



**Off-Base Drinking Water Sample Results,
Level 4 Laboratory Report, Electronic Data Deliverable,
Data Validation Report, and the Sample Location Figure,
SDG 18-0523**

*Naval Air Station Jacksonville
Jacksonville, Florida*

July 2019

N00207_004452
NAS JACKSONVILLE, FL
SSIC 5000-33c

LABORATORY DATA PACKAGE 18-0523 NAS JACKSONVILLE FL
08/27/2018
BATTELLE

Approved for public release: distribution unlimited.

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

W

Batch 18-0523

Package DP-18-0235

Submitted to:

Tetra Tech

661 Anderson Drive Foster Plaza 7

Pittsburgh, PA 15220 USA

Submitted by:

Battelle Norwell Operations

141 Longwater Drive Suite 202

Norwell, MA 02061

BATTELLE

It can be done

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

W

Batch 18-0523

Package DP-18-0235

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
2018.08.27 09:20:14 -04'00'

QC Chemist Approval:



Digitally signed by devinec@battelle.org
DN: cn=devinec@battelle.org
Date: 2018.08.27 16:31:29 -04'00'

Project Manager Approval:



Digitally signed by Jonathan Thorn
Date: 2018.08.28 09:37:03 -04'00'

BATTELLE
It can be done

CTO-SE0375: Naval Air Station Jacksonville

Project No 100119154-SE0375

PFAS in drinking water

W

Batch 18-0523

Package DP-18-0235

1	<i>Work Plan</i> Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.	1
2	<i>Tables</i> Analytical Data Tables, Qualifier Definitions.	19
3	<i>Miscellaneous Documentation</i> Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.	27
4	<i>Sample Preparation Records</i> Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.	129
5	<i>Analytical Calibrations</i> Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check.	141
6	<i>Analytical Data</i> Raw Data Quantification Reports.	204
7	<i>Chromatograms</i> Sample And Standard Chromatograms.	223
8	<i>Unused Data</i>	NA

BATTELLE

It can be done

Sample Summary

Client: Tetra Tech Inc.


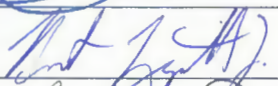



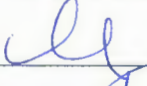
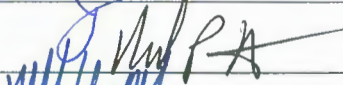

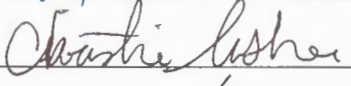
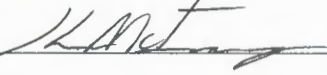
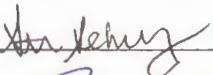

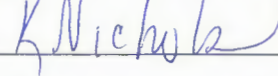

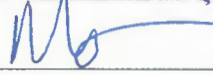

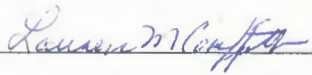
SDG: 18-0523

Project/Site: Naval Air Station (NAS) Jacksonville

CTO: SE0375

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Receipt Date
CR649PB-FS	Procedural Blank	WATER	8/23/2018	8/23/2018
CR650LCS-FS	Laboratory Control Sample	WATER	8/23/2018	8/23/2018
J7566-FS	JAX-RES-08212018-0945-11	W	8/21/2018	8/22/2018
J7568-FS	JAX-RES-08212018-1130-10	W	8/21/2018	8/22/2018
J7570-FS	JAX-RES-08212018-1330-36	W	8/21/2018	8/22/2018

Signature Page

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

Work Plan



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

1.0 GENERAL PROJECT INFORMATION

Project Title: CTO-SE0375: Drinking Water Analysis
Project Number: 100119154-SE0375
Client: Tetra Tech
 661 Anderson Drive Foster Plaza 7
 Pittsburgh, PA 15220
 USA

Client Contact Information: Mark Peterson
 Project Manager
 (904) 636-6125(V)
 (904) 636-6165(F)
 mark.peterson@tetrattech.com

Effective Date of QAPP: 8/14/2018
Version Number: 100119154-SE0375(L)-03
Project Manager: Thorn, Jonathan
Laboratory Task Manager: Thorn, Jonathan
Deliverable Due Date: 8/21/2018

2.0 SCOPE OF WORK

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

2.1 TECHNICAL APPROACH

2.1.1 Sample Receipt, Storage, and Handling

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

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



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

2.1.2 Sample Preparation

Samples to arrive over a period of weeks.

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

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

Table 1: Quality Control Samples

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

2.1.3 Extraction/Preparation

2.1.3.1 Extraction

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

Table 2: SIS and LCS/MS Spiking Level

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



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

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

- 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.



It can be done

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:	<ul style="list-style-type: none"> • 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



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

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.



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 1: Target Samples

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

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

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

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

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

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
-----	---------	-------------------	------------------	---------	-------------------	-----------	-----	-----------



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

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

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

Shipment: SHP-180821-01
Status: Pending
Description: NAS JAX PFAS
Range: J7558-J7563
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7558	JAX-RES-08202018-0945-25	08/20/2018 9:45 am	W	R0119 (NA)			
2	J7560	JAX-RES-08202018-1100-26	08/20/2018 11:00 am	W	R0119 (NA)			
3	J7561	JAX-RES-08202018-1100-26-FRB	08/20/2018 11:00 am	W	R0119 (NA)			
4	J7562	JAX-RES-08202018-1310-28	08/20/2018 1:10 pm	W	R0119 (NA)			
5	J7563	JAX-RES-08202018-1310-28-FRB	08/20/2018 1:10 pm	W	R0119 (NA)			

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

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



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

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

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
3	J7570	JAX-RES-08212018-1330-36	08/21/2018 1:30 pm	W	R0119 (NA)			

Shipment: SHP-180823-02
Status: Pending
Description: NAS JAX PFAS
Range: J7585-J7587
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7585	JAX-RES-08222018-1000-35	08/22/2018 10:00 am	W	R0119 (NA)			
2	J7587	JAX-RES-08222018-1000-35-FD	08/22/2018 10:00 am	W	R0119 (NA)			



It can be done

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 analyzed 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 Substitution:	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	PFTTrDA	T	13C2-PFOA		No	No
9	Perfluoro-n-tetradecanoic acid	PFTeDA	T	13C2-PFOA		No	No
10	N-methylperfluoro-1-octanesulfonamidoacetic acid	NMeFOSAA	T	d3-MeFOSAA		No	No
11	N-ethylperfluoro-octanesulfonamidoacetic acid	NEtFOSAA	T	d3-MeFOSAA		No	No
12	Perfluoro-1-butanefulfonate	PFBS	T	13C4-PFOS		No	No
13	Perfluoro-1-octanesulfonate	PFOS	T	13C4-PFOS		No	No
14	Perfluoro-1-hexanesulfonate	PFHxS	T	13C4-PFOS		No	No
1	13C2-PFHxA	13C2-PFHxA	SIS			No	No
2	13C2-PFDA	13C2-PFDA	SIS			No	No



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

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



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_371

ICAL Acceptance Criteria:

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

Continuing Calibration Verification Criteria:

CCV Name: Standard

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

Independent Calibration Verification:

ICC Name: Standard

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

Mass Discrimination Criteria:

None

Degradation Check Criteria:

None



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application	<i>Universal_LC</i>		
MQO:	Acceptance Criteria	Qual:	Corrective Action:
Procedural Blank	Samples must be greater than five times the blank concentration (>5xPB).	B	Review with Project Manager; re-analyze or justify results in project records.
PB Measurement Quality Objective	Organic results in the Procedural Blank are less than 1/2 times the LOQ (<1/2xLOQ)	N	Review with Project Manager; re-analyze or justify results in project records.
Laboratory Control Sample	Recovery values 70-130%.	N	Review with project manager; re-analyze or justify reporting the results in project records.
Matrix Spike / Matrix Spike Duplicate Recovery	Organics 70-130%. Analyte concentration in MS/MSD must be greater than five times reported background concentration.	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	



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

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

ShpNo SHP-180822-02

It can be done

Battelle Project No: _____

Sample Receipt Form

Approved: Authorized Project Number: 112G08005-SE075Client: Tetra TechReceived by: Schumitz, MattDate/Time Received: Wednesday, August 22, 2018 11:00 AMNo. of Shipping Containers: 1**SHIPMENT**Method of Delivery: Commercial CarrierTracking Number: 7824 0682 5520COC 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	7824 0682 5520	Custody Seal	Intact	Intact	Therm_1	1.3	6

Samples

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

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

Condition of Samples: Sample containers intact
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.3 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: J7566 - J7571

Samples logged in by: Schumitz, Matt Date/Time: 08/22/2018 11:00 AM

Approved By: _____ Approved On: _____

Authorized By: _____ Authorized On: _____



It can be done

ShpNo SHP-180822-02

Battelle Project No: _____

Sample Receipt Form Details

Approved: Authorized Project Number: 112GO8005-SE075Client: Tetra TechReceived by: Schumitz, MattDate/Time Received: Wednesday, August 22, 2018 11:00 AMNo. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J7566	JAX-RES-08212018-0945-11	08/21/18 9:45	08/22/18 13:28	2	W	1.3	NA	NA	NA	R0119 (NA)			
J7567	JAX-RES-08212018-0945-11-FRB	08/21/18 9:45	08/22/18 13:28	1	W	1.3	NA	NA	NA	R0119 (NA)			
J7568	JAX-RES-08212018-1130-10	08/21/18 11:30	08/22/18 13:28	2	W	1.3	NA	NA	NA	R0119 (NA)			
J7569	JAX-RES-08212018-1130-10-FRB	08/21/18 11:30	08/22/18 13:28	1	W	1.3	NA	NA	NA	R0119 (NA)			
J7570	JAX-RES-08212018-1330-36	08/21/18 13:30	08/22/18 13:28	2	W	1.3	NA	NA	NA	R0119 (NA)			
J7571	JAX-RES-08212018-1330-36-FRB	08/21/18 13:30	08/22/18 13:29	1	W	1.3	NA	NA	NA	R0119 (NA)			

Total Samples: 6

BATTELLE It can be done		Chain-of-Custody							
<u>Client Contact Information</u> Tetra Tech		Project Manager: <u>Mark Peterson</u> Sampler Information (print name): <u>David Seifner</u> Phone: <u>904.334.7260</u> Email: _____			Sampling Site: <u>Residents</u>		Site Information: <u>Potable Wells</u>		
Project Name: <u>PFAS EVAL</u> Project No.: <u>112608005 - SEQ375</u>		Turnaround Time (TAT) Requested: _____ Normal <input checked="" type="checkbox"/> Priority <input type="checkbox"/> RUSH <input type="checkbox"/>			Preservative <u>TriZolam</u> Analysis <u>PFAS</u>		COC # <u>045</u>		
Time Zone: _____		Page# <u>1 of 1</u>							
Sample Identification	2018 Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.				
<u>J7564 JAX-RES-08212018-0945-11</u>	<u>8/21</u>	<u>0945</u>	<u>G</u>	<u>W</u>	<u>2</u>	<u>2</u>			
<u>J7567 JAX-RES-08212018-0945-11-FRB</u>	<u>8/21</u>	<u>0945</u>	<u>G</u>	<u>W</u>	<u>1</u>	<u>1</u>			
<u>J7568 JAX-RES-08212018-1130-10</u>	<u>8/21</u>	<u>1130</u>	<u>G</u>	<u>W</u>	<u>2</u>	<u>2</u>			
<u>J7569 JAX-RES-08212018-1130-10-FRB</u>	<u>8/21</u>	<u>1130</u>	<u>G</u>	<u>W</u>	<u>1</u>	<u>1</u>			
<u>J7570 JAX-RES-08212018-1330-36</u>	<u>8/21</u>	<u>1330</u>	<u>G</u>	<u>W</u>	<u>2</u>	<u>2</u>			
<u>J7571 JAX-RES-08212018-1330-36-FRB</u>	<u>8/21</u>	<u>1330</u>	<u>G</u>	<u>W</u>	<u>1</u>	<u>1</u>		<u>AG</u>	
Receipt Temperature: (°C) _____		Samples Intact: Yes - No _____			Samples on Ice: Yes - No _____			Receipt Comments: _____	
Relinquished by (Print/Sign): <u>David Seifner / dls</u>		Company: <u>Tetra Tech</u>		Date/Time: <u>8-21-18 1430</u>		Received by (Print/Sign): <u>FCA Ex</u>		Company: _____ Date/Time: _____	
Relinquished by (Print/Sign): _____		Company: _____		Date/Time: _____		Received by (Print/Sign): <u>ME</u>		Company: <u>Battelle</u> Date/Time: <u>8-22-18 1100</u>	
Relinquished by (Print/Sign): _____		Company: _____		Date/Time: _____		Received by (Print/Sign): _____		Company: _____ Date/Time: _____	
Comments: <u>All Potable water samples Cool 4°C</u>									

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

640 PHILIPS HWY STE 16

JACKSONVILLE, FL 32256
UNITED STATES US

SHIP DATE: 21AUG18
ACTWGT: 56.40 LB
CAD: 006994661/SSFE1904
DIMS: 23x14x13 IN

BILL THIRD PARTY

SAMPLE REC
BATTELLE
141 LONGWATER DR
STE 202
NORWELLS MA 02061

8-22-18 11:00
MDS
1.3
Them

781 681-5588

REF:

DEPT:



FedEx
Express



J182711808150110

TRK# 7824 0682 5520
0201

WED - 22 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-08212018-0945-11

Battelle ID J7566-FS
 Sample Type SA
 Collection Date 08/21/2018
 Extraction Date 08/23/2018
 Analysis Date 08/25/2018
 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

	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
PFDaA	0.98 U	0.41	0.98	2.45
PFTTrDA	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	106
13C2-PFDA	107
d5-EtFOSAA	101



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

Client ID JAX-RES-08212018-1130-10

Battelle ID J7568-FS
 Sample Type SA
 Collection Date 08/21/2018
 Extraction Date 08/23/2018
 Analysis Date 08/25/2018
 Analytical Instrument Sciex 5500 LC/MS/MS
 % Moisture NA
 Matrix W
 Sample Size 0.280
 Size Unit-Basis L
 Units ng/L MDL LOD LOQ

	ng/L	MDL	LOD	LOQ
PFHxA	0.45 U	0.20	0.45	2.23
PFHpA	0.89 U	0.30	0.89	2.23
PFOA	0.89 U	0.34	0.89	2.23
PFNA	0.89 U	0.33	0.89	2.23
PFDA	0.89 U	0.35	0.89	2.23
PFUnA	0.89 U	0.34	0.89	2.23
PFDaA	0.89 U	0.38	0.89	2.23
PFTTrDA	0.89 U	0.38	0.89	2.23
PFTeDA	1.34 U	0.65	1.34	2.23
NMeFOSAA	0.89 U	0.38	0.89	2.23
NEtFOSAA	0.89 U	0.39	0.89	2.23
PFBS	0.45 U	0.19	0.45	2.23
PFHxS	0.89 U	0.30	0.89	2.23
PFOS	0.89 U	0.27	0.89	2.23

Surrogate Recoveries (%)

13C2-PFHxA	123
13C2-PFDA	106
d5-EtFOSAA	104



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

Client ID JAX-RES-08212018-1330-36

Battelle ID J7570-FS
 Sample Type SA
 Collection Date 08/21/2018
 Extraction Date 08/23/2018
 Analysis Date 08/25/2018
 Analytical Instrument Sciex 5500 LC/MS/MS
 % Moisture NA
 Matrix W
 Sample Size 0.260
 Size Unit-Basis L
 Units ng/L MDL LOD LOQ

	ng/L	MDL	LOD	LOQ
PFHxA	0.48 U	0.21	0.48	2.40
PFHpA	0.96 U	0.33	0.96	2.40
PFOA	0.96 U	0.37	0.96	2.40
PFNA	0.96 U	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	0.48 U	0.20	0.48	2.40
PFHxS	0.96 U	0.33	0.96	2.40
PFOS	0.96 U	0.29	0.96	2.40

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	87
d5-EtFOSAA	93



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

Client ID	KA08 IB			
Battelle ID	KA08 IB_08/25/2018			
Sample Type	IB			
Collection Date	NA			
Extraction Date	NA			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	NA			
Sample Size	0.250			
Size Unit-Basis	NA			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDaA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	96
13C2-PFDA	102
d5-EtFOSAA	100



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

Client ID	Procedural Blank			
Battelle ID	CR649PB-FS			
Sample Type	PB			
Collection Date	08/23/2018			
Extraction Date	08/23/2018			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDaA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	100
13C2-PFDA	94
d5-EtFOSAA	86



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

Client ID	Laboratory Control Sample					
Battelle ID	CR650LCS-FS					
Sample Type	LCS					
Collection Date	08/23/2018					
Extraction Date	08/23/2018					
Analysis Date	08/25/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L					
Units	ng/L	Target	Recovery	Qual	Control Limits	
					Lower	Upper
PFHxA	20.11	20.00	101		70	130
PFHpA	20.48	20.00	102		70	130
PFOA	19.96	20.00	100		70	130
PFNA	20.11	20.00	101		70	130
PFDA	19.46	20.00	97		70	130
PFUnA	18.77	20.00	94		70	130
PFDoA	19.19	20.00	96		70	130
PFTTrDA	18.90	20.00	95		70	130
PFTeDA	18.93	20.00	95		70	130
NMeFOSAA	24.60	20.00	123		70	130
NEtFOSAA	24.92	20.00	125		70	130
PFBS	17.71	17.70	100		70	130
PFHxS	19.70	18.90	104		70	130
PFOS	17.46	19.10	91		70	130

Surrogate Recoveries (%)

13C2-PFHxA	103
13C2-PFDA	87
d5-EtFOSAA	91



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 highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the Limit of Quantitation (LOQ)
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets secondary criteria
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Method detection limit (MDL) value, Limit of Detection (LOD) reported

Miscellaneous Documentation

QA/QC Summary
Batch 18-0523

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0235
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/21/2018	08/22/2018	1.3

Corrective Actions	None.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	The FRB samples associated with these field samples did not need to be extracted and analyzed. There are no other SDG associated with these samples.

METHOD SUMMARIES	
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	Sample JAX-RES-08212018-1130-10 (J7568-FS) had a sulfurous odor and JAX-RES-08212018-1330-36 (J7570-FS) was yellow in color.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500.

Holding Times	Extraction Date(s)	Analysis Date(s)
	8/23/2018	8/25/2018

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

QA/QC Summary
Batch 18-0523

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted. No comments.
Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted. No comments.
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICAL high and low points RPD \leq 20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted. No comments.
Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadratic curve fitting.
R 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.



Project Client: Tetra Tech
 Project Name: CTO-SE0375: Naval Air Station Jacksonville
 Project Number: 100119154-SE0375
 Preparation Batch: 18-0523
 Data Set: DP-18-0235
 Test Code: Master_371

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



It can be done

**BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM**

Project Title: CTO-SE0375: Naval Air Station Jackson **Data Set Number:** DP-18-0235
Project Number: 100119154-SE0375 **Prep Batch Number:** 18-0523
Entered By: Denise Schumitz **Entered On:** 08/27/2018
Test Code (Matrix Type): Master_371(L)

Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
DMS 8/27/2018

Task Leader Approval:

Supervisor Approval:

Digitally signed by Jonathan Thorn
Date: 2018.08.27 11:46:49 -04'00'

PM Approval:



Example Calculation for PFAS

Calculation of final concentration from area:

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

Where:

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

Sample ID: CR650LCS-FS(0)
 Client Sample ID: Laboratory Control Sample
 Sample Size: 0.25
 Units: L
 Dilution Factor: 1.000
 PIV (L): 0.001
 Target Analyte: PFUnA
 MRM Transition: 563.0 / 519.0
 Data file: 18-0523_18-0524.wiff
 Result table: 18-0523_18-0524_DW
 Area: 1,629,915.55
 IS Name: 13C2-PFOA
 IS Area: 32,060.62
 IS Amount (ng/L): 100
 y-intercept: 0.3129
 slope: 1.07699

$$\text{Concentration} = \frac{[(1629915.55/32060.62) - 0.3129]}{1.07699} * 100 * 0.001 * 1 / 0.25$$

$$\text{ng/L} = 18.77$$



Project Client: Tetra Tech
 Project Name: CTO-SE0375: Naval Air Station Jacksonville
 Project No.: 100119154-SE0375
 Preparation Batch: 18-0523
 Data Set: DP-18-0235

	CR649PB-FS (Procedural Blank)	CR650LCS-FS (Laboratory Control Sample)	J7566-FS (JAX-RES-08212018-0945-11)	J7568-FS (JAX-RES-08212018-1130-10)	J7570-FS (JAX-RES-08212018-1330-36)
PFHxA	-	L	-	-	-
PFHpA	-	L	-	-	-
PFOA	-	L	-	-	-
PFNA	-	L	-	-	-
PFDA	-	L	-	-	-
PFUnA	-	L	-	-	-
PFDoA	-	L	-	-	-
PFTTrDA	-	L	-	-	-
PFTeDA	-	L	-	-	-
NMeFOSAA	-	L	-	-	-
NEtFOSAA	-	L	-	-	-
PFBS	-	L	-	-	-
PFHxS	-	L	-	-	-
PFOS	-	L	-	-	-

"L": Linear
 "Br": branched
 "L/Br": Linear/Branched
 "-": Not detected

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



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)
JZ80	L3	8/25/18 14:23	13C4-PFOS	169,780.16	-
JZ81	L4	8/25/18 14:32	13C4-PFOS	148,146.63	-
JZ82	L5	8/25/18 14:41	13C4-PFOS	157,723.01	-
JZ83	L6	8/25/18 14:50	13C4-PFOS	151,202.26	-
JZ84	L7	8/25/18 14:59	13C4-PFOS	164,251.66	-
JZ85	L8	8/25/18 15:08	13C4-PFOS	153,582.54	-
JZ86	L9	8/25/18 15:17	13C4-PFOS	147,602.88	14.0

PASS

Average 156,041.31 Lower 78,020.66 Upper 234,061.97

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	13C4-PFOS	169,780.16	78,020.66	234,061.97		110,406.11	220,812.21	
JZ81	L4	8/25/18 14:32	13C4-PFOS	148,146.63	78,020.66	234,061.97		110,406.11	220,812.21	
JZ82	L5	8/25/18 14:41	13C4-PFOS	157,723.01	78,020.66	234,061.97		110,406.11	220,812.21	
JZ83	L6	8/25/18 14:50	13C4-PFOS	151,202.26	78,020.66	234,061.97		110,406.11	220,812.21	
JZ84	L7	8/25/18 14:59	13C4-PFOS	164,251.66	78,020.66	234,061.97		110,406.11	220,812.21	
JZ85	L8	8/25/18 15:08	13C4-PFOS	153,582.54	78,020.66	234,061.97		110,406.11	220,812.21	
JZ86	L9	8/25/18 15:17	13C4-PFOS	147,602.88	78,020.66	234,061.97		110,406.11	220,812.21	
KZ08 IB	Instrument Blank	8/25/18 15:26	13C4-PFOS	161,003.39	78,020.66	234,061.97		110,406.11	220,812.21	
JZ77 ICC	ICC	8/25/18 15:35	13C4-PFOS	157,328.87	78,020.66	234,061.97		110,406.11	220,812.21	
CR649PB-FS(0)	Procedural Blank	8/25/18 15:53	13C4-PFOS	158,842.54	78,020.66	234,061.97		110,406.11	220,812.21	
CR650LCS-FS(0)	Laboratory Control Sample	8/25/18 16:02	13C4-PFOS	142,750.61	78,020.66	234,061.97		110,406.11	220,812.21	
J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/18 16:10	13C4-PFOS	156,120.75	78,020.66	234,061.97		110,406.11	220,812.21	
J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/18 16:19	13C4-PFOS	134,513.66	78,020.66	234,061.97		110,406.11	220,812.21	
J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/18 16:28	13C4-PFOS	131,635.78	78,020.66	234,061.97		110,406.11	220,812.21	
JZ81 CCV	CCV	8/25/18 16:37	13C4-PFOS	160,328.42	78,020.66	234,061.97		110,406.11	220,812.21	

