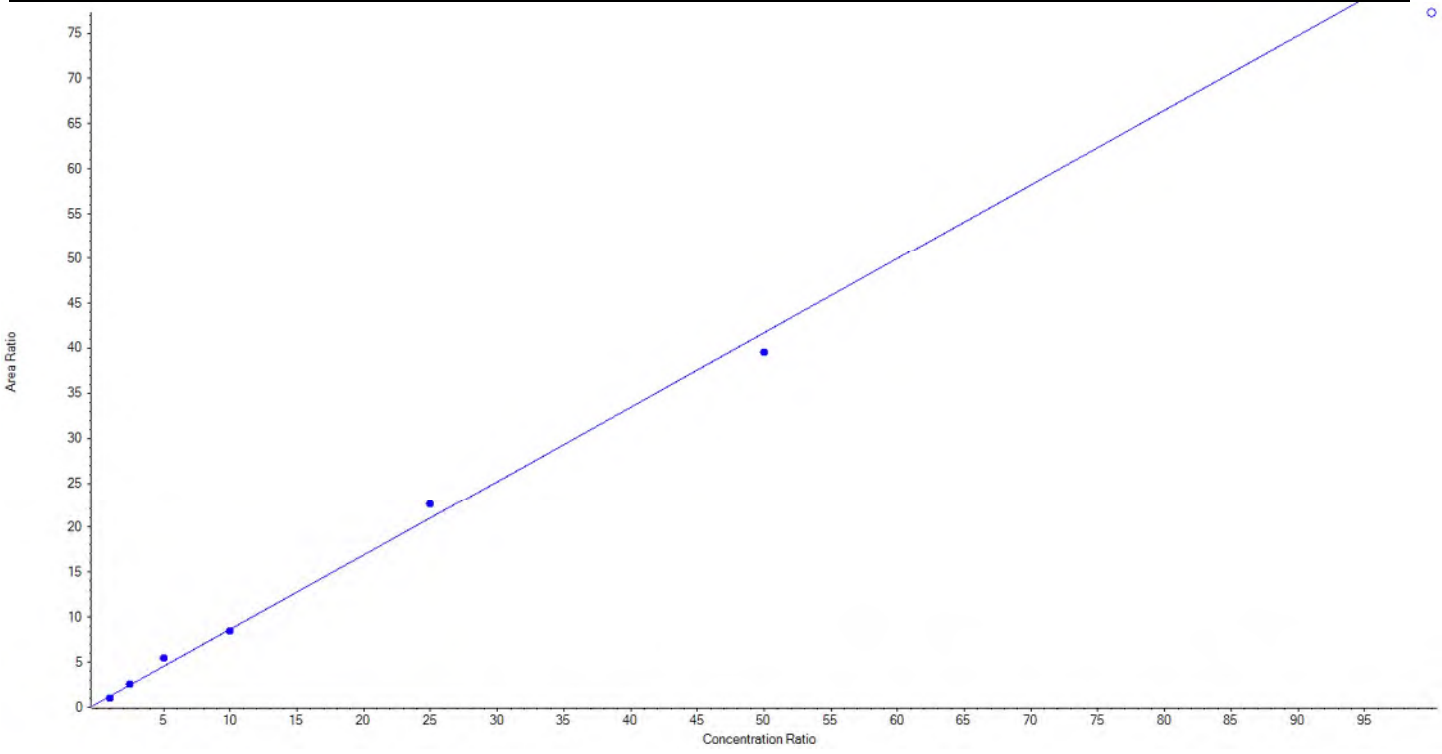
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.82600 x + 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