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



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)
JZ80	L3	8/25/18 14:23	13C2-PFOA	35,541.15	-
JZ81	L4	8/25/18 14:32	13C2-PFOA	30,983.03	-
JZ82	L5	8/25/18 14:41	13C2-PFOA	34,802.67	-
JZ83	L6	8/25/18 14:50	13C2-PFOA	32,321.64	-
JZ84	L7	8/25/18 14:59	13C2-PFOA	33,771.70	-
JZ85	L8	8/25/18 15:08	13C2-PFOA	32,297.56	-
JZ86	L9	8/25/18 15:17	13C2-PFOA	34,064.70	4.2

PASS

Average 33,397.49 Lower 16,698.75 Upper 50,096.24

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	13C2-PFOA	35,541.15	16,698.75	50,096.24		24,361.87	48,723.74	
JZ81	L4	8/25/18 14:32	13C2-PFOA	30,983.03	16,698.75	50,096.24		24,361.87	48,723.74	
JZ82	L5	8/25/18 14:41	13C2-PFOA	34,802.67	16,698.75	50,096.24		24,361.87	48,723.74	
JZ83	L6	8/25/18 14:50	13C2-PFOA	32,321.64	16,698.75	50,096.24		24,361.87	48,723.74	
JZ84	L7	8/25/18 14:59	13C2-PFOA	33,771.70	16,698.75	50,096.24		24,361.87	48,723.74	
JZ85	L8	8/25/18 15:08	13C2-PFOA	32,297.56	16,698.75	50,096.24		24,361.87	48,723.74	
JZ86	L9	8/25/18 15:17	13C2-PFOA	34,064.70	16,698.75	50,096.24		24,361.87	48,723.74	
KZ08 IB	Instrument Blank	8/25/18 15:26	13C2-PFOA	32,500.03	16,698.75	50,096.24		24,361.87	48,723.74	
JZ77 ICC	ICC	8/25/18 15:35	13C2-PFOA	33,842.69	16,698.75	50,096.24		24,361.87	48,723.74	
CR649PB-FS(0)	Procedural Blank	8/25/18 15:53	13C2-PFOA	31,951.71	16,698.75	50,096.24		24,361.87	48,723.74	
CR650LCS-FS(0)	Laboratory Control Sample	8/25/18 16:02	13C2-PFOA	32,060.62	16,698.75	50,096.24		24,361.87	48,723.74	
J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/18 16:10	13C2-PFOA	31,166.54	16,698.75	50,096.24		24,361.87	48,723.74	
J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/18 16:19	13C2-PFOA	29,108.54	16,698.75	50,096.24		24,361.87	48,723.74	
J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/18 16:28	13C2-PFOA	31,385.39	16,698.75	50,096.24		24,361.87	48,723.74	
JZ81 CCV	CCV	8/25/18 16:37	13C2-PFOA	33,793.20	16,698.75	50,096.24		24,361.87	48,723.74	

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



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)
JZ80	L3	8/25/18 14:23	d3-MeFOSAA	27,025.54	-
JZ81	L4	8/25/18 14:32	d3-MeFOSAA	28,504.56	-
JZ82	L5	8/25/18 14:41	d3-MeFOSAA	28,900.15	-
JZ83	L6	8/25/18 14:50	d3-MeFOSAA	27,273.57	-
JZ84	L7	8/25/18 14:59	d3-MeFOSAA	28,212.68	-
JZ85	L8	8/25/18 15:08	d3-MeFOSAA	29,670.74	-
JZ86	L9	8/25/18 15:17	d3-MeFOSAA	31,059.53	13.9

PASS

Average Lower Upper
 28,663.82 14,331.91 42,995.73

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	d3-MeFOSAA	27,025.54	14,331.91	42,995.73		20,230.11	40,460.21	
JZ81	L4	8/25/18 14:32	d3-MeFOSAA	28,504.56	14,331.91	42,995.73		20,230.11	40,460.21	
JZ82	L5	8/25/18 14:41	d3-MeFOSAA	28,900.15	14,331.91	42,995.73		20,230.11	40,460.21	
JZ83	L6	8/25/18 14:50	d3-MeFOSAA	27,273.57	14,331.91	42,995.73		20,230.11	40,460.21	
JZ84	L7	8/25/18 14:59	d3-MeFOSAA	28,212.68	14,331.91	42,995.73		20,230.11	40,460.21	
JZ85	L8	8/25/18 15:08	d3-MeFOSAA	29,670.74	14,331.91	42,995.73		20,230.11	40,460.21	
JZ86	L9	8/25/18 15:17	d3-MeFOSAA	31,059.53	14,331.91	42,995.73		20,230.11	40,460.21	
KZ08 IB	Instrument Blank	8/25/18 15:26	d3-MeFOSAA	27,868.55	14,331.91	42,995.73		20,230.11	40,460.21	
JZ77 ICC	ICC	8/25/18 15:35	d3-MeFOSAA	26,480.50	14,331.91	42,995.73		20,230.11	40,460.21	
CR649PB-FS(0)	Procedural Blank	8/25/18 15:53	d3-MeFOSAA	27,761.75	14,331.91	42,995.73		20,230.11	40,460.21	
CR650LCS-FS(0)	Laboratory Control Sample	8/25/18 16:02	d3-MeFOSAA	25,486.25	14,331.91	42,995.73		20,230.11	40,460.21	
J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/18 16:10	d3-MeFOSAA	27,254.47	14,331.91	42,995.73		20,230.11	40,460.21	
J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/18 16:19	d3-MeFOSAA	24,571.28	14,331.91	42,995.73		20,230.11	40,460.21	
J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/18 16:28	d3-MeFOSAA	24,215.43	14,331.91	42,995.73		20,230.11	40,460.21	
JZ81 CCV	CCV	8/25/18 16:37	d3-MeFOSAA	28,332.68	14,331.91	42,995.73		20,230.11	40,460.21	

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 2:59:30 PM	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.52	1.19	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.82	1.24	0.8 – 1.5

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 2:59:30 PM	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.52	36	>10
PFBS_2	298.9 / 99.0	1.52	28	>10
PFHxA_1	313.0 / 269.0	1.82	23	>10
PFHxA_2	313.0 / 119.0	1.82	22	>10
PFHpA_1	363.0 / 319.0	2.23	27	>10
PFHpA_2	363.0 / 169.0	2.23	26	>10
PFHxS_1	399.0 / 80.0	2.25	34	>10
PFHxS_2	399.0 / 99.0	2.25	43	>10
PFOA_1	413.0 / 369.0	2.63	29	>10
PFOA_2	413.0 / 169.0	2.63	32	>10
PFNA_1	463.0 / 419.0	3.02	28	>10
PFNA_2	463.0 / 219.0	3.02	27	>10
PFOS_1	499.0 / 80.0	3.02	37	>10
PFOS_2	499.0 / 99.0	3.02	36	>10
PFDA_1	513.0 / 469.0	3.37	26	>10
PFDA_2	513.0 / 219.0	3.37	29	>10
PFUnA_1	563.0 / 519.0	3.70	23	>10
PFUnA_2	563.0 / 269.0	3.70	29	>10
PFDaA_1	613.0 / 569.0	3.97	26	>10
PFDaA_2	613.0 / 319.0	3.97	26	>10
PFTrDA_1	663.0 / 619.0	4.22	33	>10
PFTrDA_2	663.0 / 169.0	4.22	38	>10
PFTeDA_1	713.0 / 669.0	4.43	55	>10
PFTeDA_2	713.0 / 169.0	4.43	52	>10
NMeFOSAA_1	570.0 / 419.0	3.52	42	>10
NMeFOSAA_2	570.0 / 512.0	3.52	27	>10
NEtFOSAA_1	584.0 / 419.0	3.69	35	>10
NEtFOSAA_2	584.0 / 483.0	3.69	41	>10
13C2-PFHxA	315.0 / 270.0	1.81	50	>10
13C2-PFDA	515.0 / 470.0	3.36	37	>10
d5-EtFOSAA	589.0 / 419.0	3.67	25	>10



Precision and Bias at the LOQ for PFAS in Drinking Water

Analyte	CAS No.	Average (ng/L)	ST DEV	3 Sigma	n
PFHxA	307-24-4	10.41	1.25	3.75	19
PFHpA	375-85-9	10.59	1.42	4.26	19
PFOA	335-67-1	10.45	1.47	4.41	19
PFNA	375-95-1	10.49	1.28	3.84	19
PFDA	335-76-2	10.39	1.57	4.71	19
PFUnA	2058-94-8	10.05	1.71	5.13	19
PFDoA	307-55-1	9.99	1.63	4.89	19
PFTTrDA	72629-94-8	10.09	1.79	5.37	19
PFTeDA	376-06-7	11.27	2.41	7.23	19
NMeFOSAA	2355-31-9	10.60	1.12	3.36	19
NEtFOSAA	2991-50-6	10.17	1.29	3.87	19
PFBS	375-73-5	8.64	1.26	3.78	19
PFHxS	355-46-4	9.73	1.49	4.47	19
PFOS	1763-23-1	9.32	1.52	4.56	19

BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

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

Analyte	CAS No.	MDL (ng/L)	LOD (ng/L)	LOQ (ng/L)	MRL (ng/L)
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
PFTTrDA	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

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
PFTTrDA	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
¹³C₂-PFOA	NA	IS	415.0 / 270.0	NA
¹³C₄-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



Zef Scientific Inc.

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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:** _____

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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
<input checked="" type="checkbox"/> CAD 0	0.5	0.4 to 1.1 x10 ⁻⁵ Torr
<input checked="" type="checkbox"/> CAD Low	1.9	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.4	Read Only
<input checked="" type="checkbox"/> CAD High	3.4	Read Only
<input checked="" type="checkbox"/> CAD 12	3.4	2.4 to 4.5 x10 ⁻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

Zef Scientific Inc.

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

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

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

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

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

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

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

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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
<input checked="" type="checkbox"/> CAD 0	0.8	0.4 to 1.1 x10 ⁻⁵ Torr
<input checked="" type="checkbox"/> CAD Low	2.1	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.6	Read Only
<input checked="" type="checkbox"/> CAD High	3.7	Read Only
<input checked="" type="checkbox"/> CAD 12	3.7	2.4 to 4.5 x10 ⁻⁵ Torr

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

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

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

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

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

Transmission Efficiency: 16.93% (≥ 10.0%)

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

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

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

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

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

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

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

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

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

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

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

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

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

REVIEW:

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

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

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

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

It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: JV35

Description: PFAS - 537.1 Internal Standard Stock

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

Solution Prepared By: Schultz, Stephanie

Date Prepared: 5/2/2018

Expiration Date: 5/2/2019

Solution Volume 40 mL X 1 Vials

Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Balance ID: _____

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

Approved By: _____ Date: _____



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: **JV35**

Description: PFAS - 537.1 Internal Standard Stock

Stock Id: **180425-01**

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

Approved By: _____ Date: _____

It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: **JV37**

Description: PFAS - 537.1 Surrogate Standard Stock

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

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

Balance ID: _____

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

Approved By: _____ Date: _____



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 Surrogate Standard Stock

Stock ID: **180425-02**

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

Approved By: _____ Date: _____

It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: JV43

Description: PFAS - 537.1 Low ICAL Stock

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

Solution Prepared By: Schultz, Stephanie

Date Prepared: 5/2/2018

Expiration Date: 5/2/2019

Solution Volume 40 mL X 4 Vials

Refrigerator/Freezer No: LC Laboratory: Refrigerator - R0107

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JV43

Description: PFAS - 537.1 Low ICAL Stock

Stock Id: 180425-03

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

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



It can be done

Standard Solution Prep Form II

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

Description: PFAS - 537.1 Internal Standard Solution

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

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



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

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 ConcentrationsApproved: Standard Laboratory ID Number: **JV61**

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Stock Id: **JV35**

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

It can be done

Standard Solution Prep Form II

Approved: Standard Laboratory ID Number: **JV62**

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

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

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

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: **JV62**

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

Stock Id: **JV37**

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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



It can be done

Standard Solution Prep Form II

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

Description: PFAS - 537.1 Surrogate Solution

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

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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 Surrogate Solution

Stock Id: **JV37**

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

Final Concentrations:

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV37	Pipette	C0982448K

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

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

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

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



It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: KA08

Description: PFAS - 537.1 Instrument Blank

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

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

Balance ID: _____

Comment: 96/4 Methanol/Milli-q water

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: KA08

Description: PFAS - 537.1 Instrument Blank

Stock Id: JZ74

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

Stock Id: JZ75

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

Comment: 96/4 Methanol/Milli-q water

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



It can be done

Standard Solution Prep Form II

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

Description: PFAS - 537.1 Second Source LCS/MS Solution

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

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



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-butanefluorobutane	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-butanefluorobutane	.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



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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Stock Id: **JV35**

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

Final Concentrations:

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV35	Pipette	C0982448K

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

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

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

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



It can be done

Standard Solution Prep Form II

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

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

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

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

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: JZ75

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

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



It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: JZ76

Description: PFAS - 537.1 High ICAL Stock

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

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

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ76

Description: PFAS - 537.1 High ICAL Stock

Stock Id: 180425-03

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	250	2.00	1	100.000	1	10	0.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	250	2.00	1	100.000	1	10	0.05000
Perfluoro-1-butanefluorobutane	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-butanefluorobutane	.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



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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 ICC

Stock Id: JZ28

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

Stock Id: JZ74

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

Stock Id: JZ75

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: JZ77

Description: PFAS - 537.1 ICC

N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanefulfonate	.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



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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 ICAL L3

Stock Id: JV43

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

Stock Id: JZ74

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

Stock Id: JZ75

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ80

Description: PFAS - 537.1 ICAL L3

N-ethylperfluoro-octanesulfonamidoacetic acid	.00010
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00010
Perfluoro-1-butanefluoride	.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



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



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-butanefluorobutane	500	0.00	---	---	1	10	0.00022
Perfluoro-1-hexanesulfonate	500	0.00	---	---	1	10	0.00023
Perfluoro-1-octanesulfonate	500	0.00	---	---	1	10	0.00023
Perfluoro-n-decanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-dodecanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-heptanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-hexanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-nonanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-octanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-tetradecanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-tridecanoic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-undecanoic acid	500	0.01	---	---	1	10	0.00025

Stock Id: JZ74

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

Stock Id: JZ75

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ81

Description: PFAS - 537.1 ICAL L4

N-ethylperfluoro-octanesulfonamidoacetic acid	.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00025
Perfluoro-1-butanefluoride	.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



It can be done

Standard Solution Prep Form II

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

Description: PFAS - 537.1 ICAL L5

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

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

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 ICAL L5

Stock Id: JV43

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

Stock Id: JZ74

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

Stock Id: JZ75

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ82

Description: PFAS - 537.1 ICAL L5

N-ethylperfluoro-octanesulfonamidoacetic acid	.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00050
Perfluoro-1-butanefluoride	.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



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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ83

Description: PFAS - 537.1 ICAL L6

Stock Id: JZ74

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

Stock Id: JZ75

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

Stock Id: JZ76

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: JZ83

Description: PFAS - 537.1 ICAL L6

N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanefulfonate	.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



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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 ICAL L7

Stock Id: JZ74

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

Stock Id: JZ75

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

Stock Id: JZ76

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ84

Description: PFAS - 537.1 ICAL L7

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

Syringes/Pipettes:

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

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

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

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

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



It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: JZ85

Description: PFAS - 537.1 ICAL L8

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

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

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 ICAL L8

Stock Id: JZ74

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

Stock Id: JZ75

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

Stock Id: JZ76

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ85

Description: PFAS - 537.1 ICAL L8

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

Syringes/Pipettes:

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

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

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

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

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



It can be done

Standard Solution Prep Form II

Approved:

Standard Laboratory ID Number: JZ86

Description: PFAS - 537.1 ICAL L9

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

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

Balance ID: _____

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

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



It can be done

Standard Solution Concentrations

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

Description: PFAS - 537.1 ICAL L9

Stock Id: JZ74

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

Stock Id: JZ75

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

Stock Id: JZ76

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

Final Concentrations:

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

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

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

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

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: JZ86

Description: PFAS - 537.1 ICAL L9

N-ethylperfluoro-octanesulfonamidoacetic acid	.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.01000
Perfluoro-1-butanefluoride	.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

It can be done

BDO Id: 180425-01

Reagent Receipt Report

Approved: Authorized

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

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

Total Analytes: 3

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

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

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

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

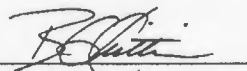


For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

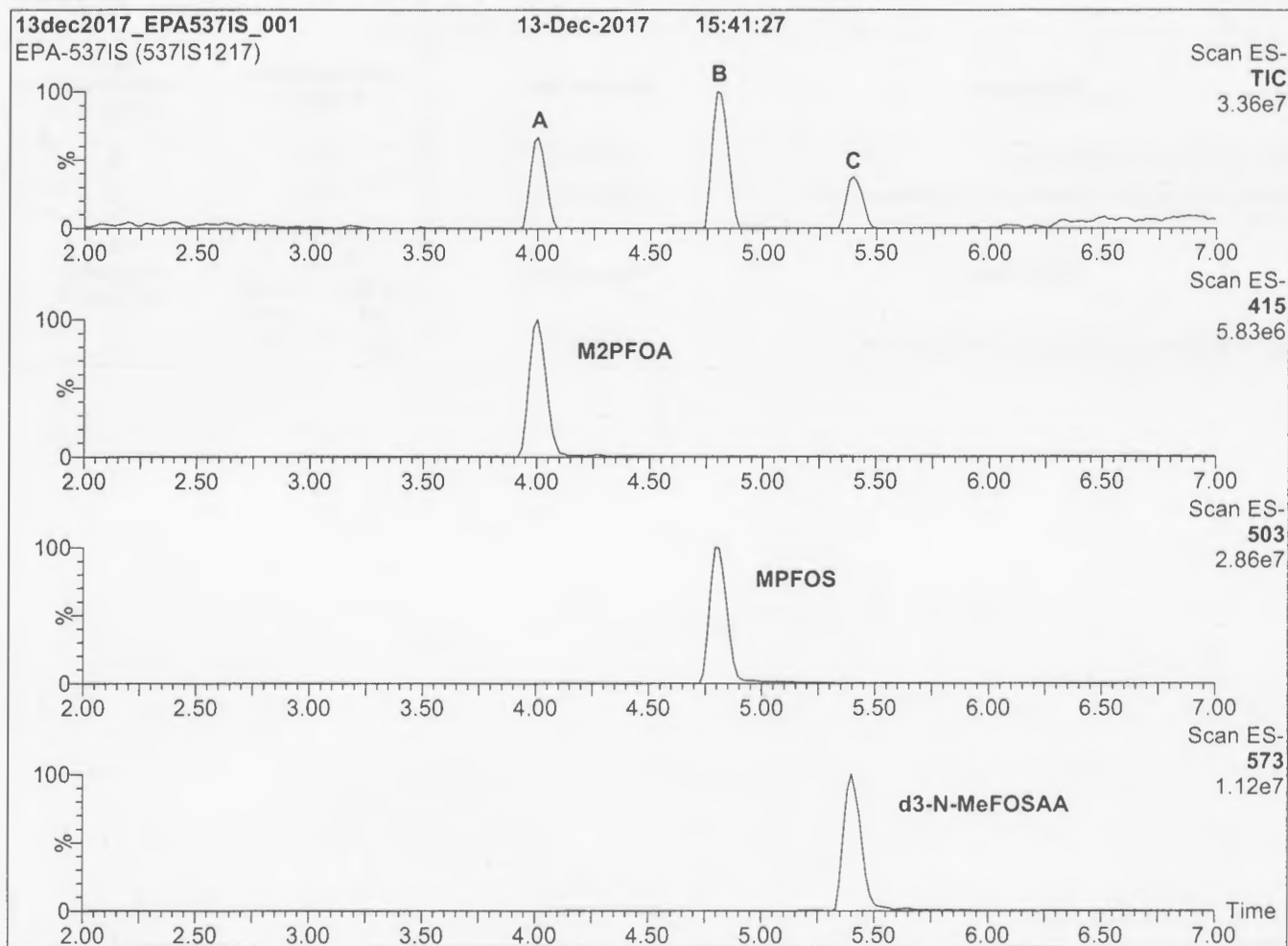
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Perfluoro-n-[1,2- ¹³ C ₂]octanoic acid	M2PFOA	1000		A
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	4000		C
Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure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

Certified By:



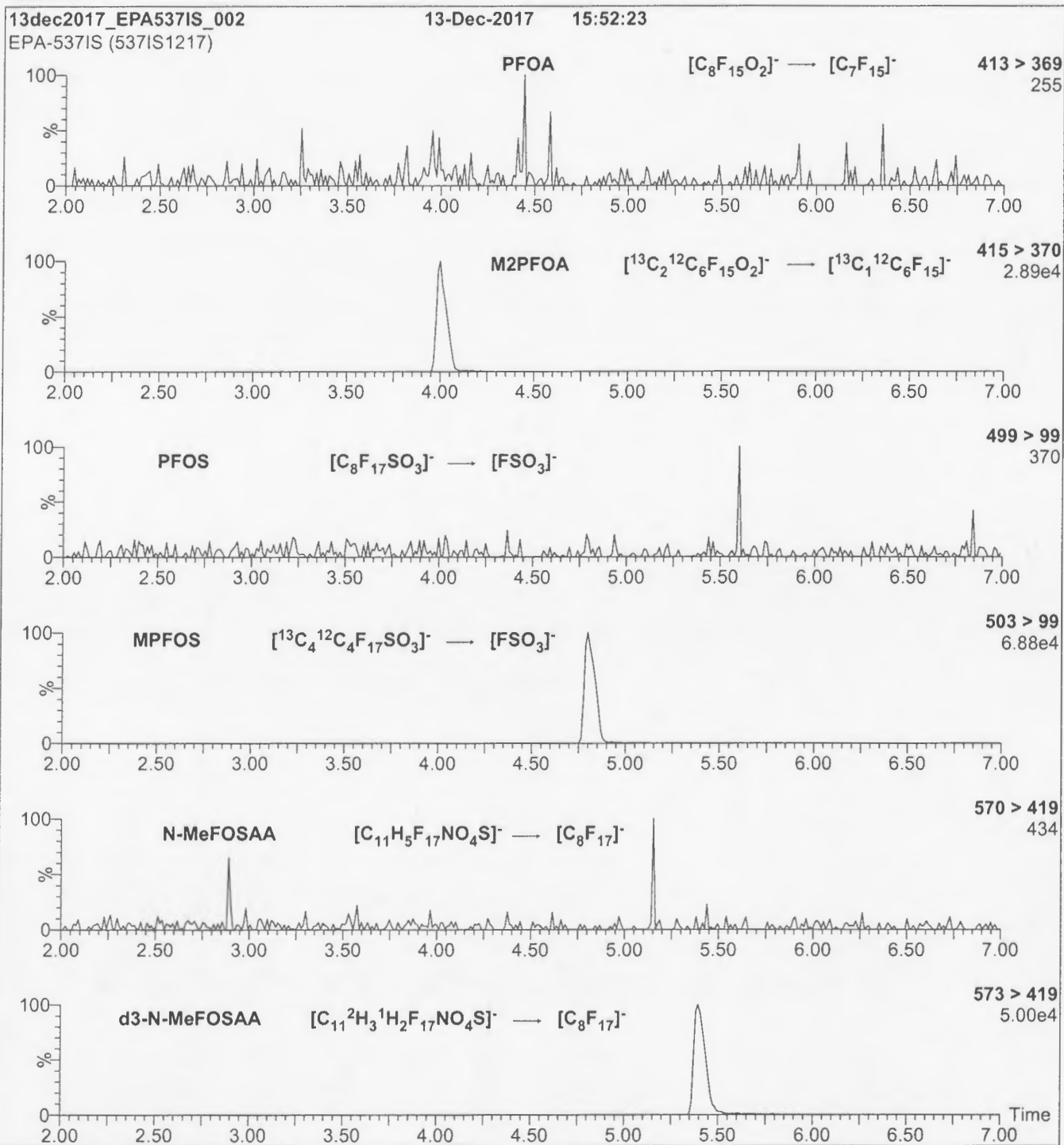
B.G. Chittim, General Manager

Date: 12/22/2017
(mm/dd/yyyy)