BATTELLE

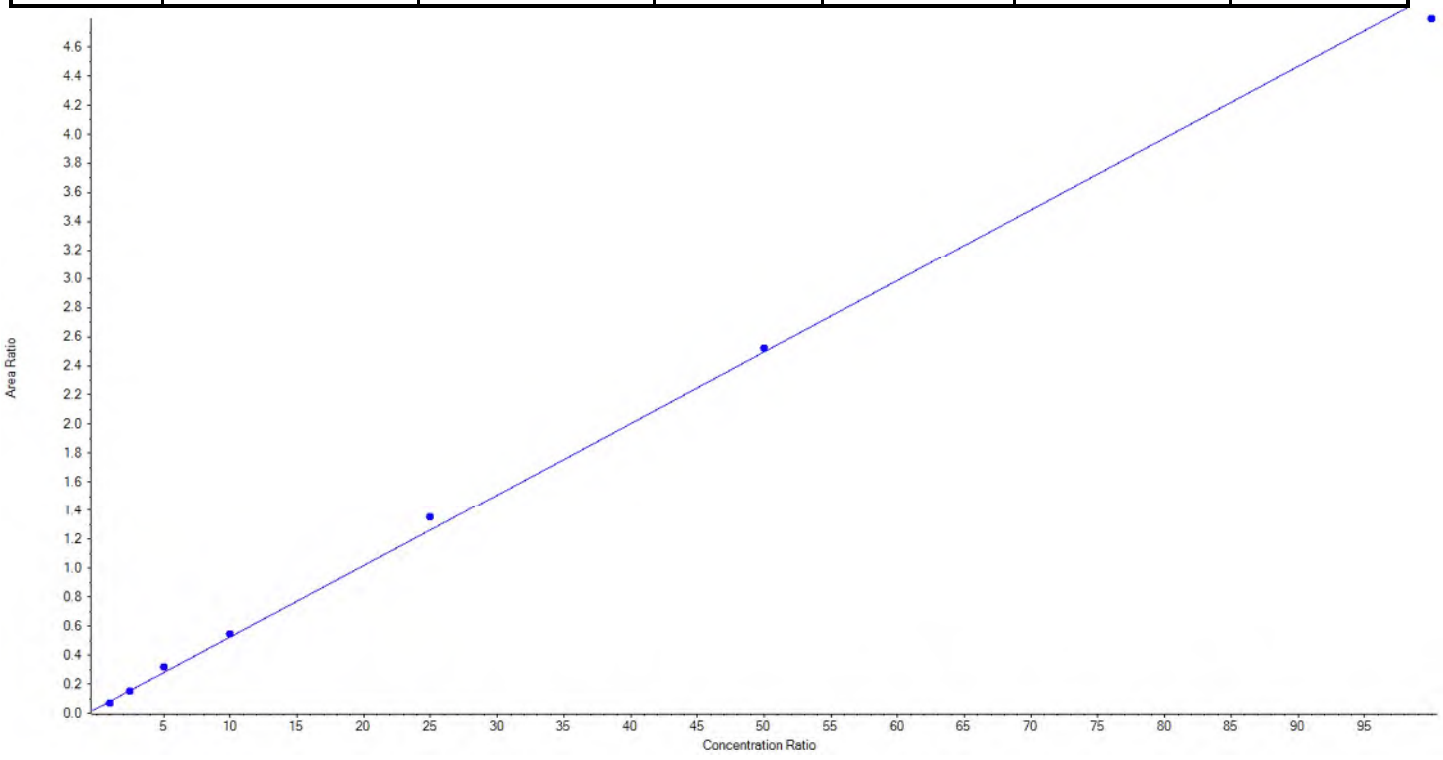
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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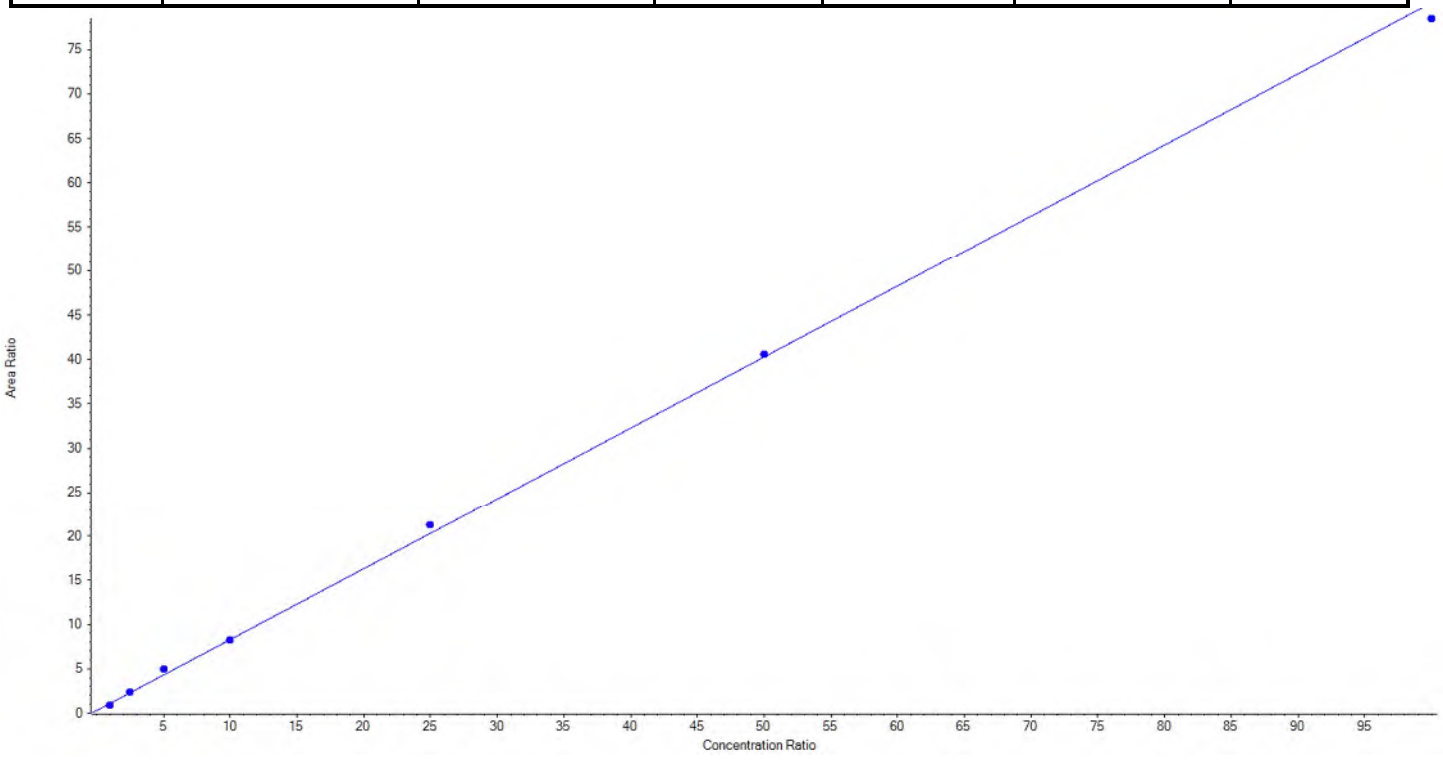
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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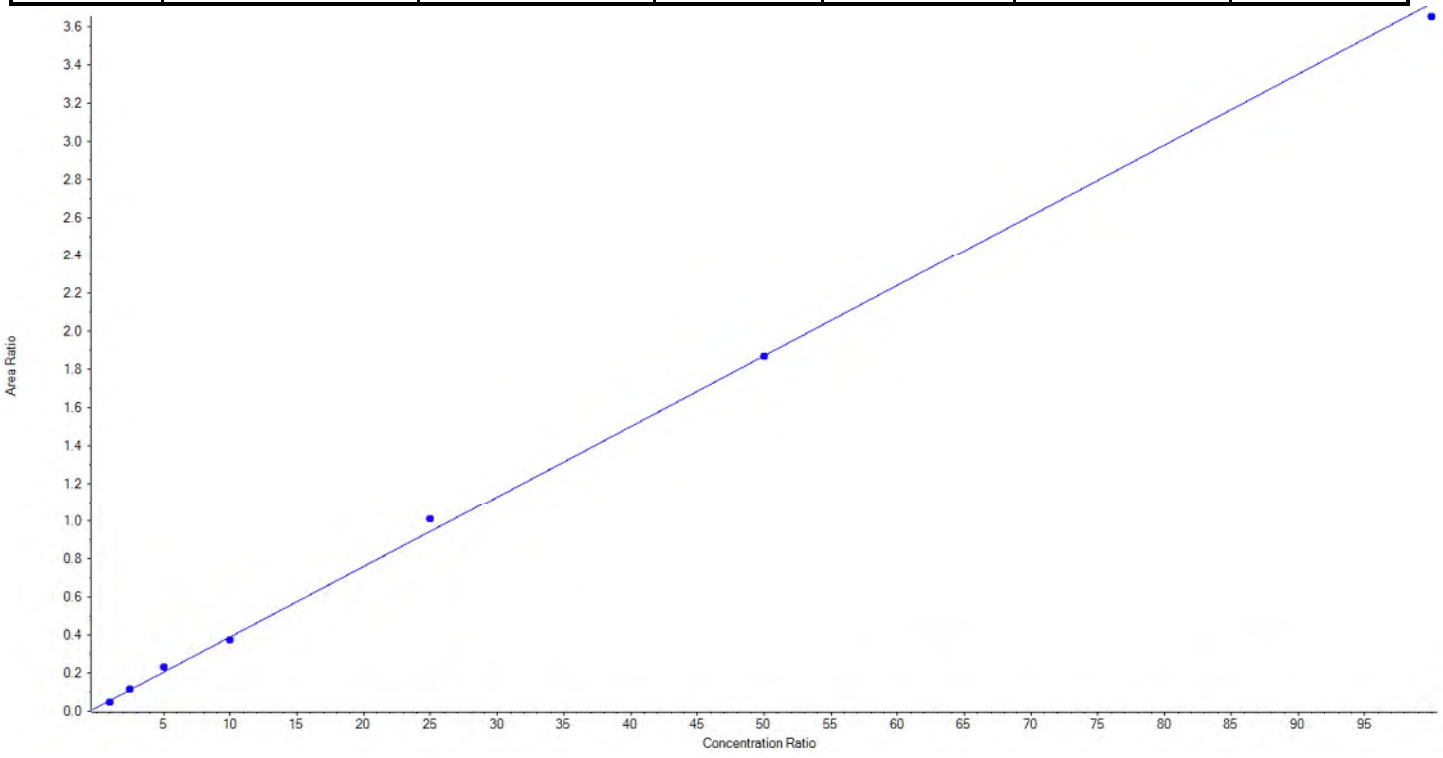
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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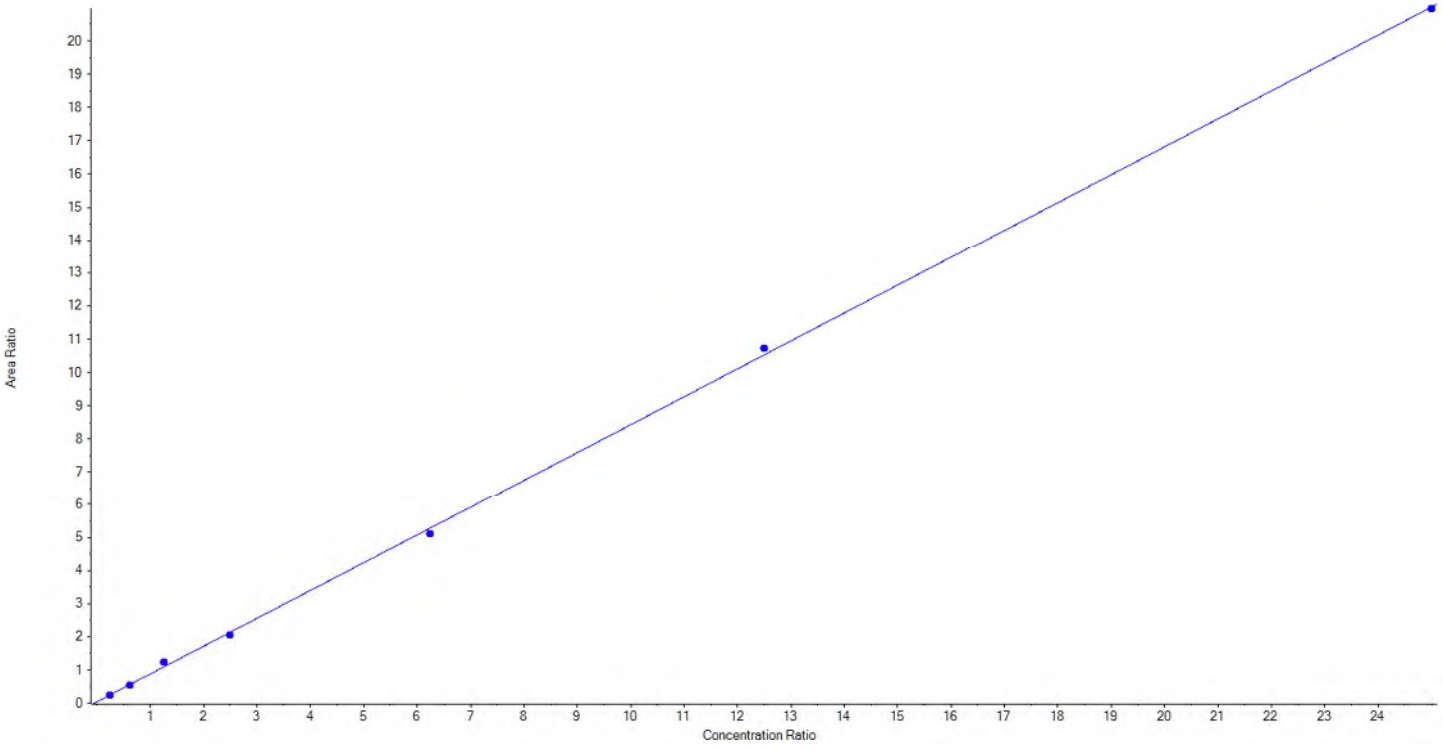
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.83899 x + 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