Figure 1: EPA-537IS; LC/MS Data (Total Ion Current Chromatogram)**Conditions for Figure 1:****LC:** Waters Acquity Ultra Performance LC**MS:** Micromass Quattro *micro* API MS**Chromatographic Conditions**Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mmMobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min
and hold for 2 min before returning
to initial conditions in 0.5 min.
Time: 10 minFlow: 300 μ l/min**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

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

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

Injection: On-column (EPA-537IS)

Mobile phase: Same as Figure 1

Flow: 300 μ l/min**MS Parameters**

Collision Gas (mbar) = 3.28e-3

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

It can be done

BDO Id: 180425-02

Reagent Receipt Report

Approved: Authorized

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

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

Total Analytes: 3

Notes:

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

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

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

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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



For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com 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: _____

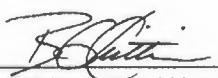
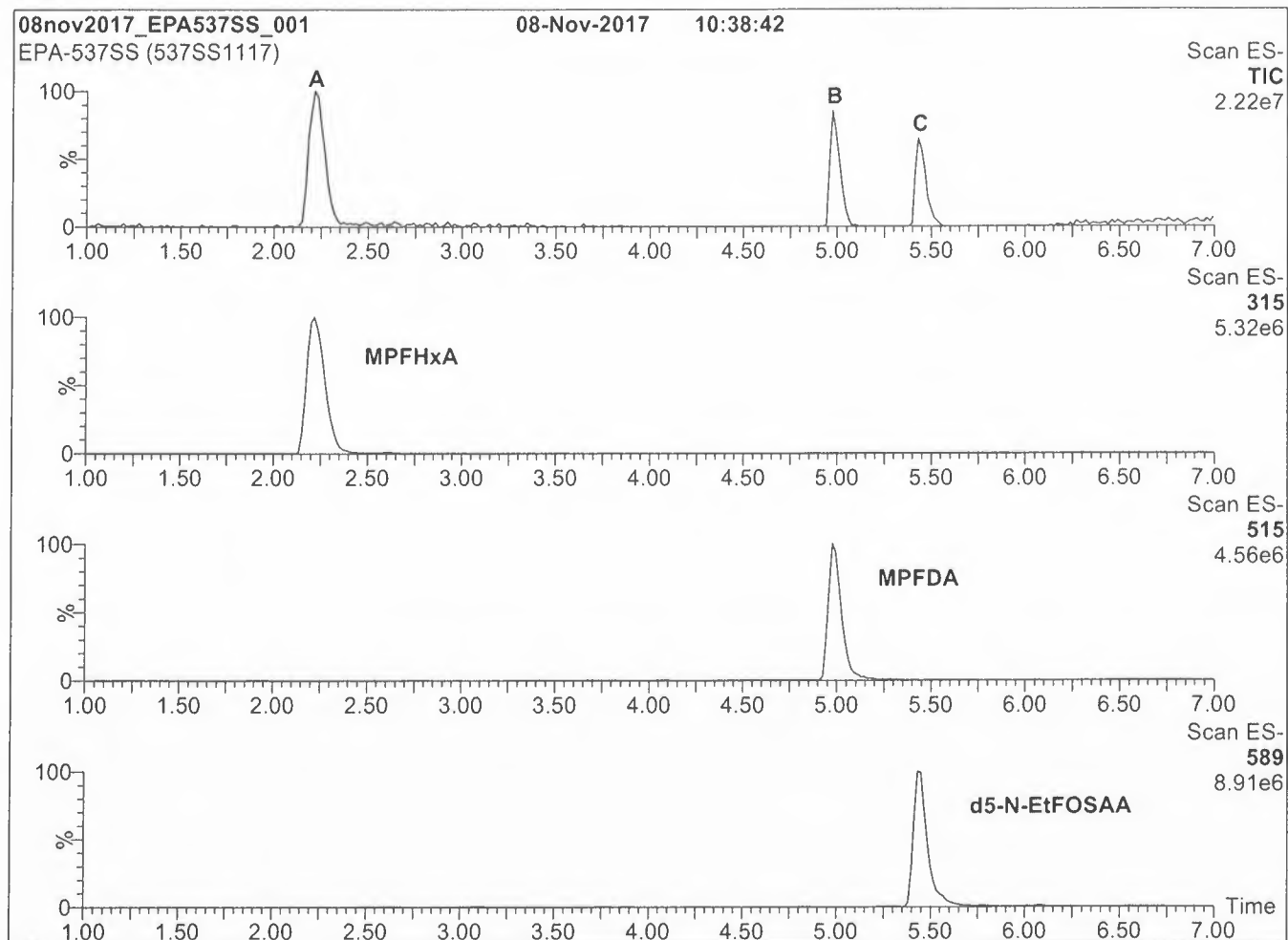

B.G. Chittim, General ManagerDate: 11/13/2017
(mm/dd/yyyy)

Figure 1: EPA-537SS; LC/MS Data (Total Ion Current Chromatogram)**Conditions for Figure 1:****LC:** Waters Acquity Ultra Performance LC**MS:** Micromass Quattro *micro* API MS**Chromatographic Conditions**Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% (80:20 MeOH:ACN) / 55% H₂O
(both with 10 mM NH₄OAc 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 μ l/min**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

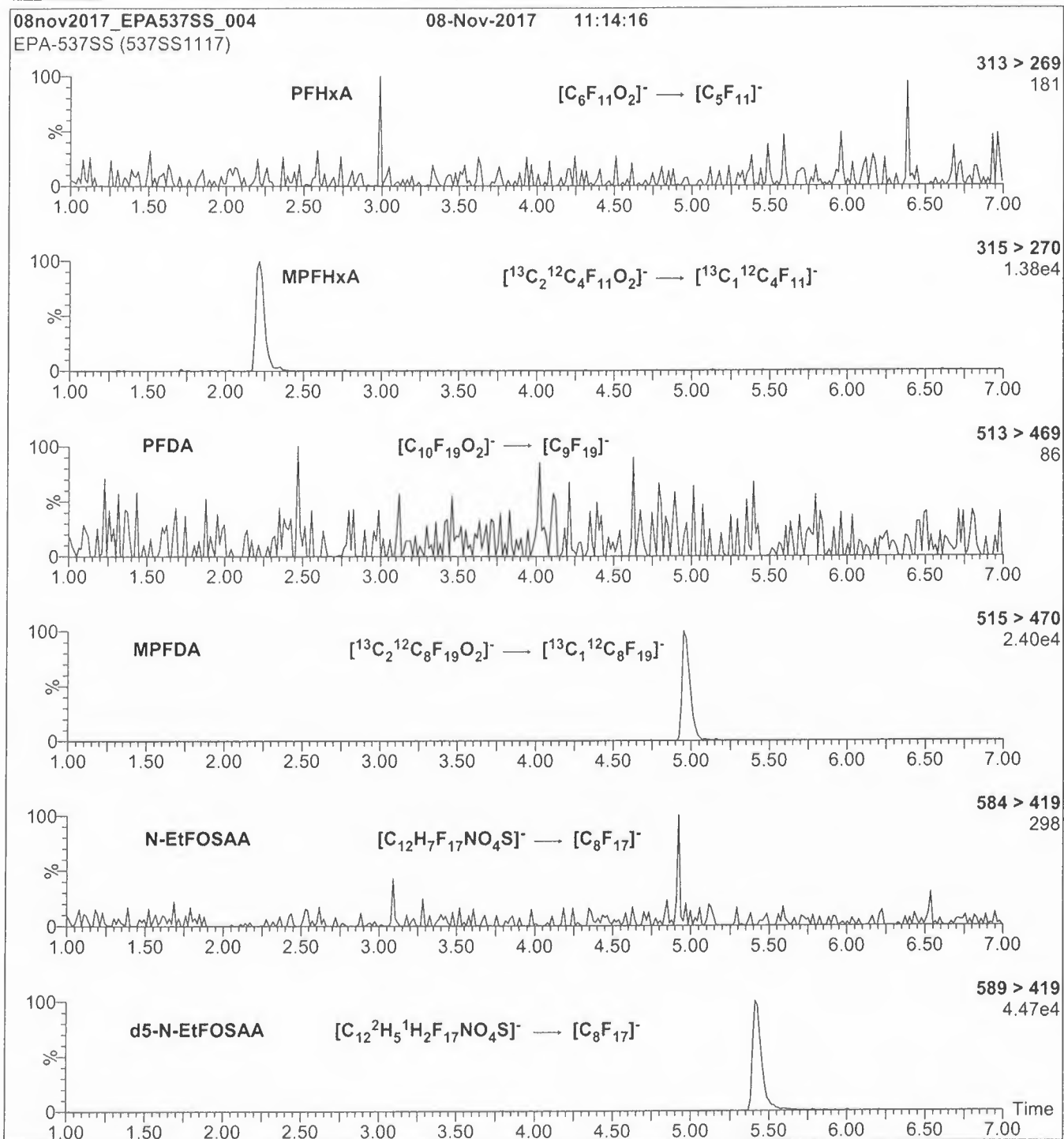
Source: Electrospray (negative)

Capillary Voltage (kV) = 3.00

Cone Voltage (V) = 25.00

Cone Gas Flow (l/hr) = 100

Desolvation Gas Flow (l/hr) = 750

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

Injection: On-column (EPA-537SS)

Mobile phase: Same as Figure 1

Flow: 300 μ l/min**MS Parameters**

Collision Gas (mbar) = 3.50e-3

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

It can be done

BDO Id: 180425-03

Reagent Receipt Report

Approved: Authorized

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

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

Total Analytes: 14

Notes:

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

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
Jnr 5/2/2018

DESCRIPTION:

EPA-537PDS is a solution/mixture of nine native linear perfluoroalkylcarboxylic acids (C₆-C₁₄), three native perfluoroalkylsulfonates (C₄ linear; C₆ and C₈ linear and branched), and two native perfluorooctanesulfonamidoacetic acids (linear and branched). The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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



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

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

Compound	Abbreviation	Concentration * (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Perfluoro-n-hexanoic acid ✓	PFHxA	2000		B
Perfluoro-n-heptanoic acid ✓	PFHpA	2000		C
Perfluoro-n-octanoic acid ✓	PFOA	2000		F
Perfluoro-n-nonanoic acid ✓	PFNA	2000		G
Perfluoro-n-decanoic acid ✓	PFDA	2000		J
Perfluoro-n-undecanoic acid ✓	PFUdA	2000		O
Perfluoro-n-dodecanoic acid ✓	PFDoA	2000		P
Perfluoro-n-tridecanoic acid ✓	PFTrDA	2000		Q
Perfluoro-n-tetradecanoic acid ✓	PFTeDA	2000		R
N-methylperfluorooctanesulfonamidoacetic acid ^a ✓	N-MeFOSAA: linear isomer ✓	1520		L
	N-MeFOSAA: Σ branched isomers	480		K
N-ethylperfluorooctanesulfonamidoacetic acid ^b ✓	N-EtFOSAA: linear isomer ✓	1550		N
	N-EtFOSAA: Σ branched isomers	450		M
Compound	Abbreviation	Concentration * (ng/ml)		Peak Assignment in Figure 1
Potassium perfluoro-1-butanesulfonate ✓	L-PFBS ✓	2000	1770	
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	1620	1480	E
	PFHxSK: Σ branched isomers	378	344	D
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	1580	1460	I
	PFOSK: Σ 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 ¹⁹F-NMR)*

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

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: N-EtFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

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

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Table D: PFHxSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

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

* Percent of total perfluorohexanesulfonate isomers only.

** Systematic Name: Potassium perfluorohexane-2-sulfonate.

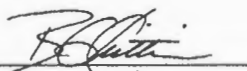
Table E: PFOSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

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

* Percent of total perfluorooctanesulfonate isomers only.

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

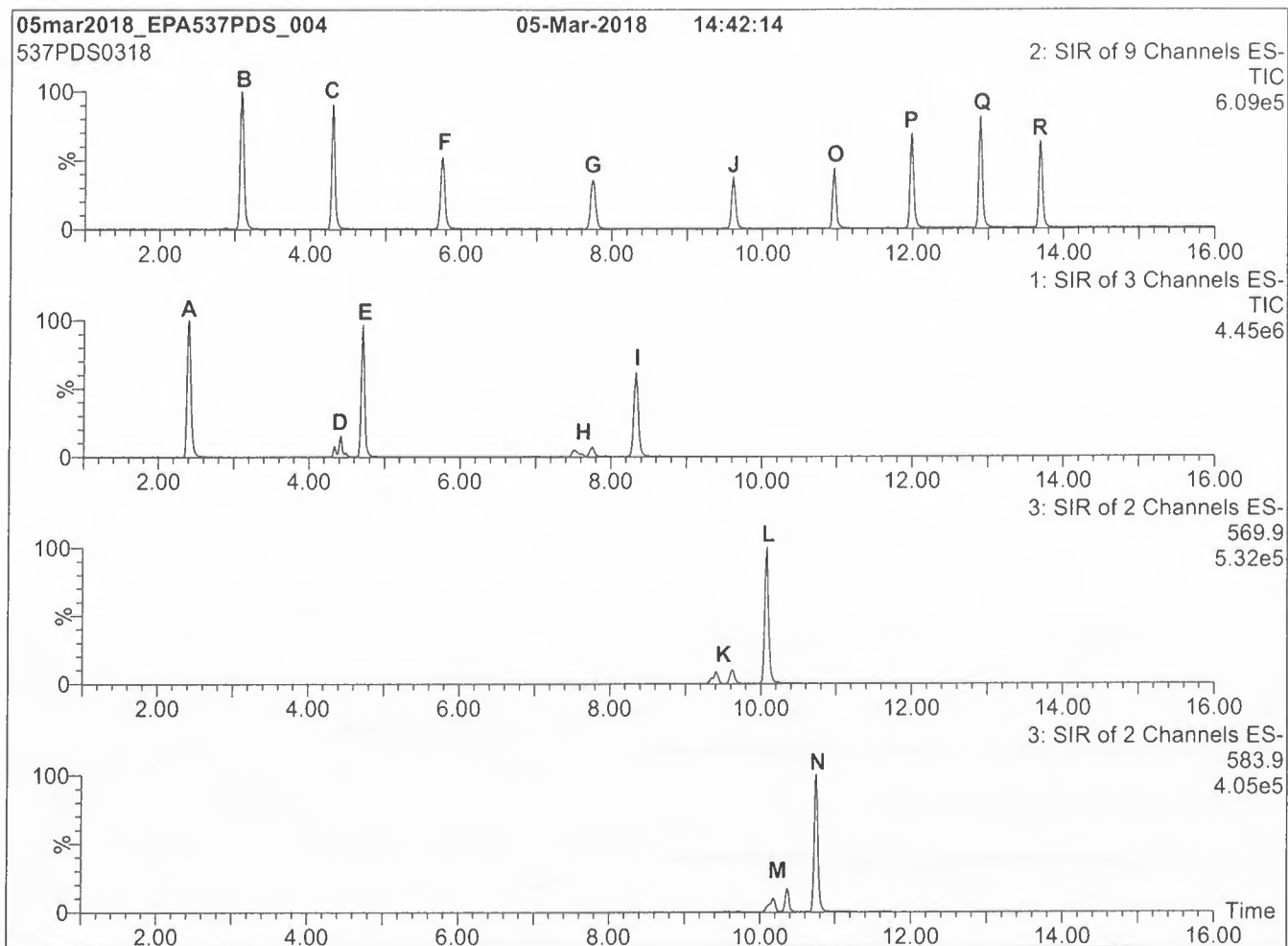
Certified By:



B.G. Chittim, General Manager

Date: 04/02/2018

(mm/dd/yyyy)

Figure 1: EPA-537PDS; LC/MS Data (SIR)**Conditions for Figure 1:****LC:** Waters Acquity Ultra Performance LC**MS:** Micromass Quattro *micro* API MS**Chromatographic Conditions**Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% (80:20 MeOH:ACN) / 60% H₂O
(both with 10 mM NH₄OAc 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 μ l/min**MS Parameters**

Experiment: SIR

Source: Electrospray (negative)

Capillary Voltage (kV) = 3.00

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

Cone Gas Flow (l/hr) = 100

Desolvation Gas Flow (l/hr) = 750

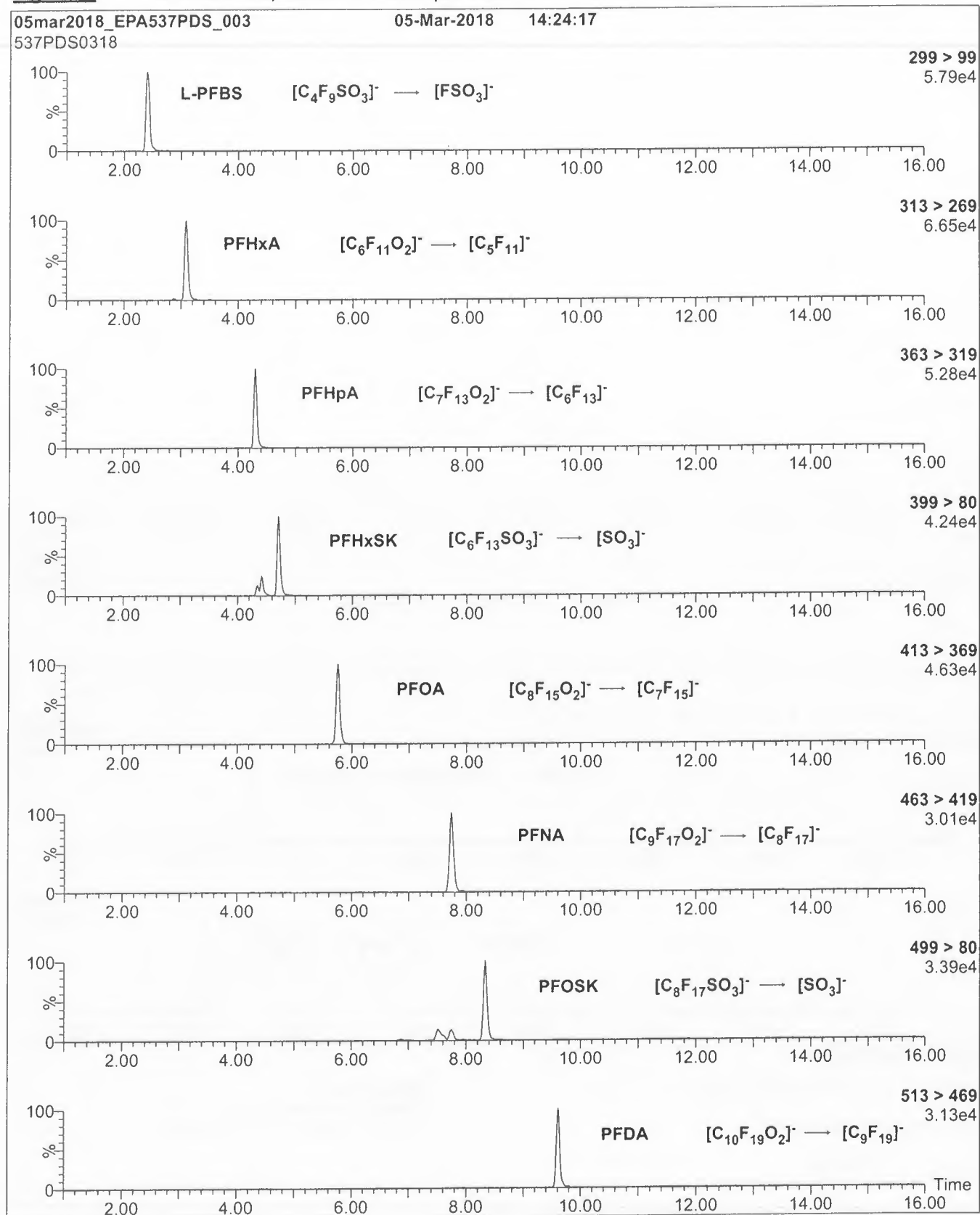
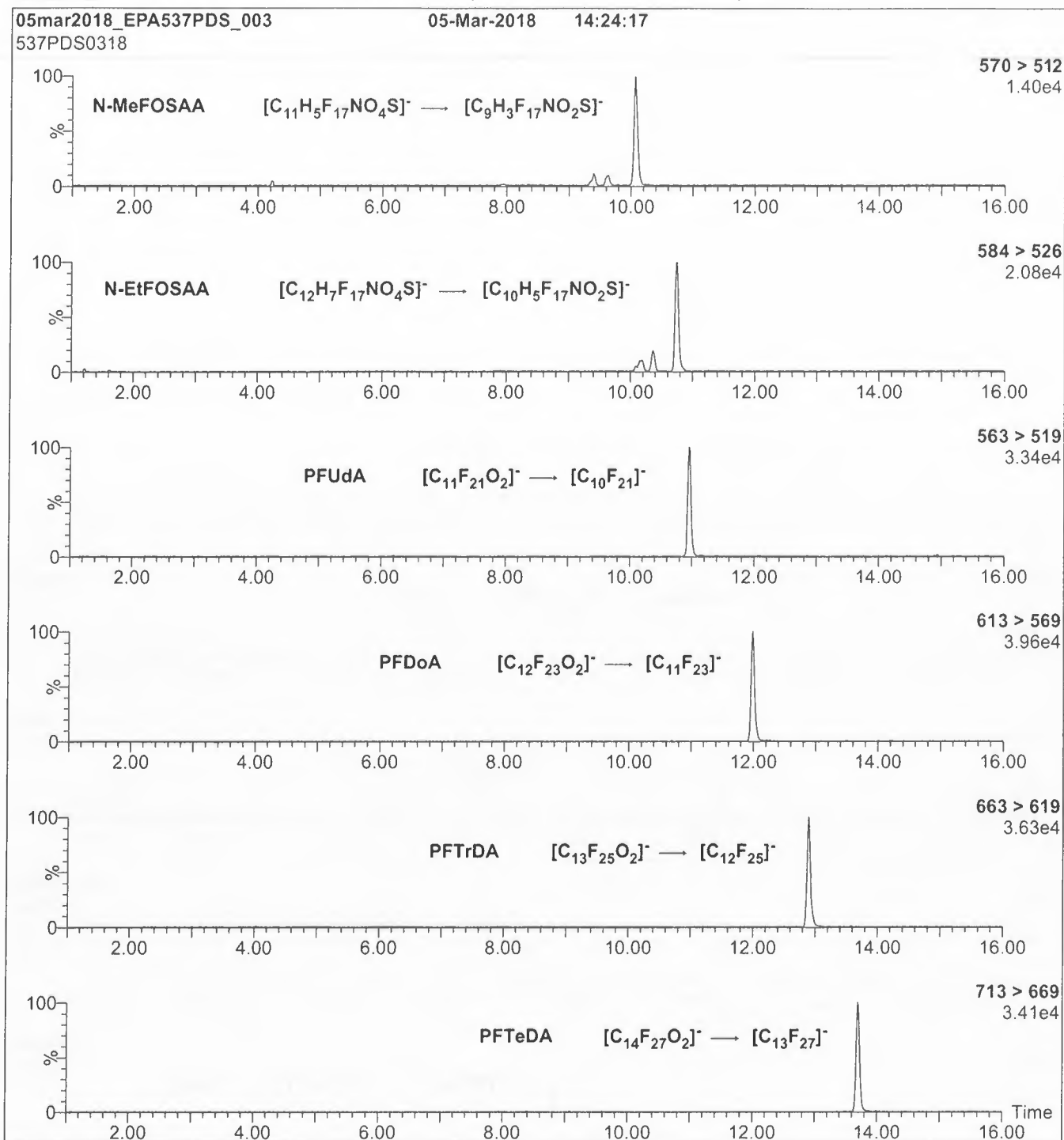
Figure 2: EPA-537PDS; LC/MS/MS Data (Selected MRM Transitions)