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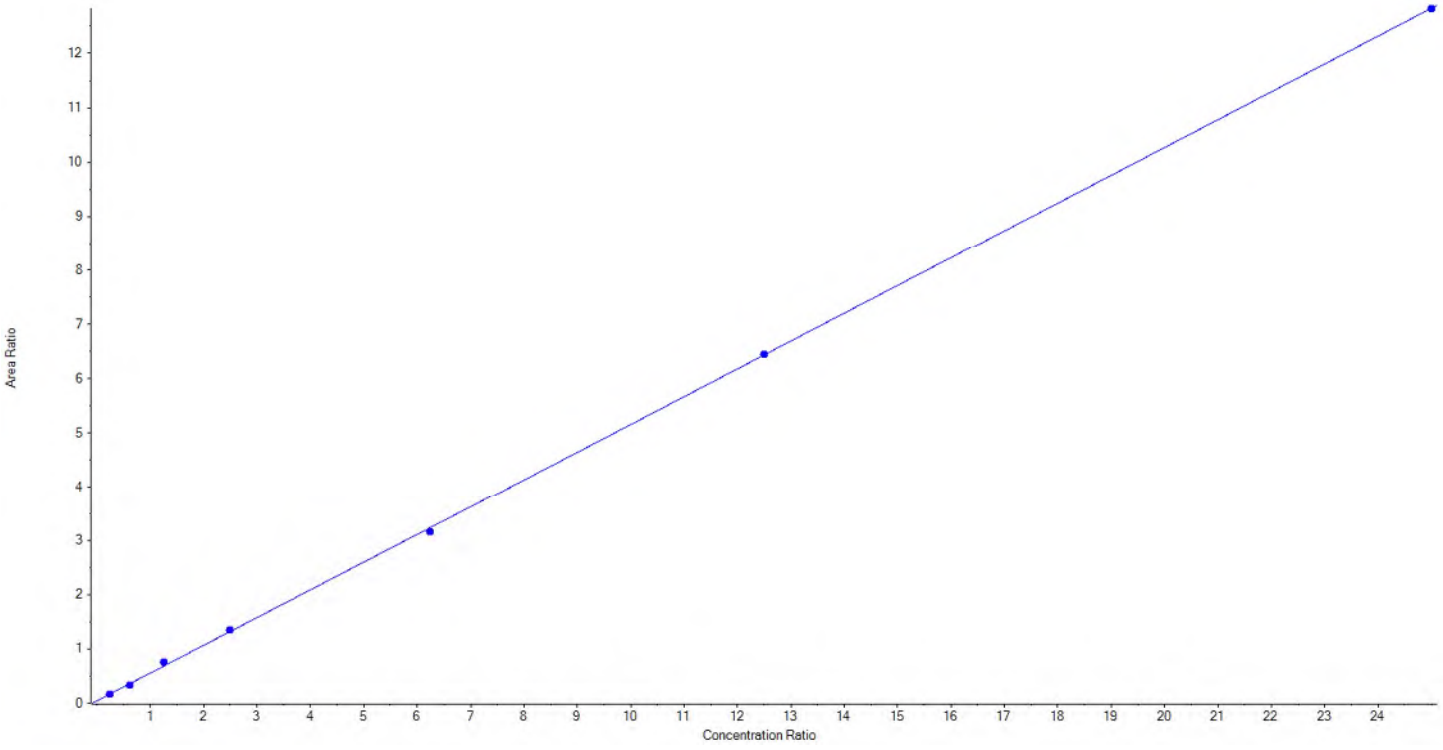
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.51145 x + 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



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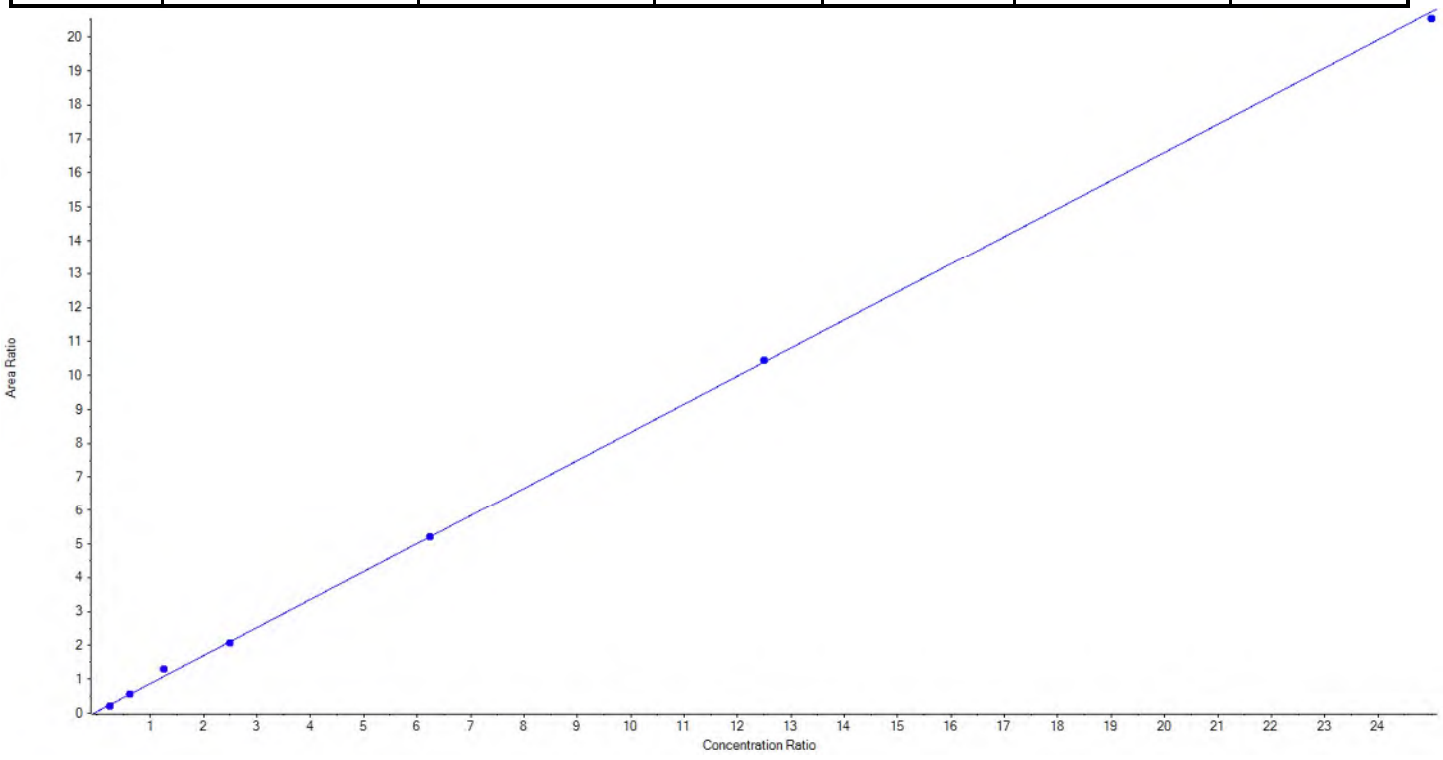
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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