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

Injection: On-column (EPA-537PDS)

Mobile phase: Same as Figure 1

Flow: 300 μ l/min**MS Parameters**

Collision Gas (mbar) = 3.10e-3

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

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

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

DESCRIPTION:

EPA-537PDS-L is a solution/mixture of native linear perfluoroalkylcarboxylic acids (C₆-C₁₄), native linear perfluoroalkylsulfonates (C₄, C₆, and C₈), and native linear perfluorooctanesulfonamidoacetic acids. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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



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

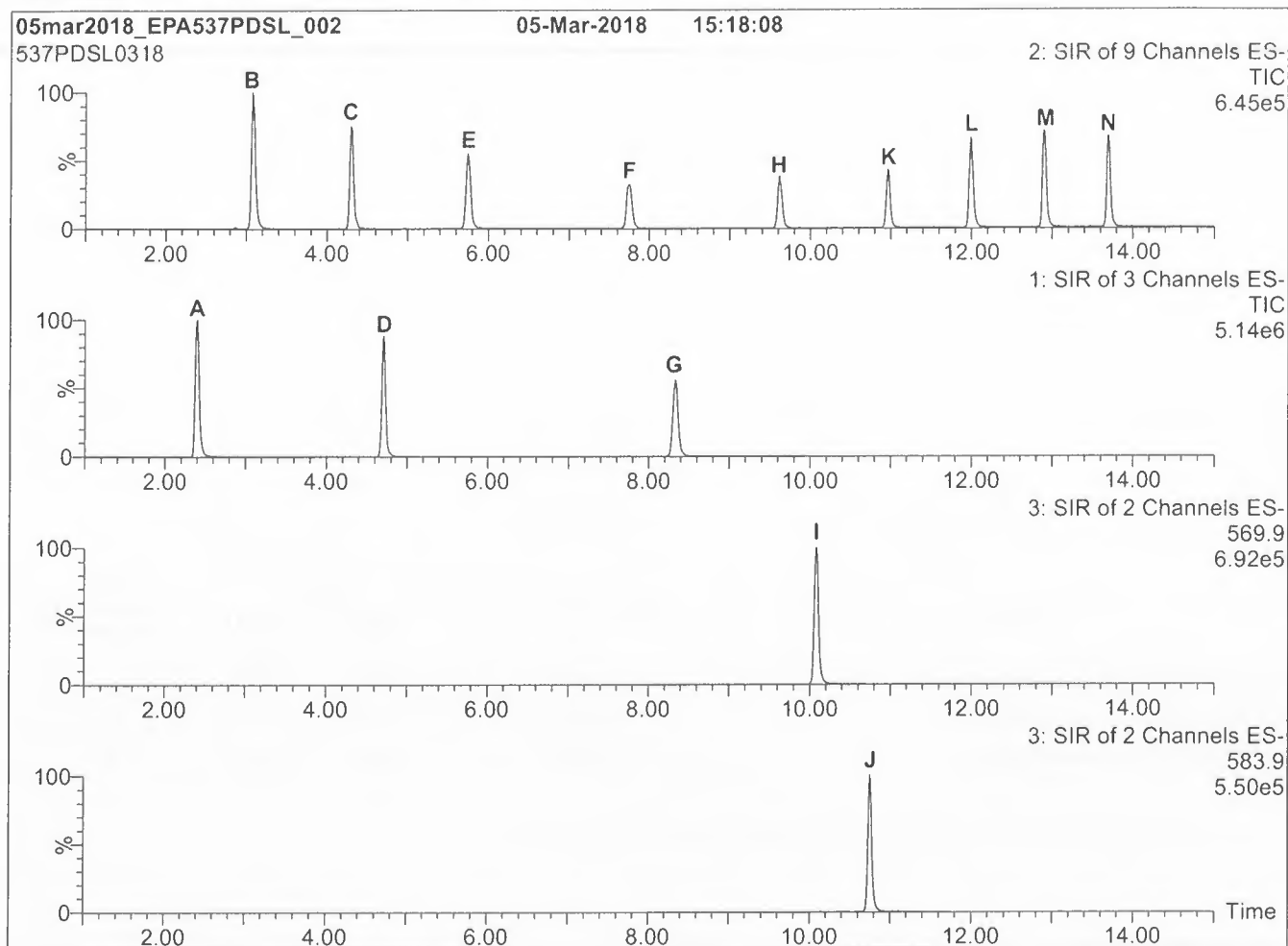
Table A: EPA-537PDS-L; Components and Concentrations (ng/ml; \pm 5% in Methanol / Water (<1%))

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

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

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

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

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP₁₈
 1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
 Start: 40% (80:20 MeOH:ACN) / 60% H₂O
 (both with 10 mM NH₄OAc 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 μ l/min

MS Parameters

Experiment: SIR

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

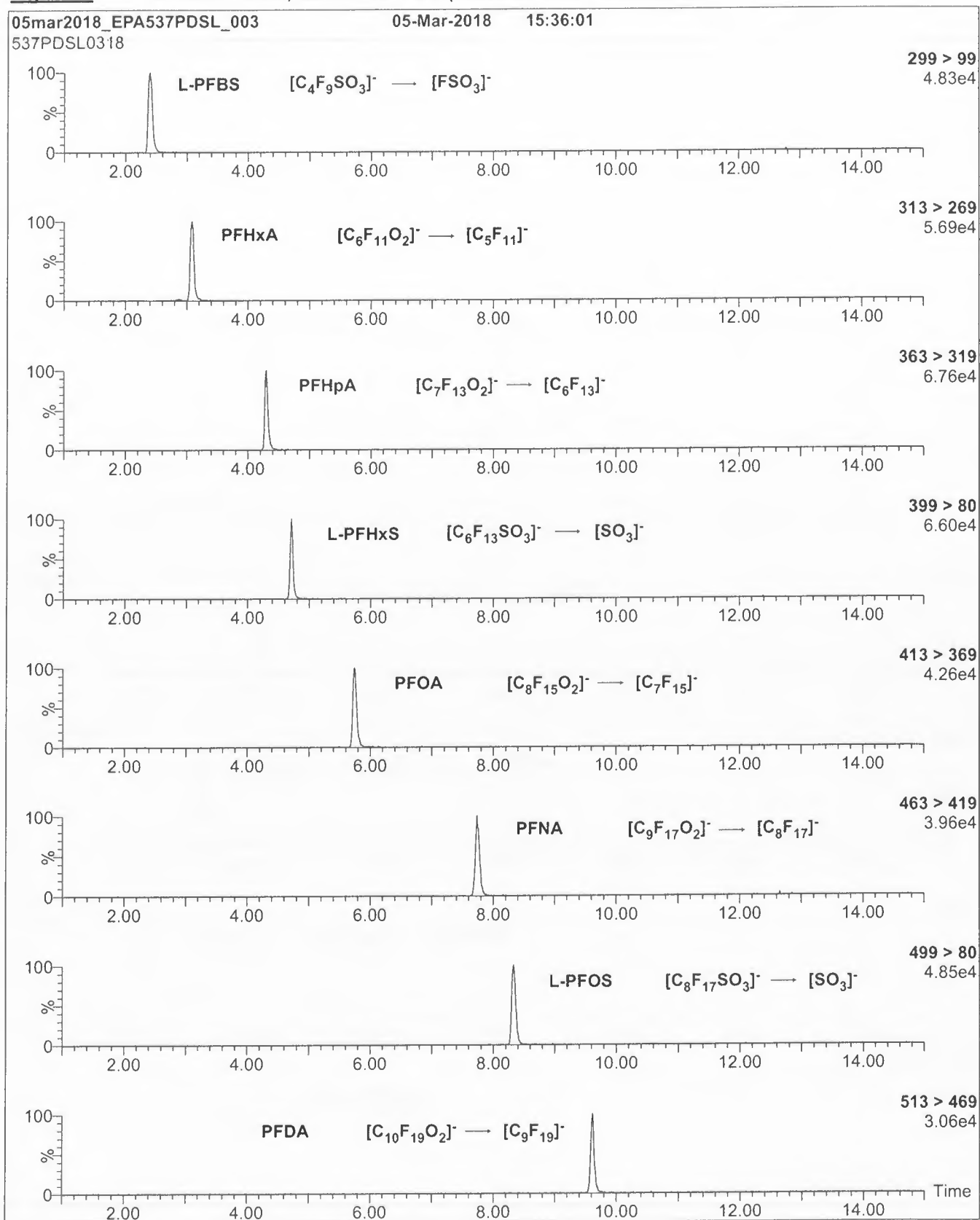
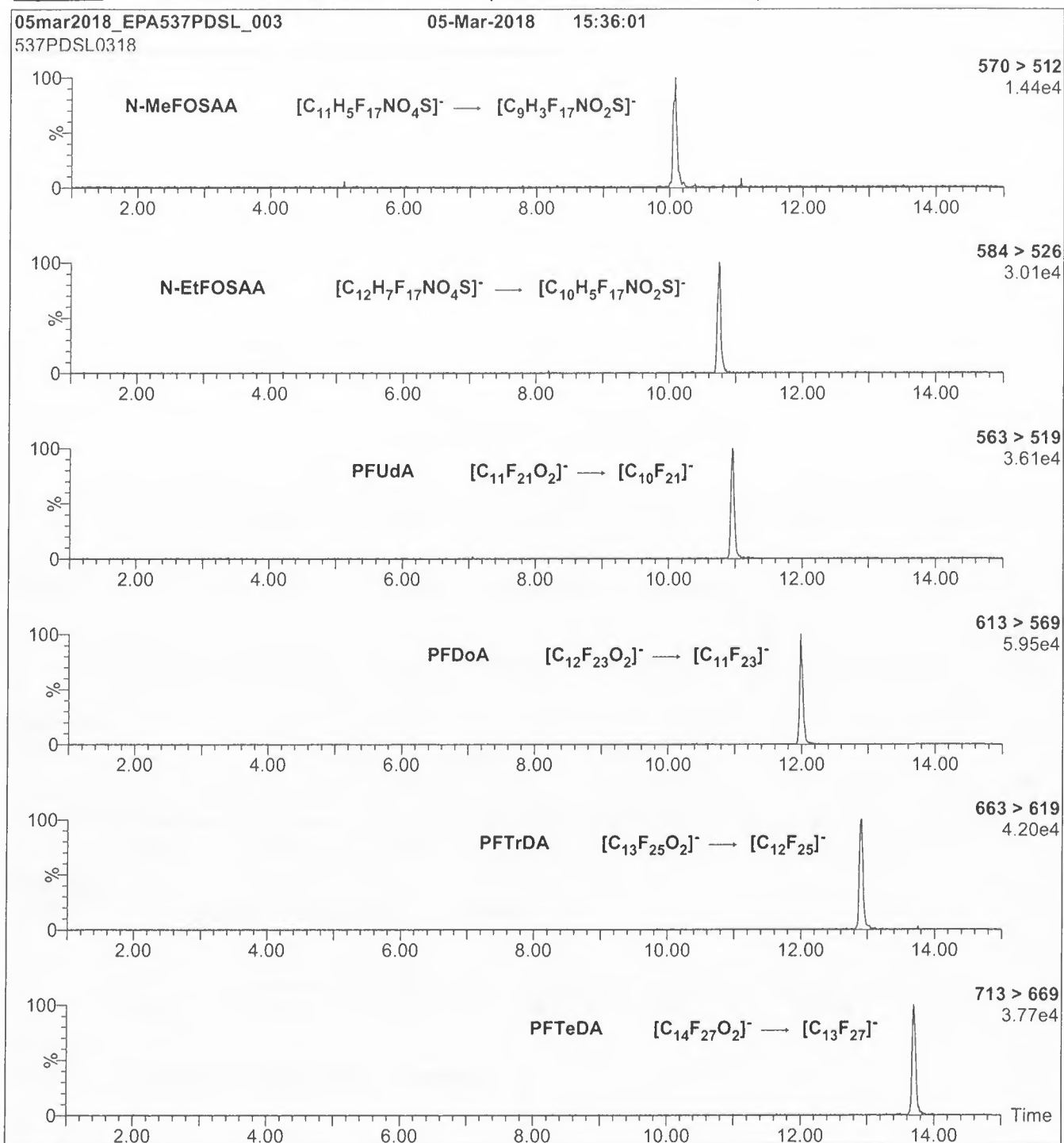
Figure 2: EPA-537PDS-L; LC/MS/MS Data (Selected MRM Transitions)

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

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

Mobile phase: Same as Figure 1

Flow: 300 μ l/min**MS Parameters**

Collision Gas (mbar) = 3.17e-3

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

Sample Preparation



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS**

<u>Project Title(s)</u>	<u>Project No.(s)</u>
CTO-SE0375: Naval Air Station Jacksonville	100119154- SE0375
18-0523	
CTO-SE0375: Drinking Water Analysis	
W	
SOP Numbers (see workplan for modifications)	
VOASOP No.	5-371

This Batch Contains The Following Samples:
CR649PB-FS CR650LCS-FS J7566-FS J7568-FS J7570-FS

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	08/27/2018	DMS



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE**

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)

100119154-
SE0375

18-0523

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description
CR649PB-FS	Procedural Blank
CR650LCS-FS	Laboratory Control Sample
J7566-FS	JAX-RES-08212018-0945-11
J7568-FS	JAX-RES-08212018-1130-10
J7570-FS	JAX-RES-08212018-1330-36

Samples Assigned By:

Jonathan Thorn

Date : August 22, 2018

Comments:



**BATTELLE - NORWELL OPERATIONS
SAMPLE CUSTODY LOG**

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)

100119154-
SE0375

18-0523

CTO-SE0375: Drinking Water Analysis

W

<p>Requested On/By: 08/23/2018 SAS</p> <p>Relinquished On/By: 08/23/2018 MDS</p>	<p>Purpose: Sample Preparation</p> <p>Last Activity: Transfer</p>
<p>Accepted On/By: 08/23/2018 SAS</p> <p>Stored In Facility: Sample Preparation</p> <p>Stored Until: 08/23/2018</p> <p>Stored Comment: NA</p>	<p>Returned On/To:</p> <p>Returned To Facility:</p> <p>Returned Comment: NA</p>

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:	
1	J7566	1	C	Consumed	NA	
2	J7568	1	C	Consumed	NA	
3	J7570	1	C	Consumed	NA	
Total Samples		3	* "C" = Consumed Container			



It can be done

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

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

Project No.(s)
100119154-
SE0375

18-0523

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR649PB-FS	Procedural Blank	250.0	NA	--	08/23/18 SAS
CR650LCS-FS	Laboratory Control Sample	250.0	NA	--	08/23/18 SAS
J7566-FS	JAX-RES-08212018-0945-11	255.0	1	C	08/23/18 SAS
J7568-FS	JAX-RES-08212018-1130-10	280.0	1	C	08/23/18 SAS
J7570-FS	JAX-RES-08212018-1330-36	260.0	1	C	08/23/18 SAS

Comments:

Sample ID:	Comments:
CR649PB-FS	1.23g Trizma(180502-01) weighed on BAL-009
CR650LCS-FS	1.24g Trizma(180502-01) weighed on BAL-009

Samples Assigned By

Jonathan Thorn

Date : August 22, 2018

* - "C" = Sample is Consumed



It can be done

BATTELLE - NORWELL OPERATIONS SURROGATE SPIKE FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR649PB-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
CR650LCS-FS	JZ28	LCS/MS	1	100	08/23/18 SAS	LMG	NA
CR650LCS-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
J7566-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
J7568-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
J7570-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA

Syringes/Pipettes Used:

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



It can be done

BATTELLE - NORWELL OPERATIONS SAMPLE EXTRACTION FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
CR649PB-FS	08/23/18 SAS	NA	NA	NA	NA	NA	NA	NA
CR650LCS-FS	08/23/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7566-FS	08/23/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7568-FS	08/23/18 SAS	NA	NA	NA	NA	NA	NA	NA
J7570-FS	08/23/18 SAS	NA	NA	NA	NA	NA	NA	NA

Solvents/Reagent Preparations:

Name	ID	Expires	Lot No	Procedure	Comments
Pre-packed SPE Column	RP-180823-1	08/23/18	S214-0075	Pre-packed SPE Column	

Solvents/Reagents:

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



It can be done

BATTELLE - NORWELL OPERATIONS INTERNAL STANDARD SPIKING FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****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
CR649PB-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
CR650LCS-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
J7566-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
J7568-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
J7570-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ87	Pipette	B814659662

Extract Id:	Comments:
CR649PB-FS	Samples reconstituted in 96/4 Methanol/Milli-q water

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

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



It can be done

BATTELLE - NORWELL OPERATIONS PREPARATION EXTRACT SPLIT FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR649PB-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
CR650LCS-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
J7566-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
J7568-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
J7570-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS

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

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

* - "C" = Extract is Consumed



It can be done

BATTELLE - NORWELL OPERATIONS EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Purpose:	LC-MS/MS TRANSFER	Last Activity:	Prep->Inst
Relinquished On/By:	Aug 25 2018 8:10AM DMS	Received On/By:	Aug 25 2018 12:10PM 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	CR649PB-FS(0)	1000	1	Intact	NA
2	CR650LCS-FS(0)	1000	1	Intact	NA
3	J7566-FS(0)	1000	1	Intact	NA
4	J7568-FS(0)	1000	1	Intact	NA
5	J7570-FS(0)	1000	1	Intact	NA

Total Extracts:	5
------------------------	---



It can be done

BATTELLE - NORWELL OPERATIONS SAMPLE SPECIFIC COMMENTS

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Sample ID:	Comment:	Date/Initials:
CR649PB-FS	Extraction for all samples began at 10:49am	08/23/18 SAS
CR649PB-FS	Sample extraction ended at 11:16am	08/23/18 SAS
CR650LCS-FS	Sample extraction ended at 11:15am	08/23/18 SAS
J7566-FS	Sample extraction ended at 11:21am	08/23/18 SAS
J7568-FS	Sample had a sulfurous odor	08/23/18 SAS
J7568-FS	Sample extraction ended at 11:18am	08/23/18 SAS
J7570-FS	Sample was yellow in color.	08/23/18 SAS
J7570-FS	Sample extraction ended at 11:20am	08/23/18 SAS



It can be done

**BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM**

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)

100119154-
SE0375

18-0523

CTO-SE0375: Drinking Water Analysis

W

Entered By:

On:

Task Leader Approval:

On:

SupervisorApproval:

On:

PM Approval:

On:

Analytical Calibrations

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
4	MeOH		8/25/2018 1:56:55 PM	5-0371.dam	18-0523_18-0524.wiff
7	JZ80	L3	8/25/2018 2:23:46 PM	5-0371.dam	18-0523_18-0524.wiff
8	JZ81	L4	8/25/2018 2:32:41 PM	5-0371.dam	18-0523_18-0524.wiff
9	JZ82	L5	8/25/2018 2:41:37 PM	5-0371.dam	18-0523_18-0524.wiff
10	JZ83	L6	8/25/2018 2:50:33 PM	5-0371.dam	18-0523_18-0524.wiff
11	JZ84	L7	8/25/2018 2:59:30 PM	5-0371.dam	18-0523_18-0524.wiff
12	JZ85	L8	8/25/2018 3:08:27 PM	5-0371.dam	18-0523_18-0524.wiff
13	JZ86	L9	8/25/2018 3:17:23 PM	5-0371.dam	18-0523_18-0524.wiff
14	KZ08 IB	Instrument Blank	8/25/2018 3:26:21 PM	5-0371.dam	18-0523_18-0524.wiff
15	JZ77 ICC	ICC	8/25/2018 3:35:16 PM	5-0371.dam	18-0523_18-0524.wiff
16	MeOH		8/25/2018 3:44:13 PM	5-0371.dam	18-0523_18-0524.wiff
17	CR649PB-FS(0)	Procedural Blank	8/25/2018 3:53:09 PM	5-0371.dam	18-0523_18-0524.wiff
18	CR650LCS-FS(0)	Laboratory Control Sample	8/25/2018 4:02:04 PM	5-0371.dam	18-0523_18-0524.wiff
19	J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/2018 4:10:59 PM	5-0371.dam	18-0523_18-0524.wiff
20	J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/2018 4:19:57 PM	5-0371.dam	18-0523_18-0524.wiff
21	J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/2018 4:28:54 PM	5-0371.dam	18-0523_18-0524.wiff
22	JZ81 CCV	CCV	8/25/2018 4:37:51 PM	5-0371.dam	18-0523_18-0524.wiff
16	MeOH		8/25/2018 4:46:47 PM	5-0371.dam	18-0523_18-0524.wiff
23	CR651PB-FS(0)	Procedural Blank	8/25/2018 4:55:43 PM	5-0371.dam	18-0523_18-0524.wiff
24	CR652LCS-FS(0)	Laboratory Control Sample	8/25/2018 5:04:39 PM	5-0371.dam	18-0523_18-0524.wiff
25	J7561-FS(0)	JAX-RES-08202018-1100-26-FRB	8/25/2018 5:13:36 PM	5-0371.dam	18-0523_18-0524.wiff
26	J7563-FS(0)	JAX-RES-08202018-1310-28-FRB	8/25/2018 5:22:32 PM	5-0371.dam	18-0523_18-0524.wiff
27	JZ82-CCV	CCV	8/25/2018 5:31:27 PM	5-0371.dam	18-0523_18-0524.wiff