Regression Equation: y = 0.82809 x + 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



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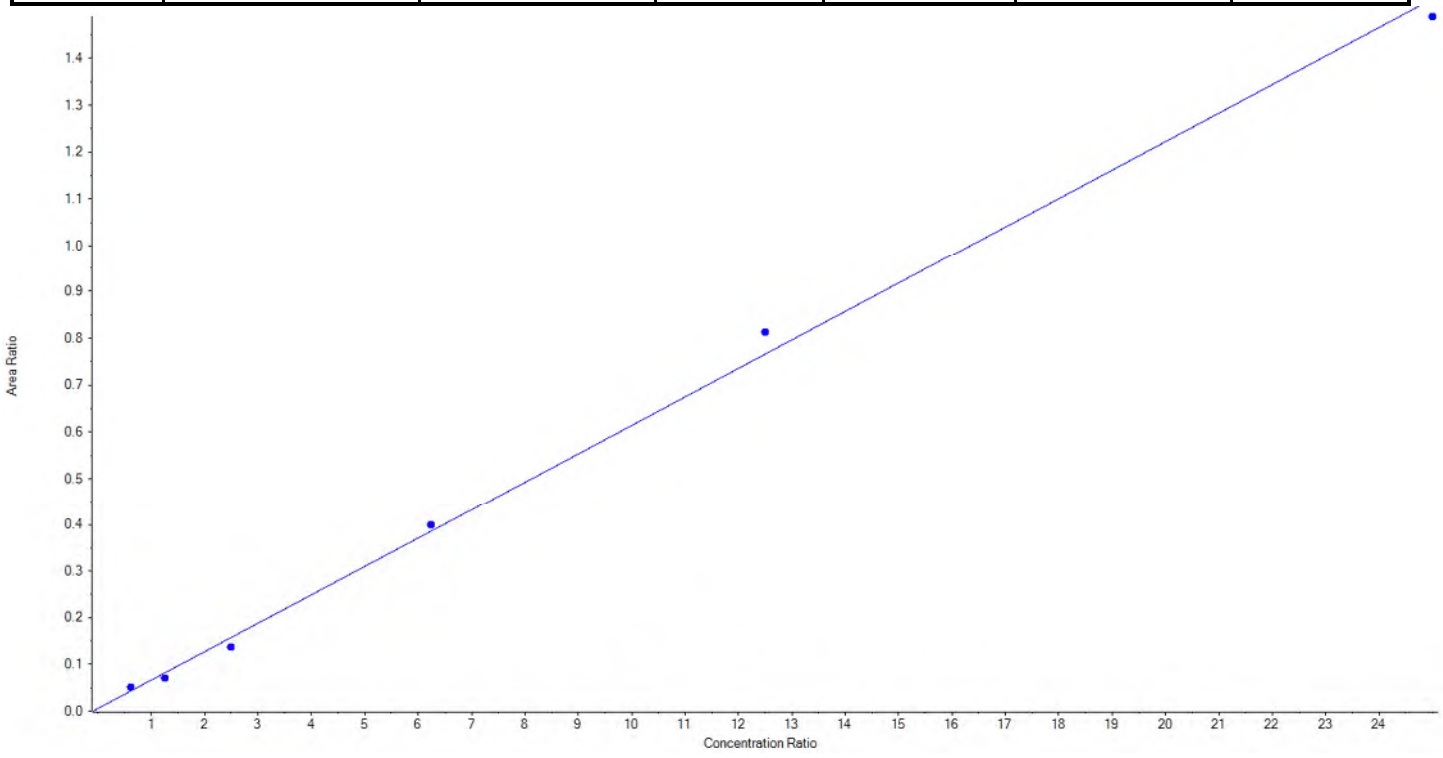
Calibration Summary Report

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



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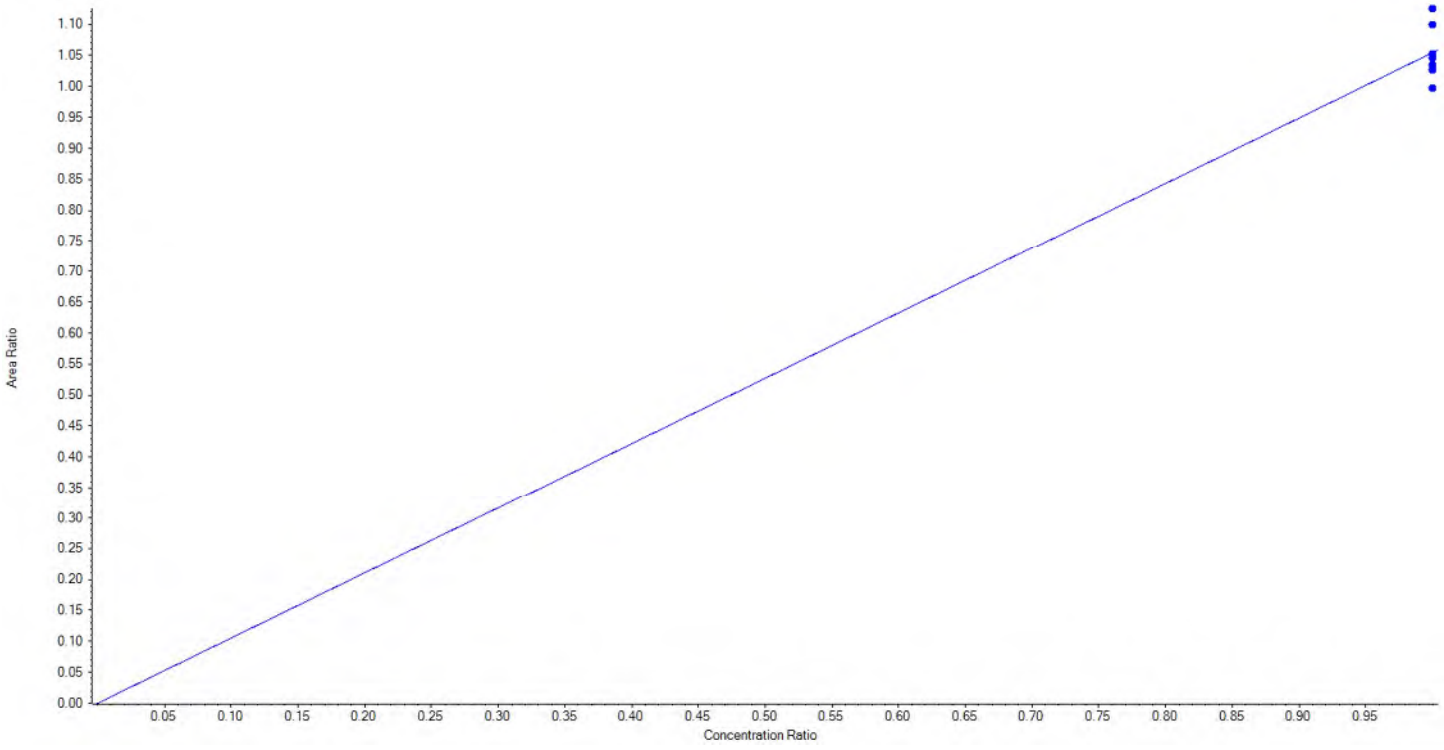
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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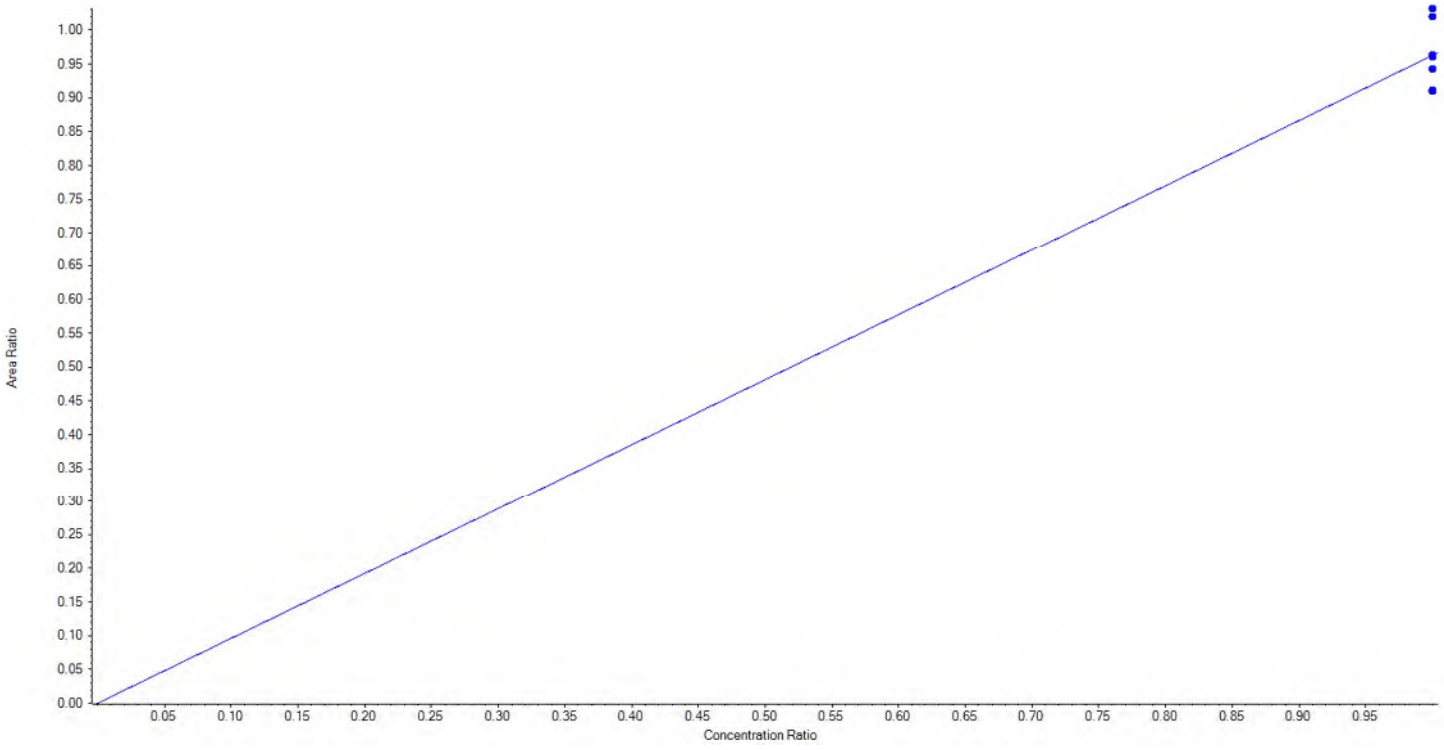
Calibration Summary Report