1 ↓

1 Sample reported with another batch. DMS 8/27/2018



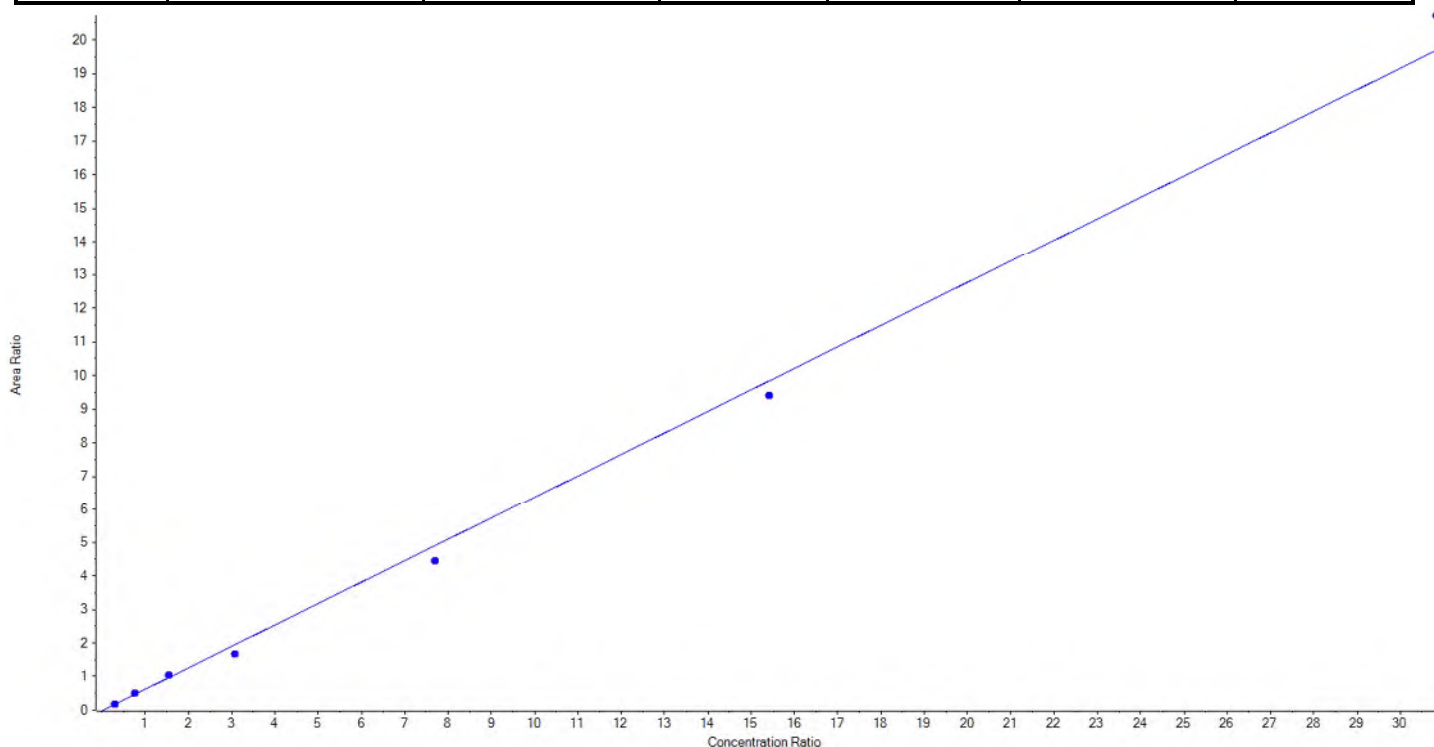
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFBS_1	Data File	18-0523_18-0524.wiff
MRM Transition	298.9 / 80.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.63929x + -0.02044$ ($r = 0.99745$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	88.60	92.623416	104.5
8	JZ81	L4	True	221.50	242.779569	109.6
9	JZ82	L5	True	443.00	481.387037	108.7
10	JZ83	L6	True	885.00	757.513782	85.6
11	JZ84	L7	True	2212.50	2006.637947	90.7
12	JZ85	L8	True	4425.00	4234.668378	95.7
13	JZ86	L9	True	8850.00	9309.989871	105.2





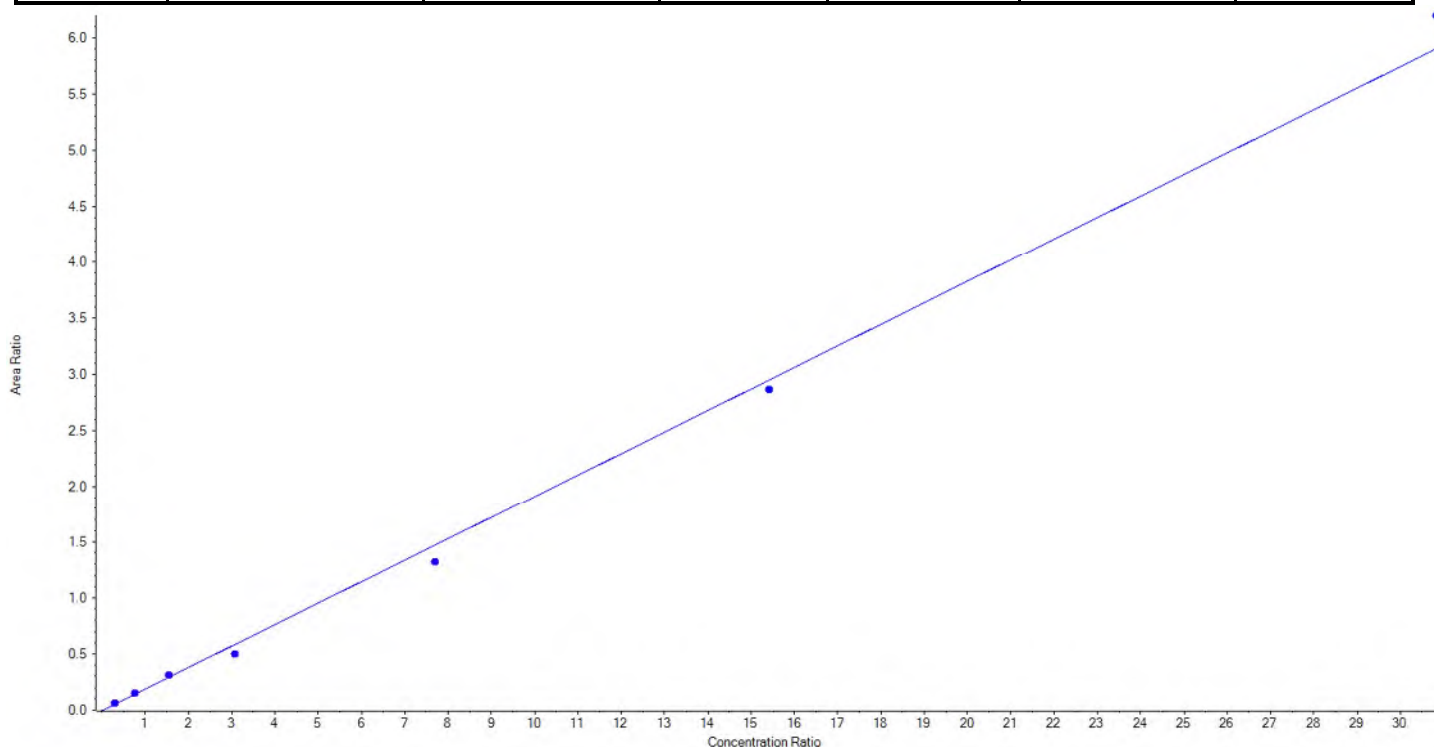
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFBS_2	Data File	18-0523_18-0524.wiff
MRM Transition	298.9 / 99.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.19159x + -0.00443$ ($r = 0.99751$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	88.60	99.813968	112.7
8	JZ81	L4	True	221.50	229.053645	103.4
9	JZ82	L5	True	443.00	475.566098	107.4
10	JZ83	L6	True	885.00	750.913541	84.9
11	JZ84	L7	True	2212.50	1982.617976	89.6
12	JZ85	L8	True	4425.00	4300.235188	97.2
13	JZ86	L9	True	8850.00	9287.399584	104.9





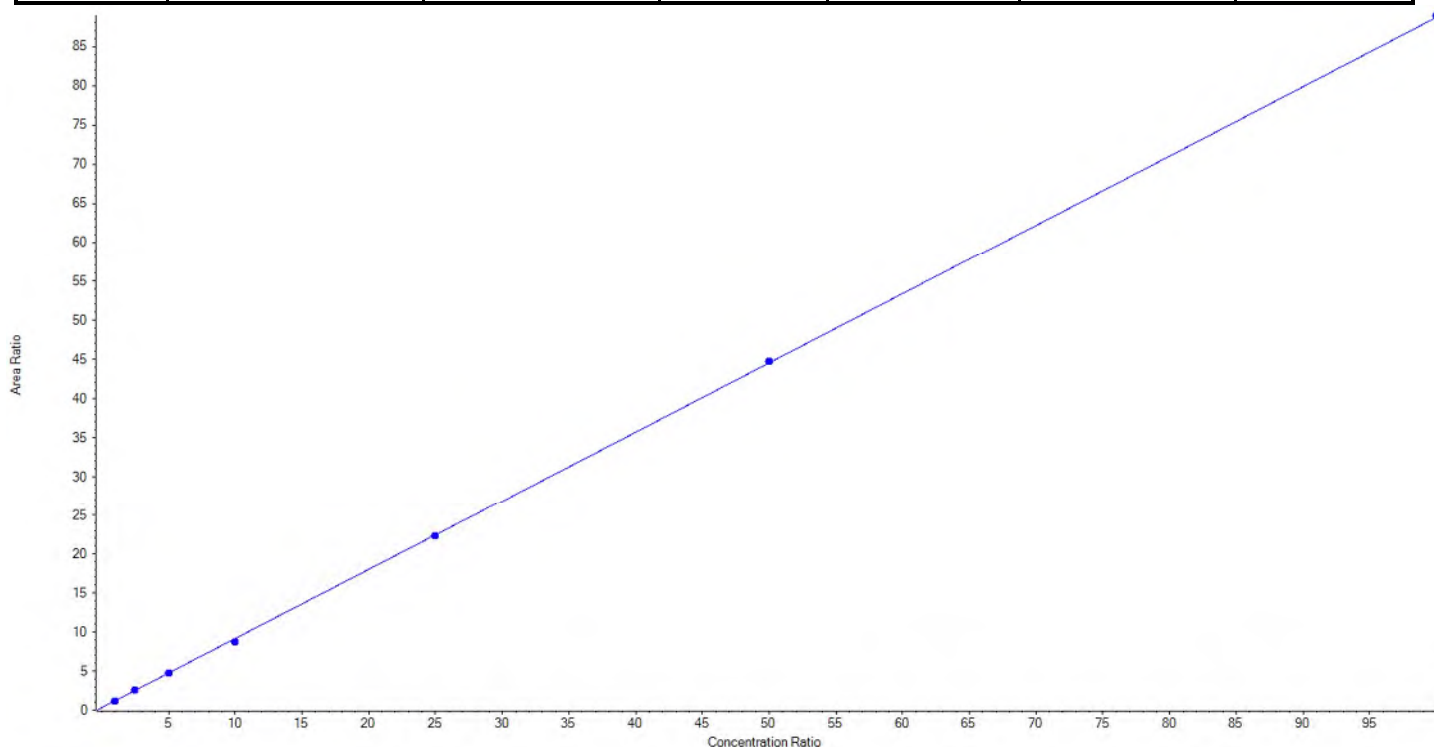
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxA_1	Data File	18-0523_18-0524.wiff
MRM Transition	313.0 / 269.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.88409x + 0.32379$ ($r = 0.99988$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	100.860031	100.9
8	JZ81	L4	True	250.00	258.019492	103.2
9	JZ82	L5	True	500.00	506.144130	101.2
10	JZ83	L6	True	1000.00	942.865717	94.3
11	JZ84	L7	True	2500.00	2490.992575	99.6
12	JZ85	L8	True	5000.00	5026.589126	100.5
13	JZ86	L9	True	10000.00	10024.528929	100.3





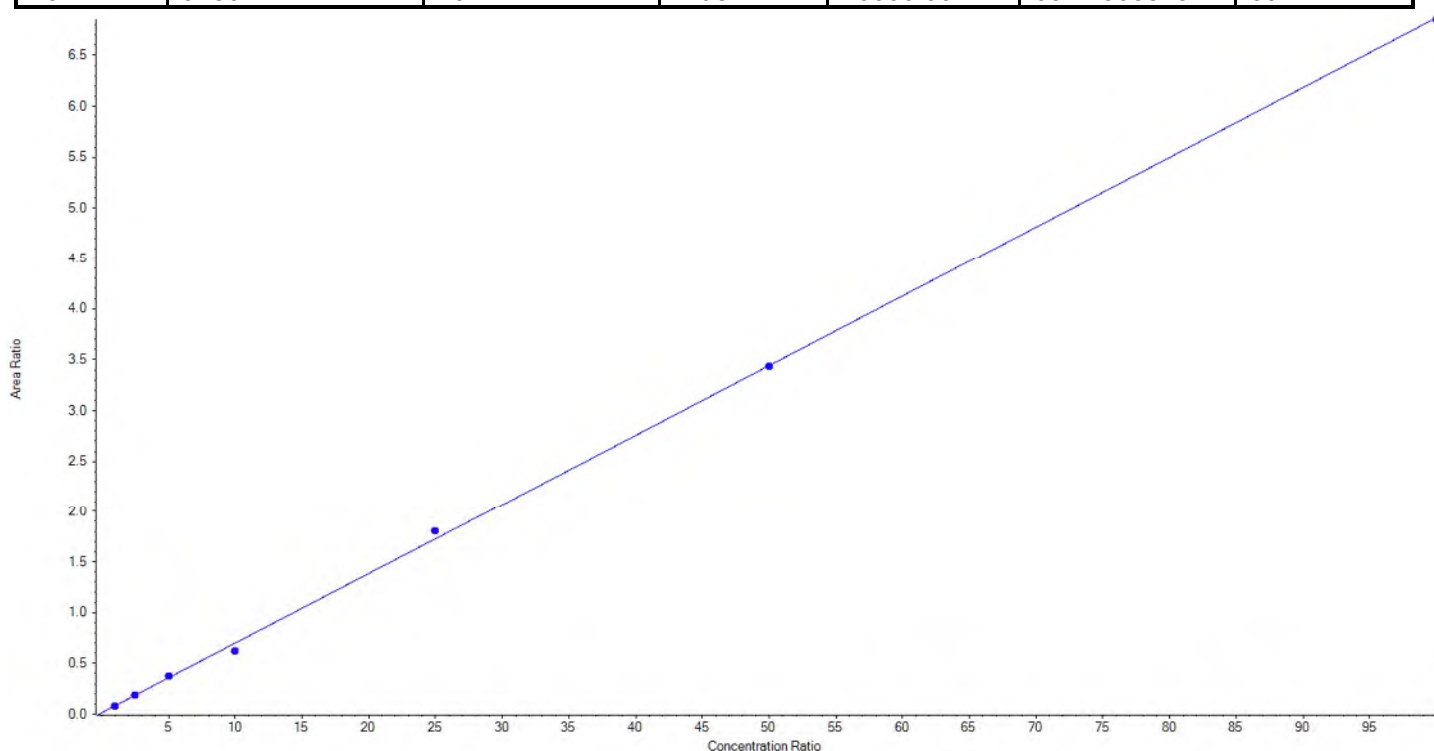
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxA_2	Data File	18-0523_18-0524.wiff
MRM Transition	313.0 / 119.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.06854 x + 0.01472$ ($r = 0.99938$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	99.493988	99.5
8	JZ81	L4	True	250.00	254.937433	102.0
9	JZ82	L5	True	500.00	529.185395	105.8
10	JZ83	L6	True	1000.00	884.440354	88.4
11	JZ84	L7	True	2500.00	2616.806311	104.7
12	JZ85	L8	True	5000.00	4992.630645	99.9
13	JZ86	L9	True	10000.00	9972.505873	99.7





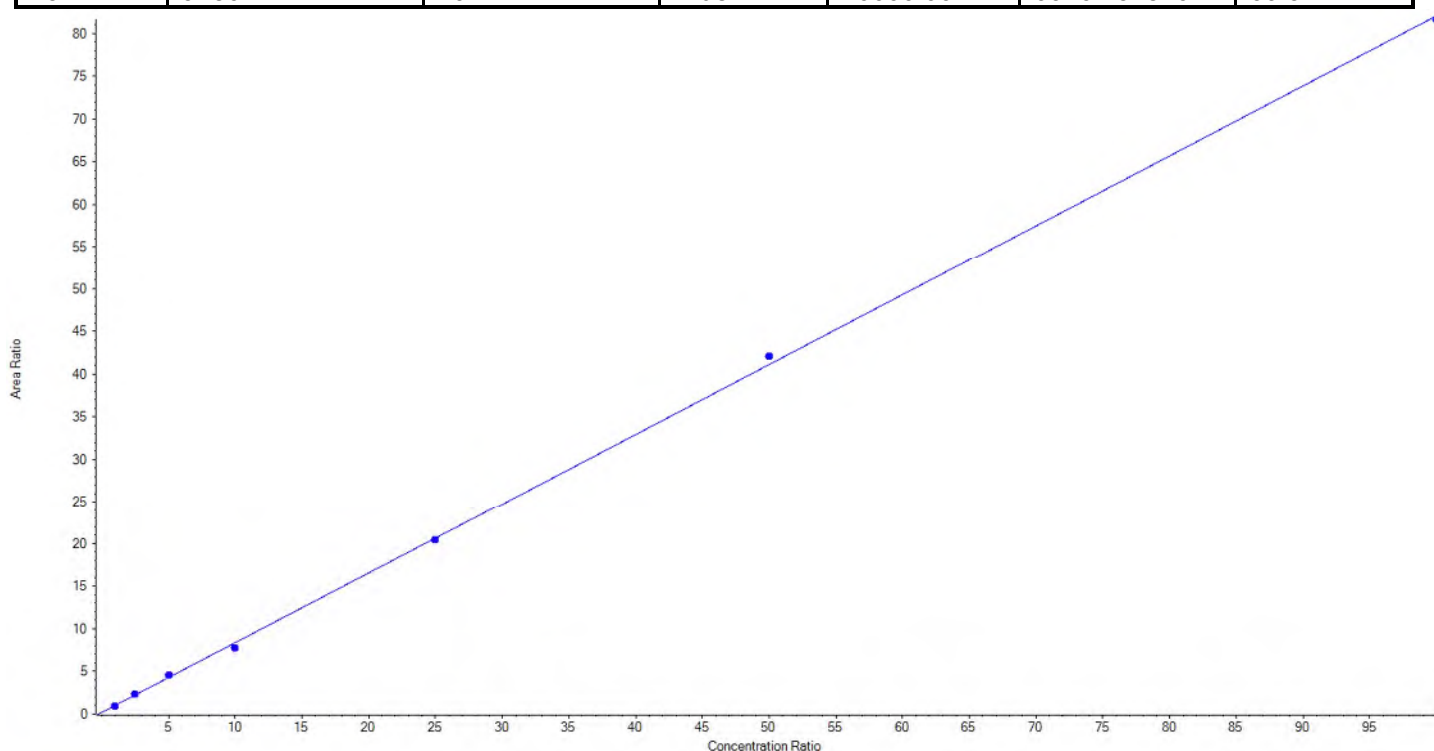
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHpA_1	Data File	18-0523_18-0524.wiff
MRM Transition	363.0 / 319.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.81878x + 0.20212$ ($r = 0.99957$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.591072	92.6
8	JZ81	L4	True	250.00	267.133284	106.9
9	JZ82	L5	True	500.00	539.413778	107.9
10	JZ83	L6	True	1000.00	921.928726	92.2
11	JZ84	L7	True	2500.00	2468.282056	98.7
12	JZ85	L8	True	5000.00	5114.219257	102.3
13	JZ86	L9	True	10000.00	9946.431826	99.5





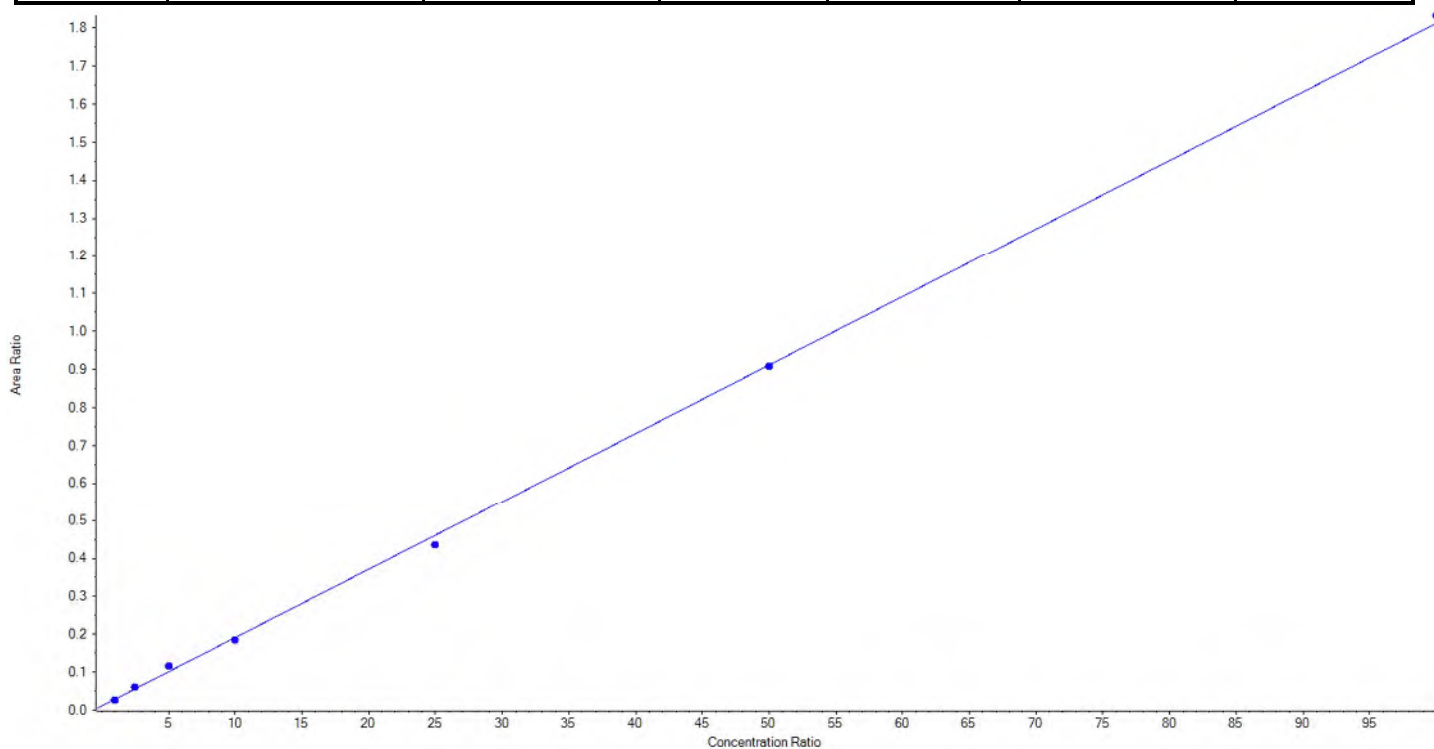
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHpA_2	Data File	18-0523_18-0524.wiff
MRM Transition	363.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.01801 x + 0.01107$ ($r = 0.99914$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	83.599970	83.6
8	JZ81	L4	True	250.00	271.716540	108.7
9	JZ82	L5	True	500.00	581.392877	116.3
10	JZ83	L6	True	1000.00	964.147793	96.4
11	JZ84	L7	True	2500.00	2357.667898	94.3
12	JZ85	L8	True	5000.00	4979.859362	99.6
13	JZ86	L9	True	10000.00	10111.615559	101.1