Created with Analyst Reporter
Printed: 23/08/2018 10:46:35 AM

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



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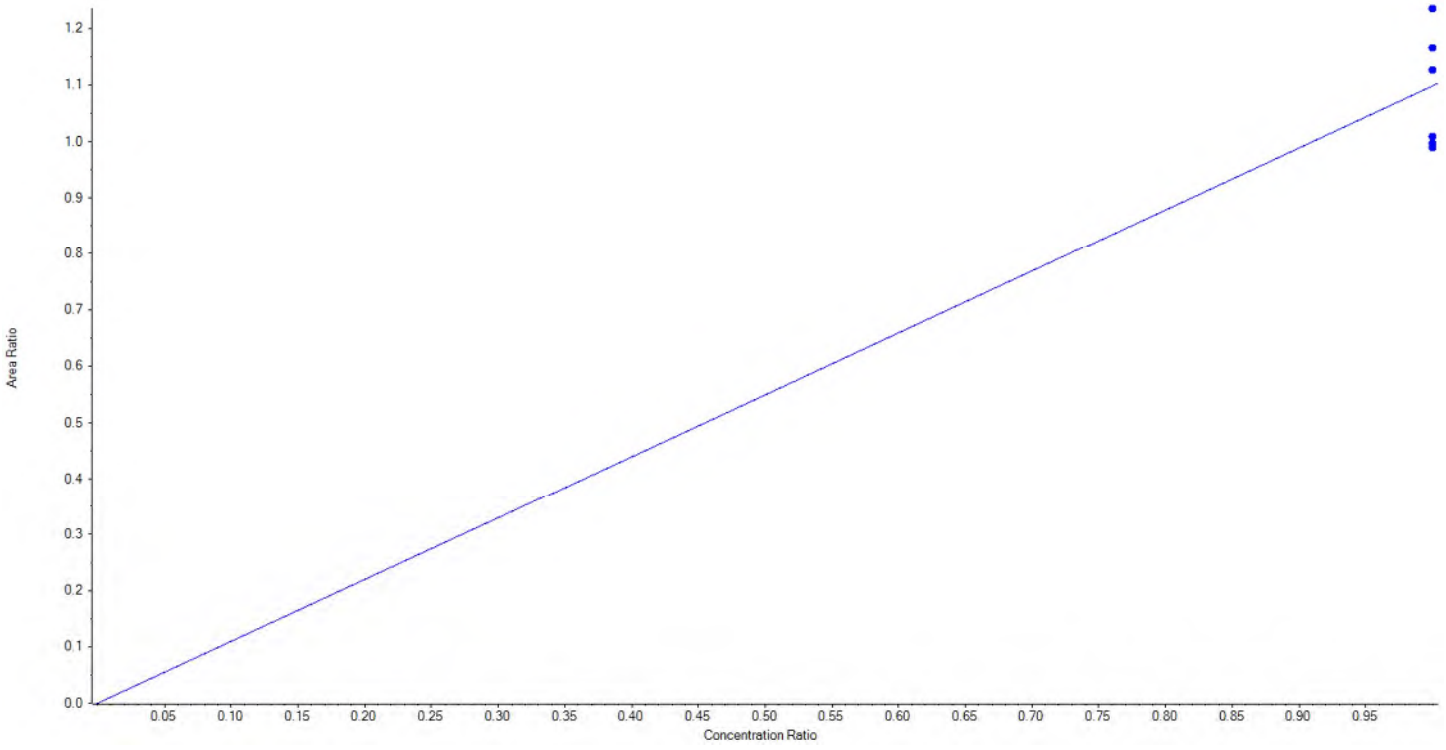
Calibration Summary Report

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



	Drinking Water Calibration Curve Concentrations (ng/L)								
	JZ78	JZ79	JZ80	JZ81	JZ82	JZ83	JZ84	JZ85	JZ86
PFHxA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFHpA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFOA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFNA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFUnA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDoA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTrDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTeDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NMeFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NEtFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFBS	22.15	44.30	88.60	221.50	443.00	885.00	2,212.50	4,425.00	8,850.00
PFHxS (branched)	22.80	45.60	91.20	228.00	456.00	912.00	2,280.00	4,560.00	9,120.00
PFOS (branched)	23.15	46.30	92.60	231.50	463.00	925.60	2,314.00	4,628.00	9,256.00
	Surrogates								
13C2-PFHxA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C2-PFDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
d5-EtFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Internal Standards								
13C2-PFOA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C4-PFOS	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00
d3-MeFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 23/08/2018 10:48:00 AM

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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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			

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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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

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Summary Ion Ratio Report

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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

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QC Summary Report

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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

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QC Summary Report

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Printed: 23/08/2018 10:50:26 AM

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
PFTrDA_1	663.0 / 619.0	3.59	547.893142	500.00	109.58
PFTrDA_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

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Summary Ion Ratio Report

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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
PFTrDA_1	663.0 / 619.0	3.68	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.68	PFTrDA	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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

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

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Summary Ion Ratio Report

Sample Name	CR631PB-FS(0)	**Injection Vial**	14
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T19:56:50	**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	1.77				
13C2-PFDA	515.0 / 470.0	2.83		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.11		N/A	N/A	ü

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Summary Ion Ratio Report

Sample Name	CR632LCS-FS(0)	**Injection Vial**	15
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:05:47	**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	0.296	0.297	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.077	0.080	ü
PFHpA_1	363.0 / 319.0	2.04	PFHpA			
PFHpA_2	363.0 / 169.0	2.03	PFHpA	0.019	0.020	ü
PFHxS_1	399.0 / 80.0	2.04	PFHxS			
PFHxS_2	399.0 / 99.0	2.04	PFHxS	0.287	0.299	ü
PFOA_1	413.0 / 369.0	2.28	PFOA			
PFOA_2	413.0 / 169.0	2.28	PFOA	0.068	0.068	ü
PFNA_1	463.0 / 419.0	2.53	PFNA			
PFNA_2	463.0 / 219.0	2.53	PFNA	0.313	0.310	ü
PFOS_1	499.0 / 80.0	2.52	PFOS			
PFOS_2	499.0 / 99.0	2.52	PFOS	0.216	0.186	ü
PFDA_1	513.0 / 469.0	2.80	PFDA			
PFDA_2	513.0 / 219.0	2.79	PFDA	0.045	0.044	ü
PFUnA_1	563.0 / 519.0	3.07	PFUnA			
PFUnA_2	563.0 / 269.0	3.07	PFUnA	0.050	0.055	ü
PFDoA_1	613.0 / 569.0	3.34	PFDoA			
PFDoA_2	613.0 / 319.0	3.34	PFDoA	0.163	0.163	ü
PFTrDA_1	663.0 / 619.0	3.60	PFTrDA			
PFTrDA_2	663.0 / 169.0	3.59	PFTrDA	0.064	0.063	ü
PFTeDA_1	713.0 / 669.0	3.83	PFTeDA			
PFTeDA_2	713.0 / 169.0	3.83	PFTeDA	0.047	0.048	ü
NMeFOSAA_1	570.0 / 419.0	2.93	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	2.93	NMeFOSAA	0.575	0.630	ü
NEtFOSAA_1	584.0 / 419.0	3.07	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.07	NEtFOSAA	0.061	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

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Summary Ion Ratio Report

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Sample Name	J7448-FS(0)	**Injection Vial**	16
Sample ID	JAX-RES-08152018-1015-34-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:14:44	**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	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.303	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	1.77				
13C2-PFDA	515.0 / 470.0	2.84		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.10		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J7450-FS(0)	**Injection Vial**	17
Sample ID	JAX-RES-08152018-1045-33-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:23:42	**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	2.93	PFNA	0.336	0.310	ü
PFOS_1	499.0 / 80.0	2.54	PFOS			
PFOS_2	499.0 / 99.0	2.54	PFOS	0.163	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	2.81		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.07		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J7452-FS(0)	**Injection Vial**	18
Sample ID	JAX-RES-08152018-1130-15-FRB	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-08-22T20:32:38	**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	2.94	PFNA	0.255	0.310	ü
PFOS_1	499.0 / 80.0	2.54	PFOS			
PFOS_2	499.0 / 99.0	2.53	PFOS	0.186	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	2.81		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.08		N/A	N/A	ü

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME
SOUTHEAST	JACKSONVILLE_NAS	18-0518							N6247016D9008	N6945017F0375	TETRA TECH, INC.	JAX-RES-08152018-1130-15-FRB
SOUTHEAST	JACKSONVILLE_NAS	18-0518							N6247016D9008	N6945017F0375	TETRA TECH, INC.	JAX-RES-08152018-1045-33-FRB
SOUTHEAST	JACKSONVILLE_NAS	18-0518							N6247016D9008	N6945017F0375	TETRA TECH, INC.	JAX-RES-08152018-1015-34-FRB

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC	RES_META_ID
SOUTHEAST	JACKSONVILLE_NAS	18-0518		Water for QC samples	QC Sample	15-Aug-18	537	Perfluoroalkyl Compounds	20190201100027.00
SOUTHEAST	JACKSONVILLE_NAS	18-0518		Water for QC samples	QC Sample	15-Aug-18	537	Perfluoroalkyl Compounds	20190201100027.00
SOUTHEAST	JACKSONVILLE_NAS	18-0518		Water for QC samples	QC Sample	15-Aug-18	537	Perfluoroalkyl Compounds	20190201100027.00