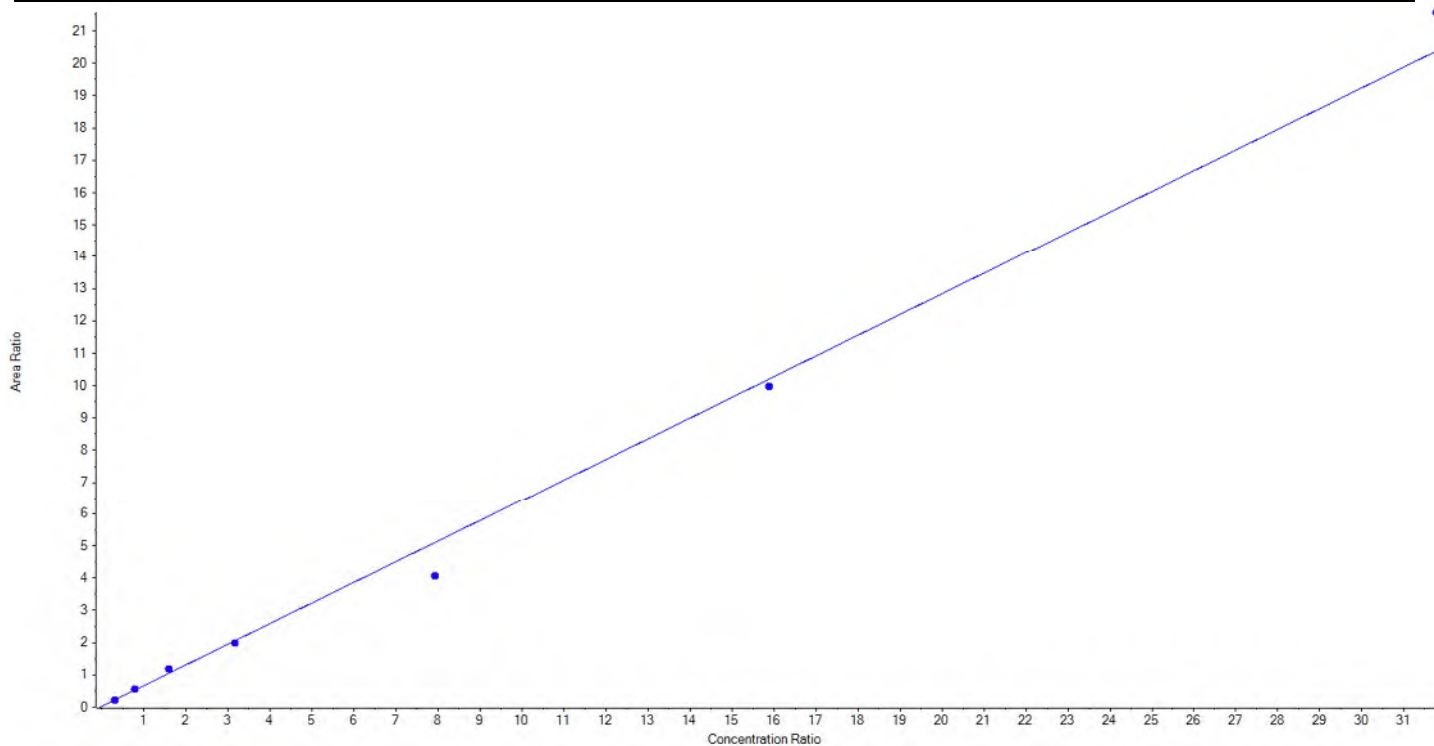
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxS_1	Data File	18-0523_18-0524.wiff
MRM Transition	399.0 / 80.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.64046 x + 0.02580$ ($r = 0.99537$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	91.20	91.932243	100.8
8	JZ81	L4	True	228.00	244.692862	107.3
9	JZ82	L5	True	456.00	514.827115	112.9
10	JZ83	L6	True	912.00	875.796194	96.0
11	JZ84	L7	True	2280.00	1807.484503	79.3
12	JZ85	L8	True	4560.00	4462.151829	97.9
13	JZ86	L9	True	9120.00	9650.315253	105.8





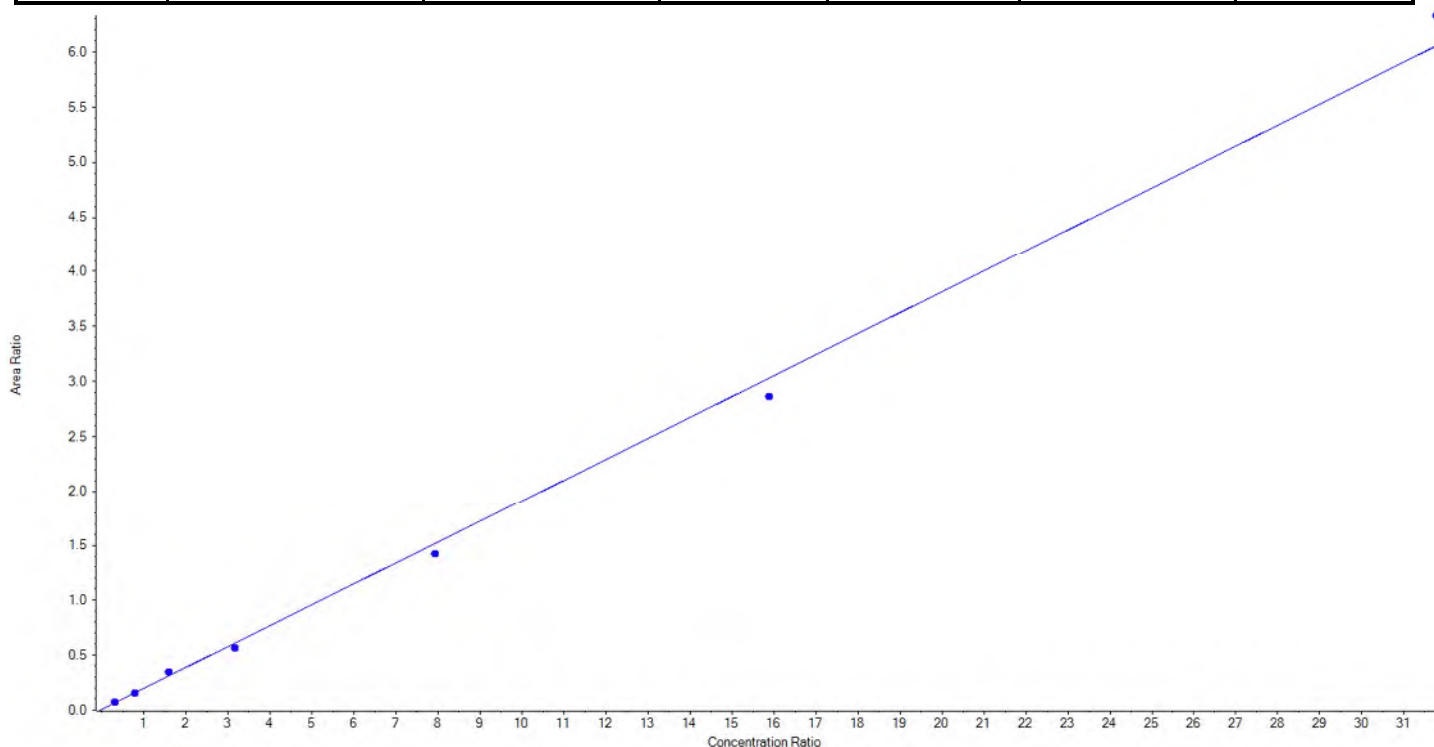
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxS_2	Data File	18-0523_18-0524.wiff
MRM Transition	399.0 / 99.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.19038x + 0.00736$ ($r = 0.99827$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	91.20	95.733820	105.0
8	JZ81	L4	True	228.00	225.396190	98.9
9	JZ82	L5	True	456.00	505.854625	110.9
10	JZ83	L6	True	912.00	843.569800	92.5
11	JZ84	L7	True	2280.00	2138.549468	93.8
12	JZ85	L8	True	4560.00	4305.685887	94.4
13	JZ86	L9	True	9120.00	9532.410210	104.5





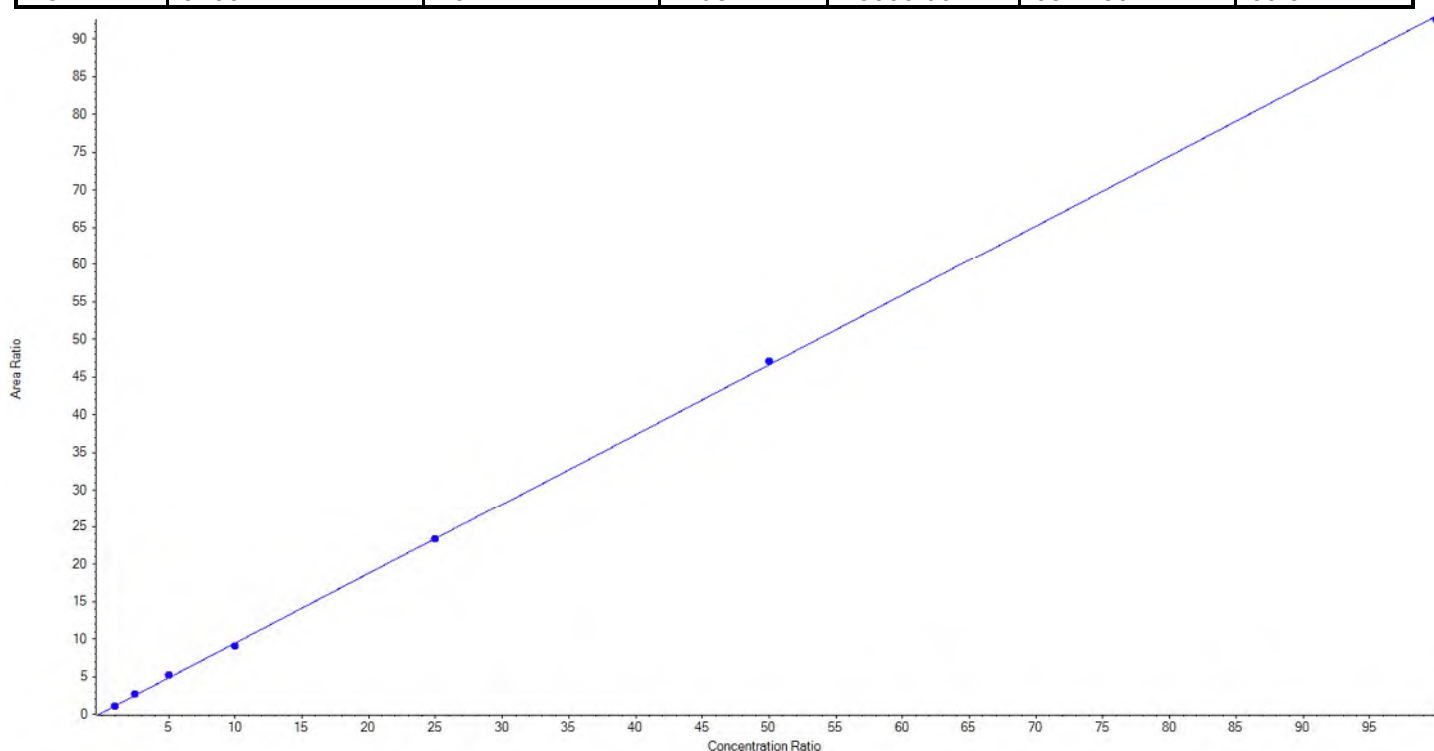
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOA_1	Data File	18-0523_18-0524.wiff
MRM Transition	413.0 / 369.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.92874 x + 0.17528$ ($r = 0.99978$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	90.419829	90.4
8	JZ81	L4	True	250.00	265.217814	106.1
9	JZ82	L5	True	500.00	536.200392	107.2
10	JZ83	L6	True	1000.00	956.983740	95.7
11	JZ84	L7	True	2500.00	2500.350046	100.0
12	JZ85	L8	True	5000.00	5053.230955	101.1
13	JZ86	L9	True	10000.00	9947.597224	99.5





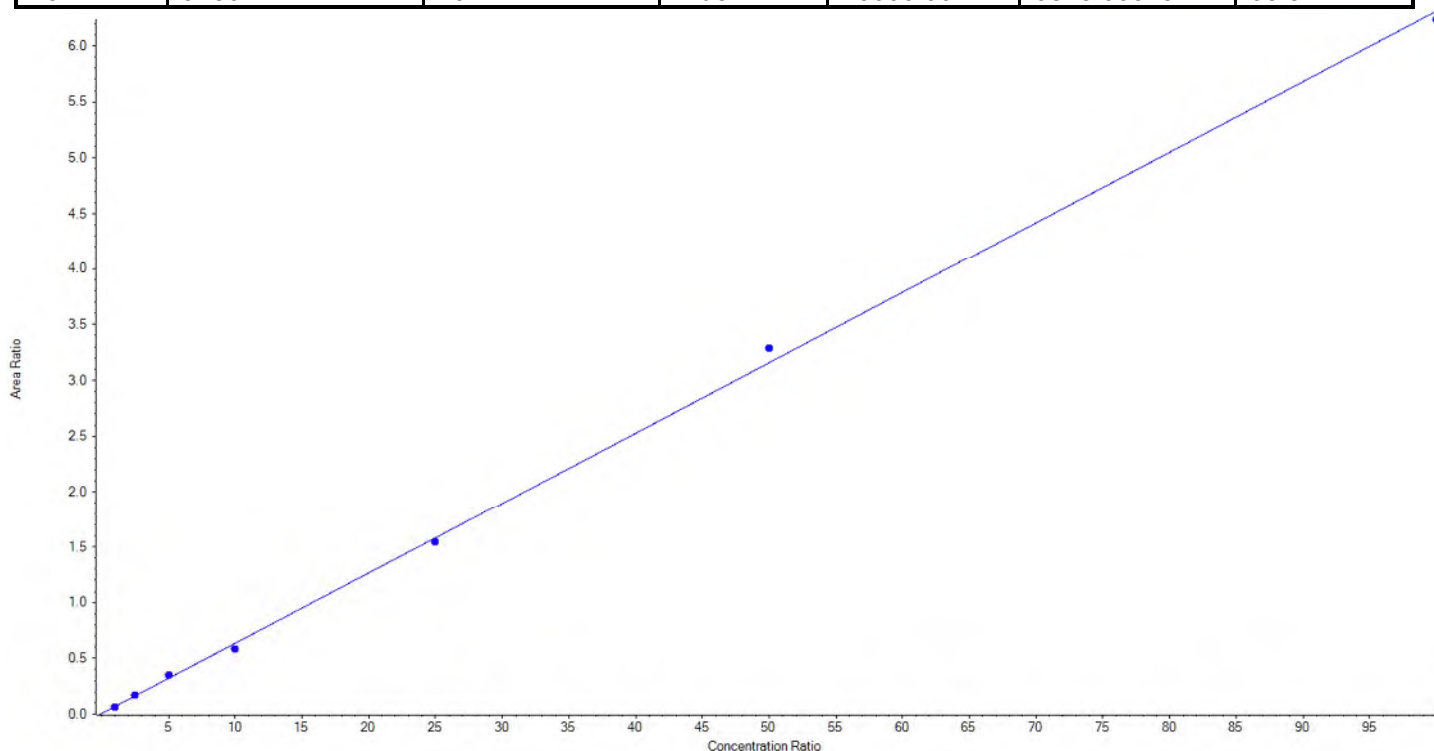
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOA_2	Data File	18-0523_18-0524.wiff
MRM Transition	413.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.06305 x + 0.00510$ ($r = 0.99923$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	91.488891	91.5
8	JZ81	L4	True	250.00	263.853603	105.5
9	JZ82	L5	True	500.00	554.473217	110.9
10	JZ83	L6	True	1000.00	914.495818	91.5
11	JZ84	L7	True	2500.00	2444.886244	97.8
12	JZ85	L8	True	5000.00	5202.197074	104.0
13	JZ86	L9	True	10000.00	9878.605154	98.8





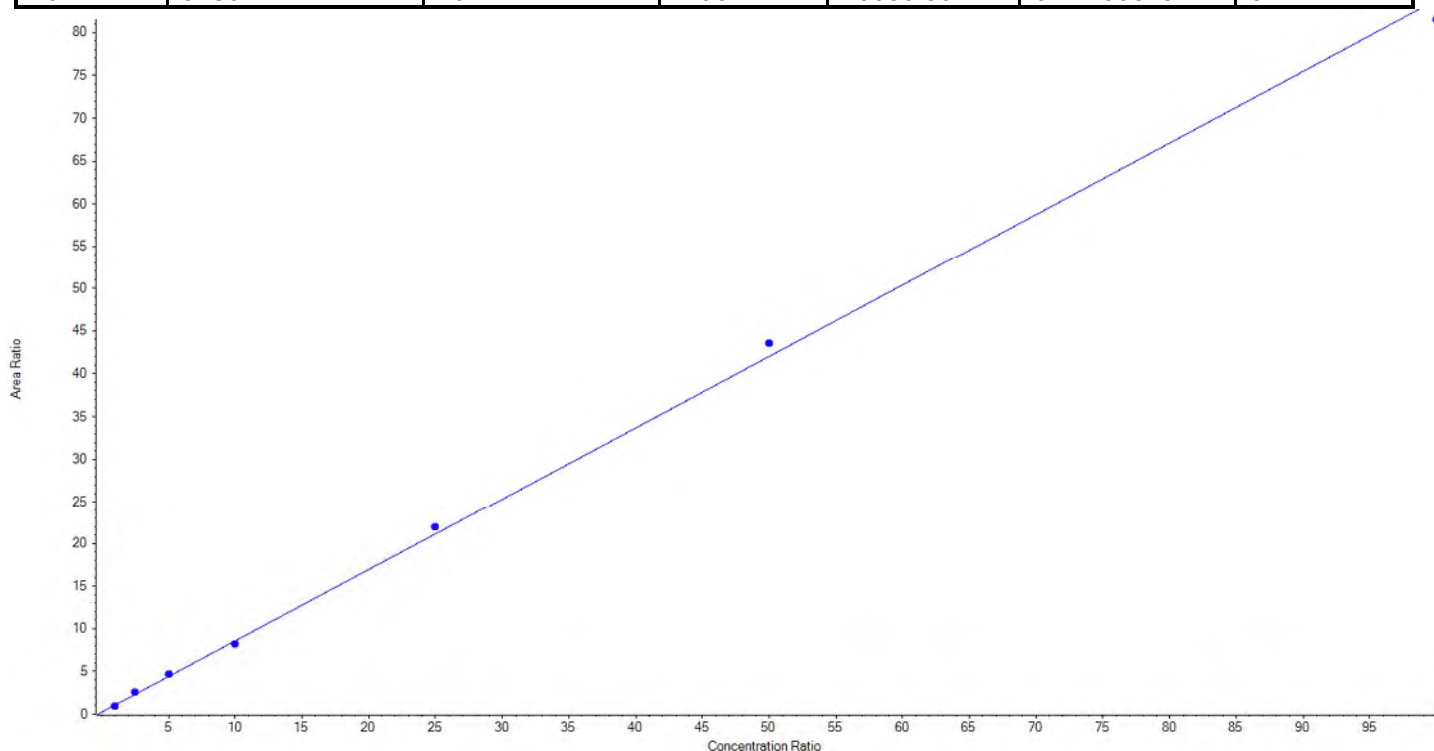
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFNA_1	Data File	18-0523_18-0524.wiff
MRM Transition	463.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.83580x + 0.23553$ ($r = 0.99913$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	82.476112	82.5
8	JZ81	L4	True	250.00	278.245015	111.3
9	JZ82	L5	True	500.00	531.668423	106.3
10	JZ83	L6	True	1000.00	951.587519	95.2
11	JZ84	L7	True	2500.00	2592.677432	103.7
12	JZ85	L8	True	5000.00	5189.289362	103.8
13	JZ86	L9	True	10000.00	9724.056137	97.2





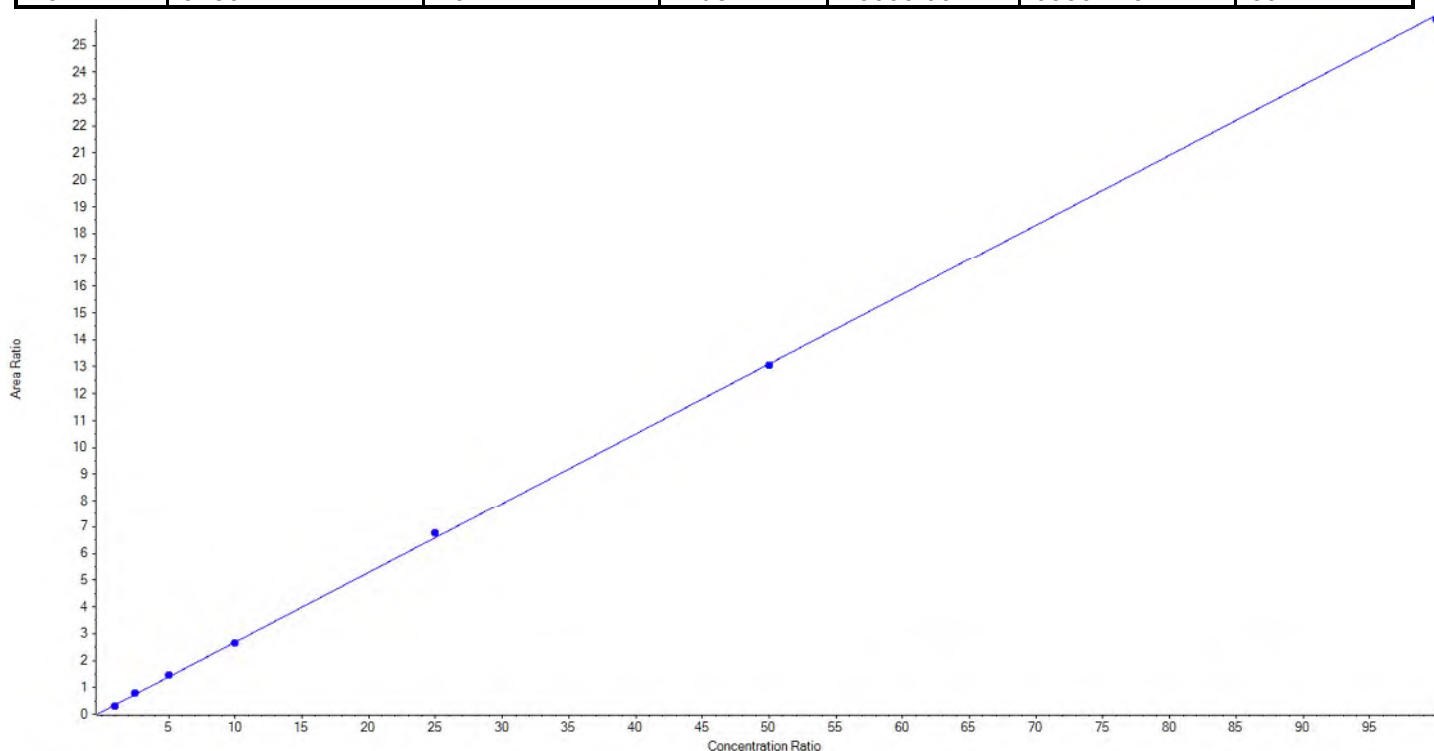
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFNA_2	Data File	18-0523_18-0524.wiff
MRM Transition	463.0 / 219.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.26038x + 0.08356$ ($r = 0.99978$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	86.279636	86.3
8	JZ81	L4	True	250.00	273.929049	109.6
9	JZ82	L5	True	500.00	520.946615	104.2
10	JZ83	L6	True	1000.00	983.697300	98.4
11	JZ84	L7	True	2500.00	2562.408880	102.5
12	JZ85	L8	True	5000.00	4986.595092	99.7
13	JZ86	L9	True	10000.00	9936.143427	99.4





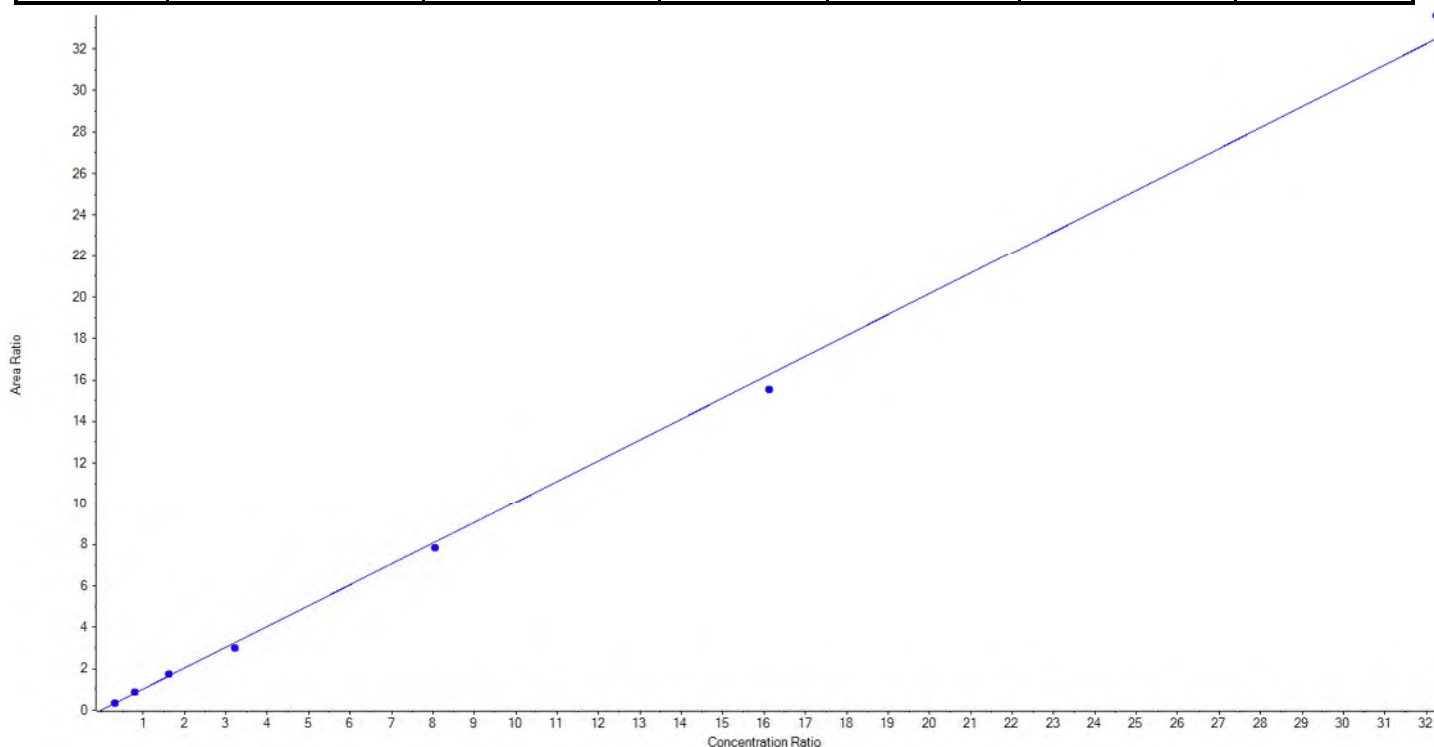
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOS_1	Data File	18-0523_18-0524.wiff
MRM Transition	499.0 / 80.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.00691 x + 0.01749$ (r = 0.99894) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	92.60	92.053366	99.4
8	JZ81	L4	True	231.50	245.760890	106.2
9	JZ82	L5	True	463.00	496.934120	107.3
10	JZ83	L6	True	925.60	848.869547	91.7
11	JZ84	L7	True	2314.00	2229.662049	96.4
12	JZ85	L8	True	4628.00	4425.297687	95.6
13	JZ86	L9	True	9256.00	9572.122341	103.4





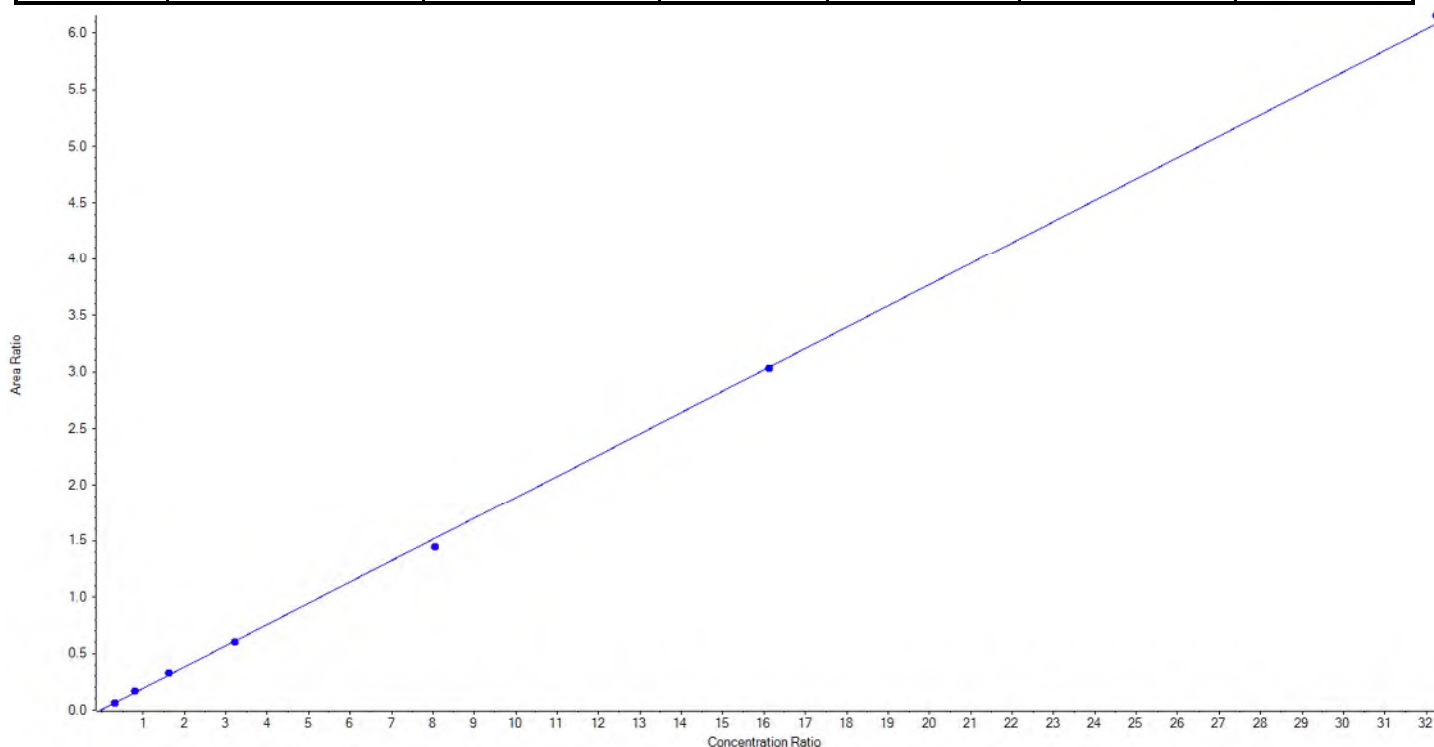
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOS_2	Data File	18-0523_18-0524.wiff
MRM Transition	499.0 / 99.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.18836 x + 0.00460$ ($r = 0.99959$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	92.60	84.589764	91.4
8	JZ81	L4	True	231.50	249.900249	108.0
9	JZ82	L5	True	463.00	493.823007	106.7
10	JZ83	L6	True	925.60	912.177512	98.6
11	JZ84	L7	True	2314.00	2188.533435	94.6
12	JZ85	L8	True	4628.00	4615.206815	99.7
13	JZ86	L9	True	9256.00	9366.469218	101.2





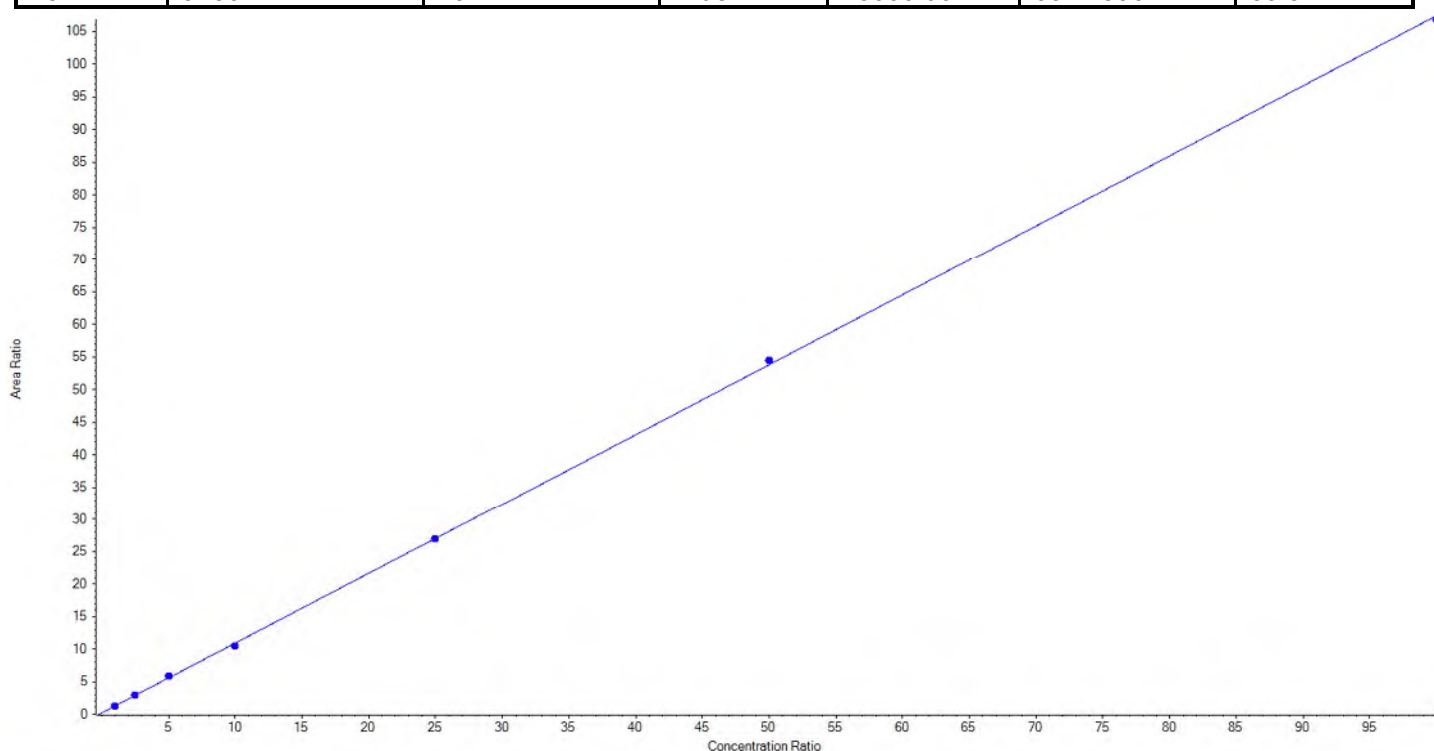
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFDA_1	Data File	18-0523_18-0524.wiff
MRM Transition	513.0 / 469.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.07195x + 0.19352$ ($r = 0.99985$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	93.455449	93.5
8	JZ81	L4	True	250.00	260.370572	104.2
9	JZ82	L5	True	500.00	527.458555	105.5
10	JZ83	L6	True	1000.00	961.920584	96.2
11	JZ84	L7	True	2500.00	2501.130905	100.1
12	JZ85	L8	True	5000.00	5061.067717	101.2
13	JZ86	L9	True	10000.00	9944.596217	99.5





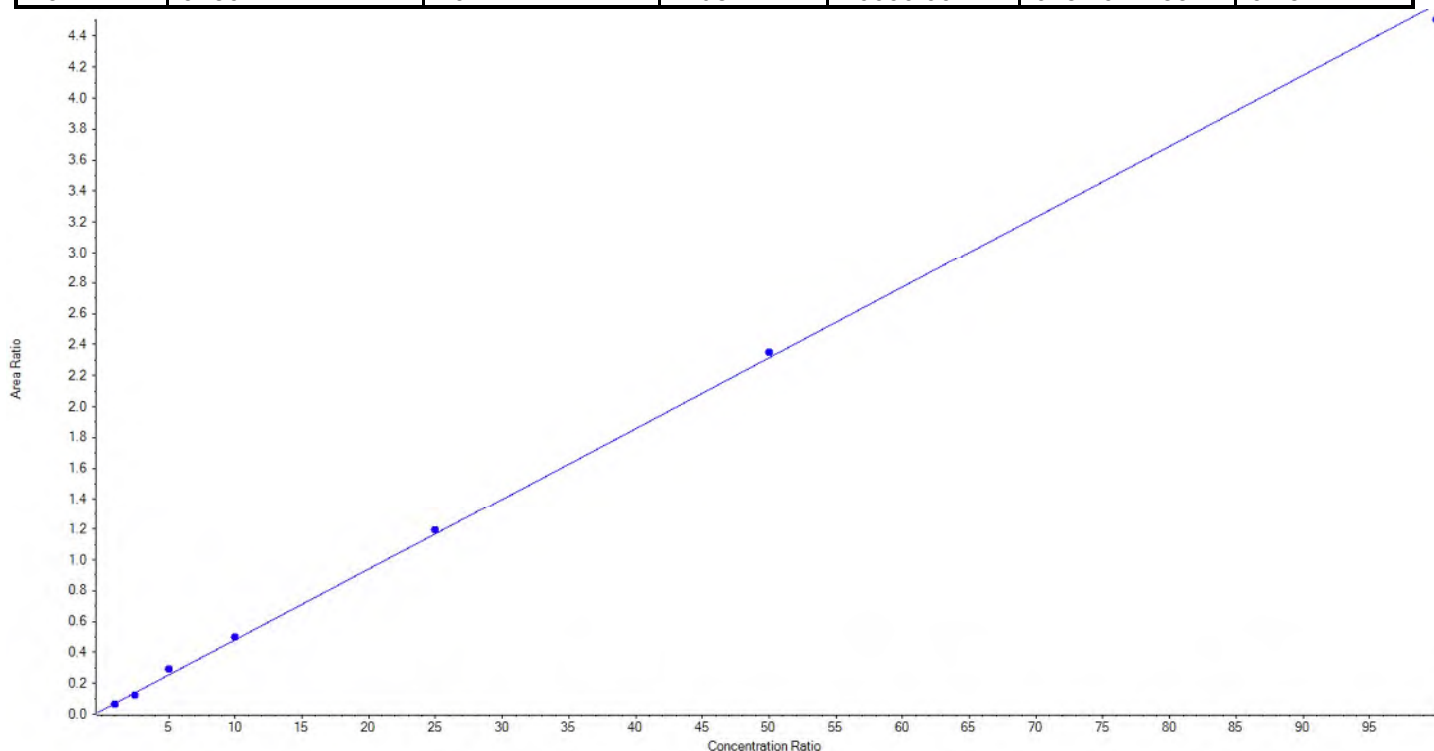
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFDA_2	Data File	18-0523_18-0524.wiff
MRM Transition	513.0 / 219.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.04582x + 0.02416$ ($r = 0.99907$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	91.140280	91.1
8	JZ81	L4	True	250.00	213.880578	85.6
9	JZ82	L5	True	500.00	590.959868	118.2
10	JZ83	L6	True	1000.00	1035.220526	103.5
11	JZ84	L7	True	2500.00	2552.909954	102.1
12	JZ85	L8	True	5000.00	5081.817658	101.6
13	JZ86	L9	True	10000.00	9784.071135	97.8





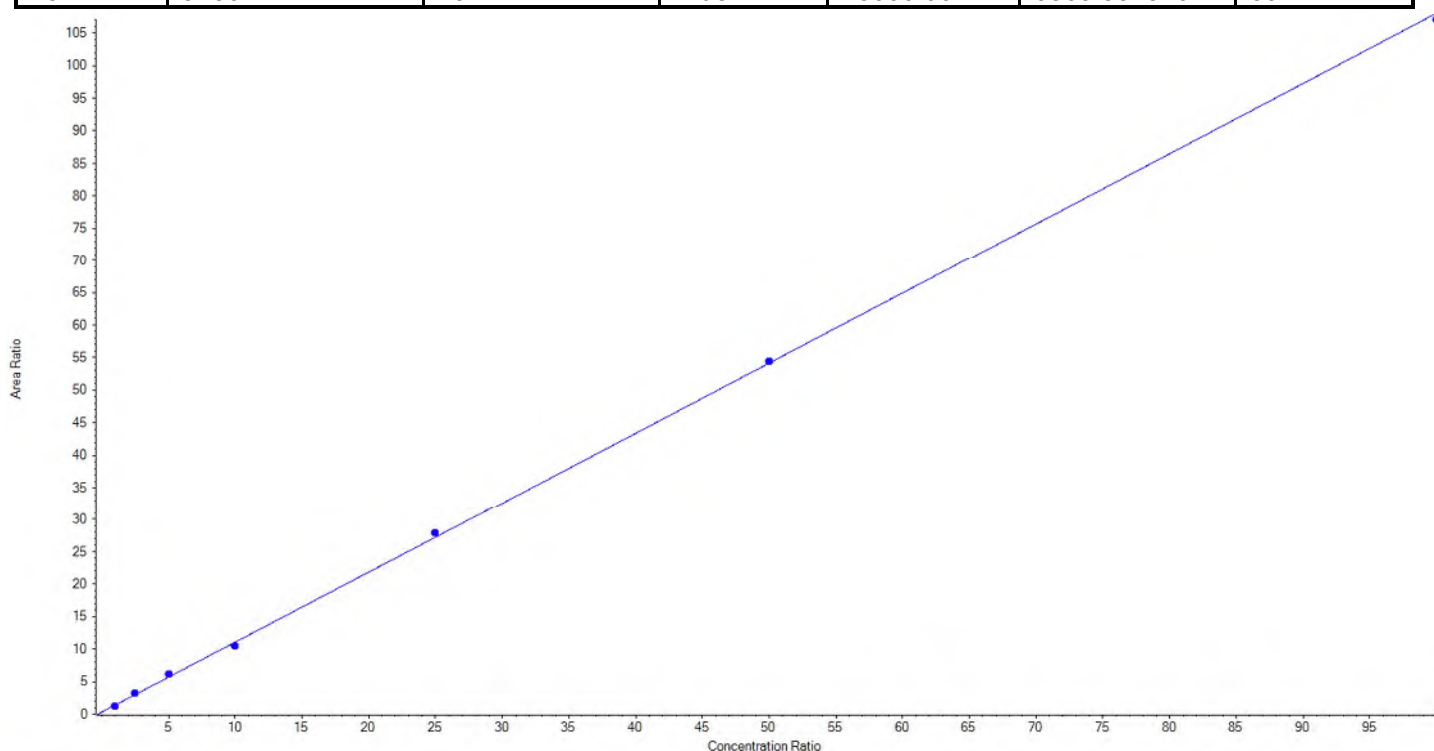
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFUnA_1	Data File	18-0523_18-0524.wiff
MRM Transition	563.0 / 519.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.07699x + 0.31290$ ($r = 0.99959$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	85.922956	85.9
8	JZ81	L4	True	250.00	268.407545	107.4
9	JZ82	L5	True	500.00	549.872129	110.0
10	JZ83	L6	True	1000.00	946.560479	94.7
11	JZ84	L7	True	2500.00	2559.717863	102.4
12	JZ85	L8	True	5000.00	5029.964712	100.6
13	JZ86	L9	True	10000.00	9909.554316	99.1





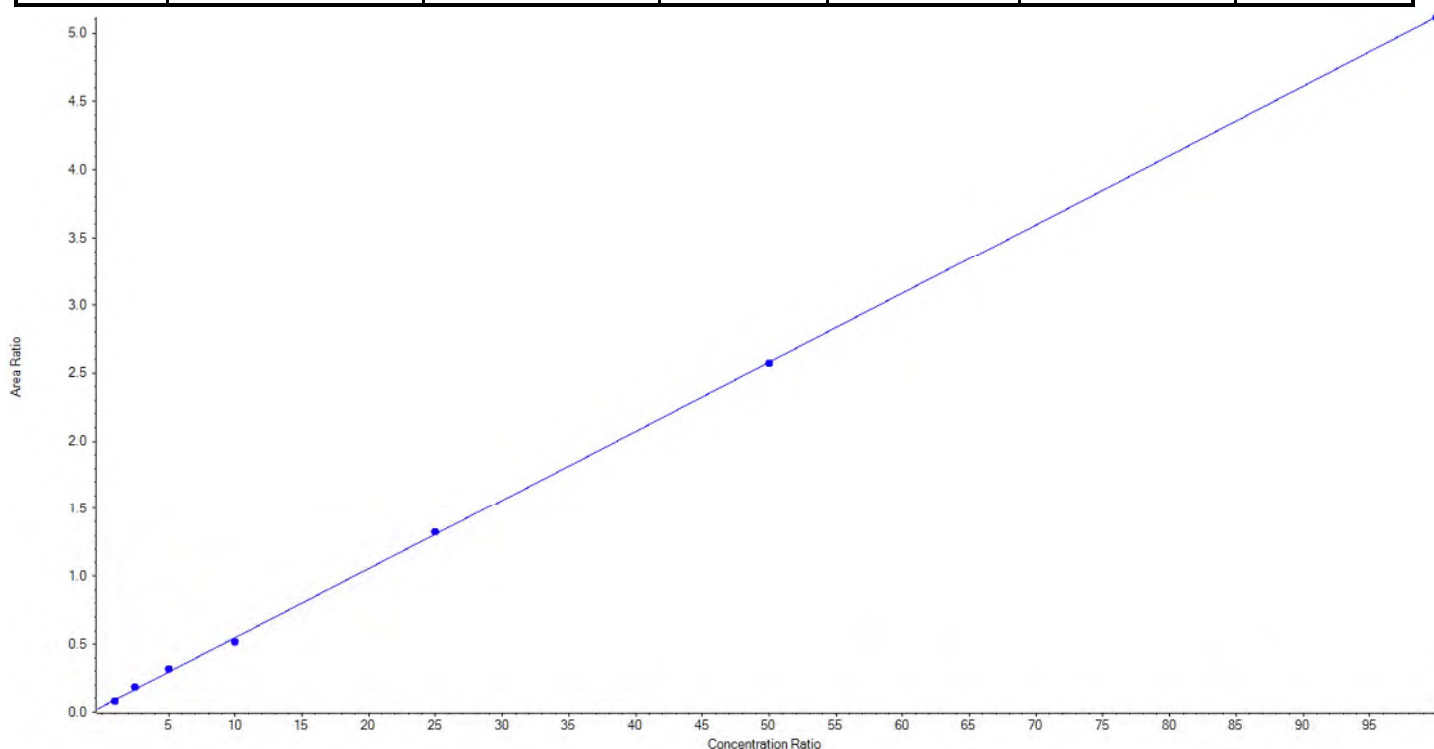
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFUnA_2	Data File	18-0523_18-0524.wiff
MRM Transition	563.0 / 269.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.05079 x + 0.04003$ ($r = 0.99957$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	84.767359	84.8
8	JZ81	L4	True	250.00	281.972160	112.8
9	JZ82	L5	True	500.00	541.060573	108.2
10	JZ83	L6	True	1000.00	934.412077	93.4
11	JZ84	L7	True	2500.00	2526.652698	101.1
12	JZ85	L8	True	5000.00	4991.299563	99.8
13	JZ86	L9	True	10000.00	9989.835571	99.9





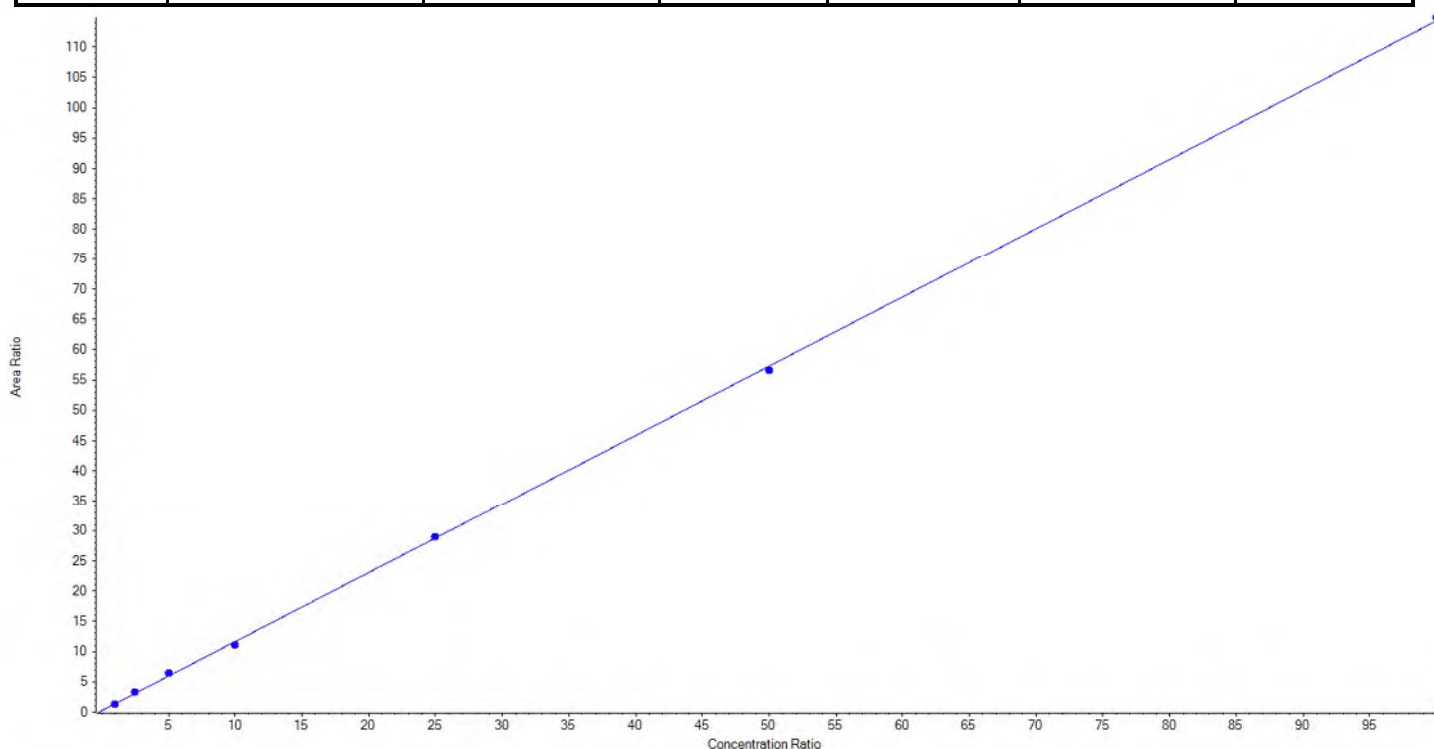
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFD _o A_1	Data File	18-0523_18-0524.wiff
MRM Transition	613.0 / 569.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C ₂ -PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.14042x + 0.24800$ ($r = 0.99965$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	89.319676	89.3
8	JZ81	L4	True	250.00	266.201717	106.5
9	JZ82	L5	True	500.00	549.580243	109.9
10	JZ83	L6	True	1000.00	943.232037	94.3
11	JZ84	L7	True	2500.00	2519.527484	100.8
12	JZ85	L8	True	5000.00	4935.789694	98.7
13	JZ86	L9	True	10000.00	10046.349148	100.5





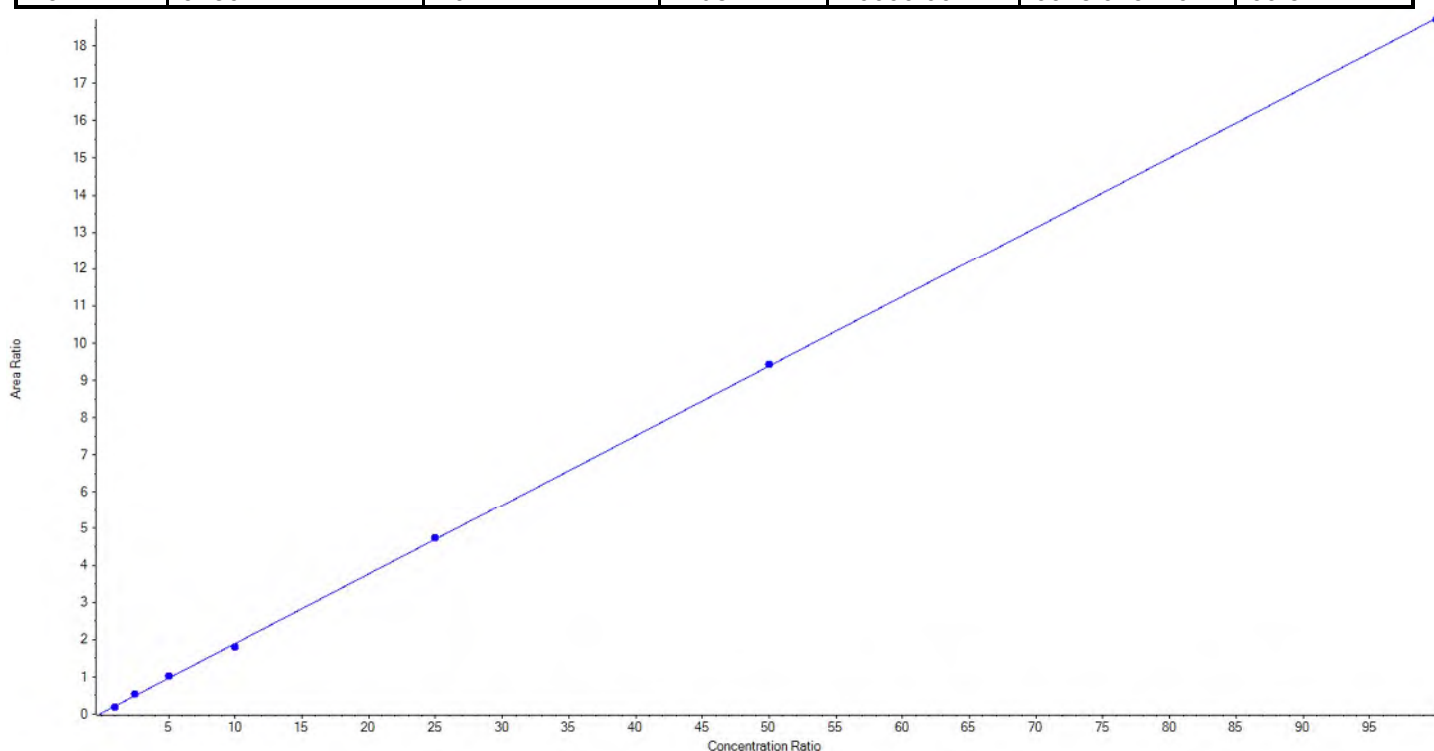
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFD _o A_2	Data File	18-0523_18-0524.wiff
MRM Transition	613.0 / 319.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C ₂ -PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.18715x + 0.02825$ ($r = 0.99976$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	90.125534	90.1
8	JZ81	L4	True	250.00	269.682655	107.9
9	JZ82	L5	True	500.00	534.102042	106.8
10	JZ83	L6	True	1000.00	944.935981	94.5
11	JZ84	L7	True	2500.00	2512.673691	100.5
12	JZ85	L8	True	5000.00	5019.564881	100.4
13	JZ86	L9	True	10000.00	9978.915216	99.8





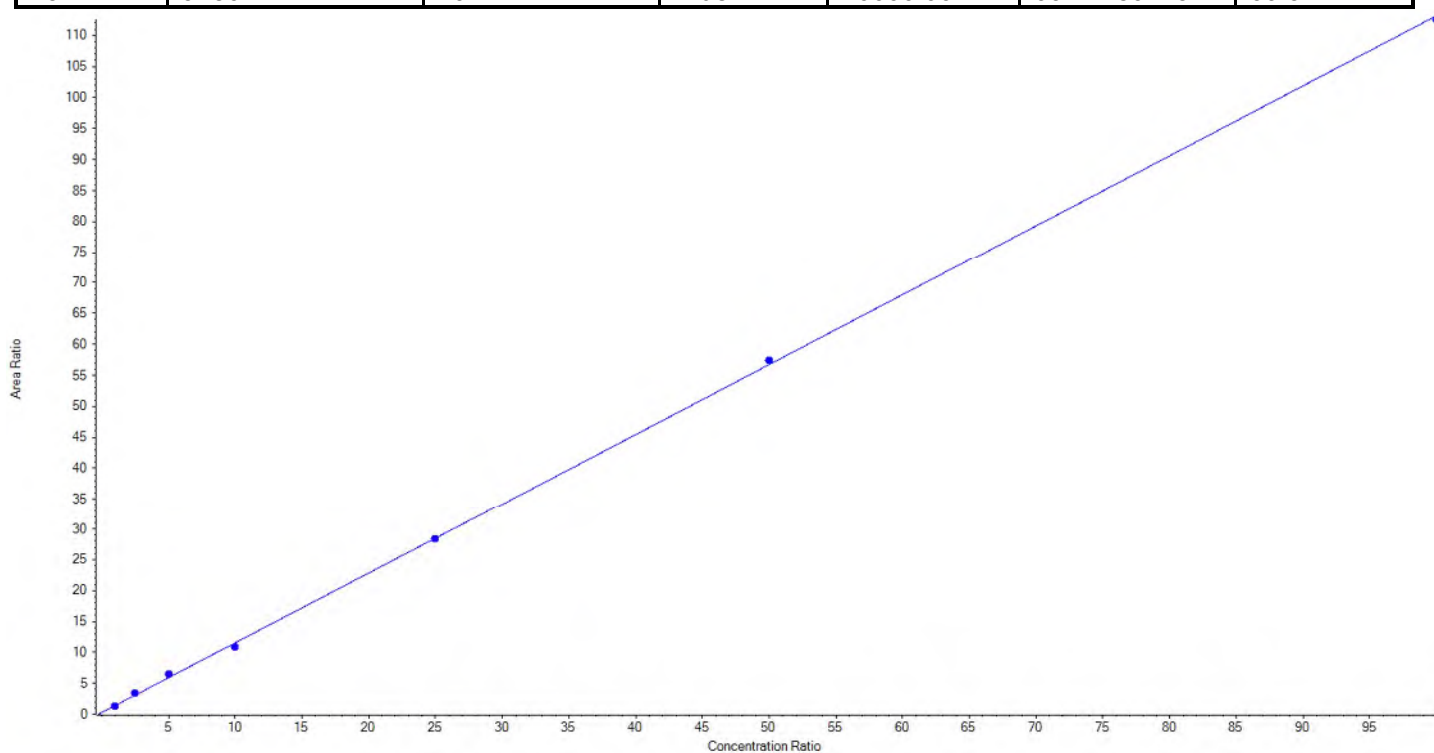
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTTrDA_1	Data File	18-0523_18-0524.wiff
MRM Transition	663.0 / 619.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.12933x + 0.25468$ ($r = 0.99956$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	86.003197	86.0
8	JZ81	L4	True	250.00	273.527871	109.4
9	JZ82	L5	True	500.00	552.118199	110.4
10	JZ83	L6	True	1000.00	937.995187	93.8
11	JZ84	L7	True	2500.00	2490.163845	99.6
12	JZ85	L8	True	5000.00	5065.402477	101.3
13	JZ86	L9	True	10000.00	9944.789223	99.5





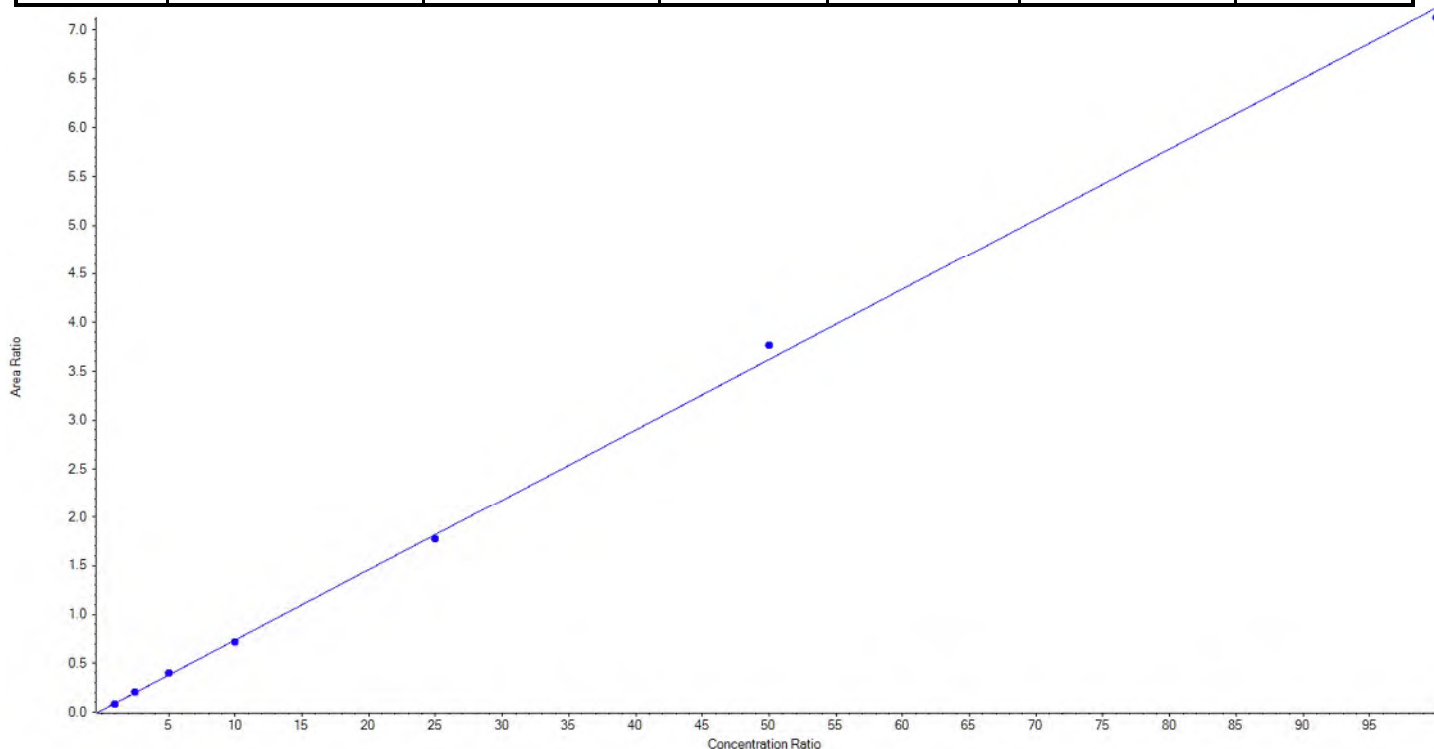
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTTrDA_2	Data File	18-0523_18-0524.wiff
MRM Transition	663.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.07204 x + 0.01868$ (r = 0.99955) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.966029	93.0
8	JZ81	L4	True	250.00	258.583619	103.4
9	JZ82	L5	True	500.00	530.996022	106.2
10	JZ83	L6	True	1000.00	974.563742	97.5
11	JZ84	L7	True	2500.00	2434.490111	97.4
12	JZ85	L8	True	5000.00	5198.133527	104.0
13	JZ86	L9	True	10000.00	9860.266948	98.6





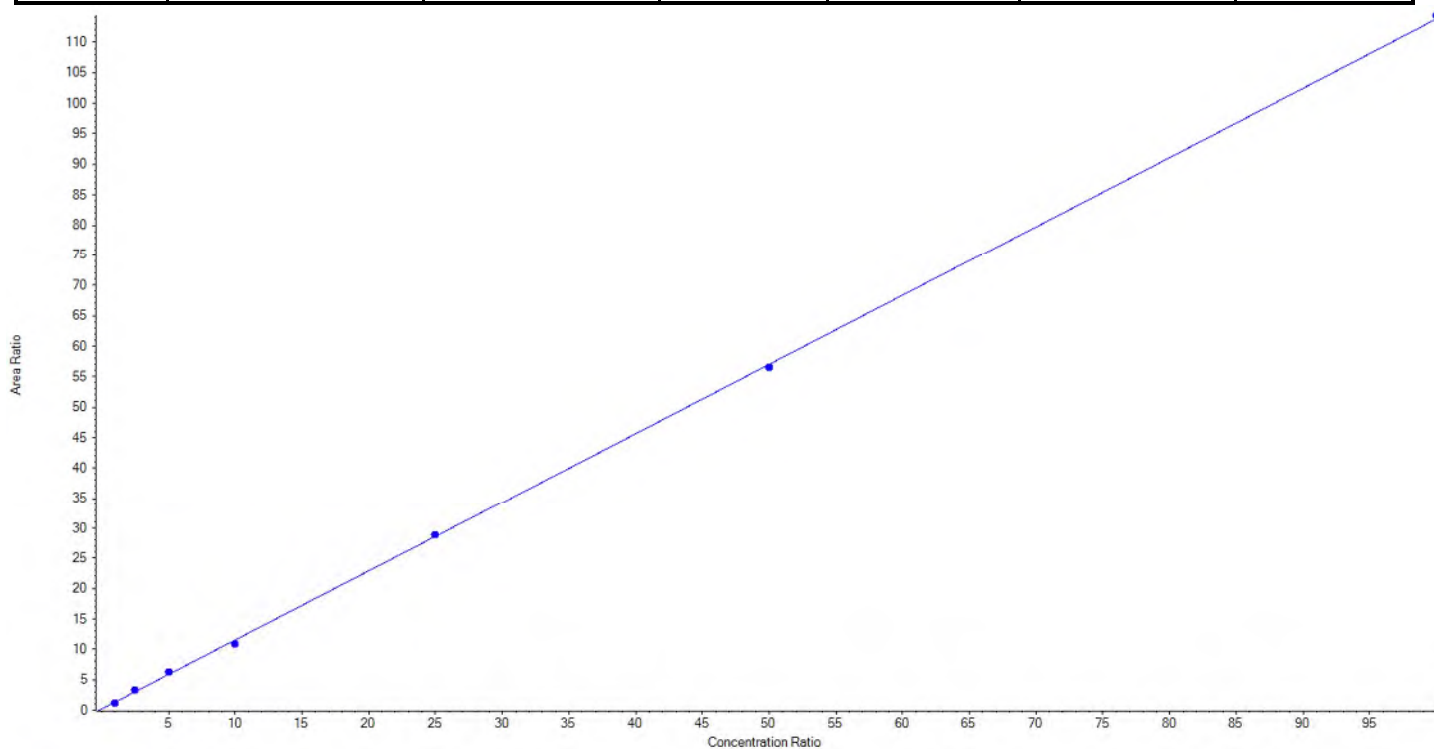
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTeDA_1	Data File	18-0523_18-0524.wiff
MRM Transition	713.0 / 669.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.13640x + 0.17890$ ($r = 0.99973$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.355066	92.4
8	JZ81	L4	True	250.00	269.371525	107.8
9	JZ82	L5	True	500.00	530.325680	106.1
10	JZ83	L6	True	1000.00	934.624759	93.5
11	JZ84	L7	True	2500.00	2518.800863	100.8
12	JZ85	L8	True	5000.00	4957.145646	99.1
13	JZ86	L9	True	10000.00	10047.376461	100.5





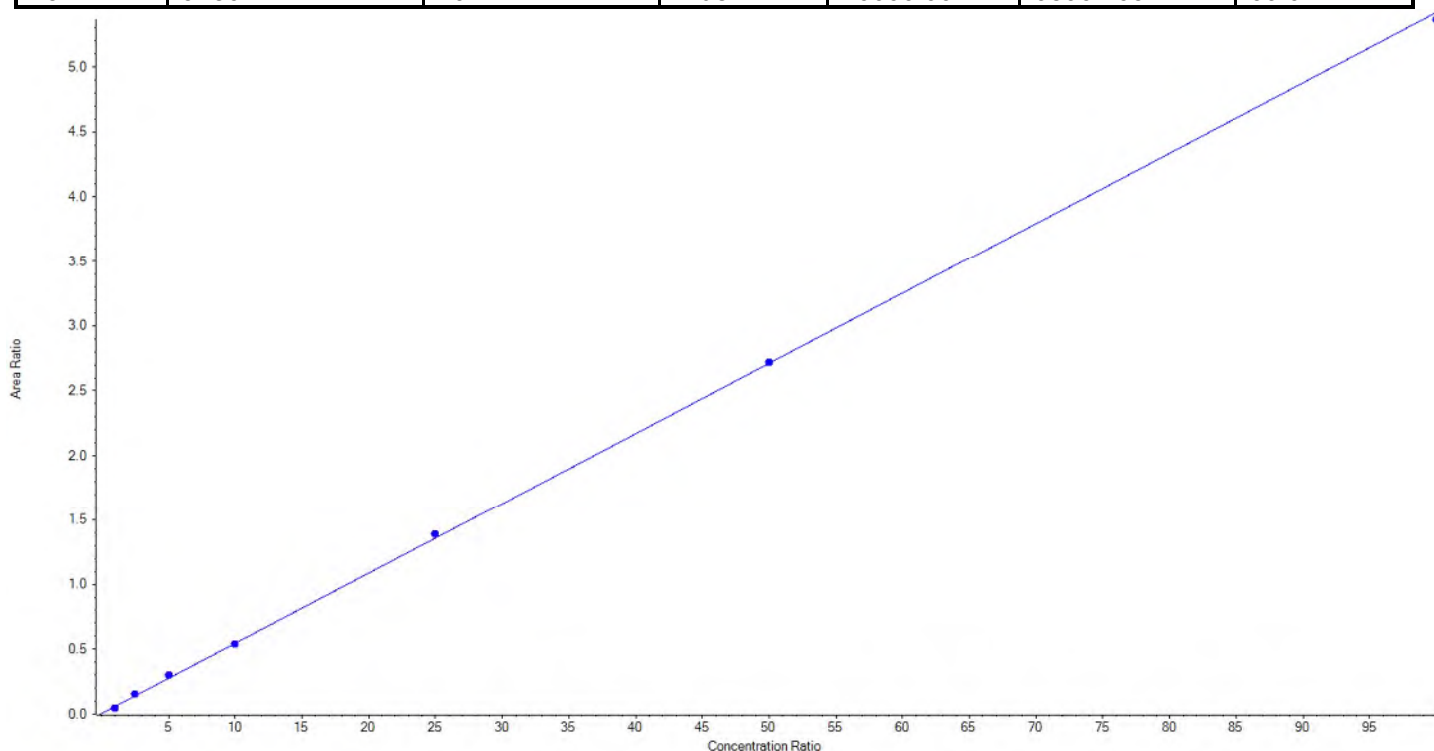
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTeDA_2	Data File	18-0523_18-0524.wiff
MRM Transition	713.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.05414 x + 0.00509$ ($r = 0.99959$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	79.975639	80.0
8	JZ81	L4	True	250.00	279.709523	111.9
9	JZ82	L5	True	500.00	541.889380	108.4
10	JZ83	L6	True	1000.00	983.544860	98.4
11	JZ84	L7	True	2500.00	2553.610487	102.1
12	JZ85	L8	True	5000.00	5015.106890	100.3
13	JZ86	L9	True	10000.00	9896.163222	99.0





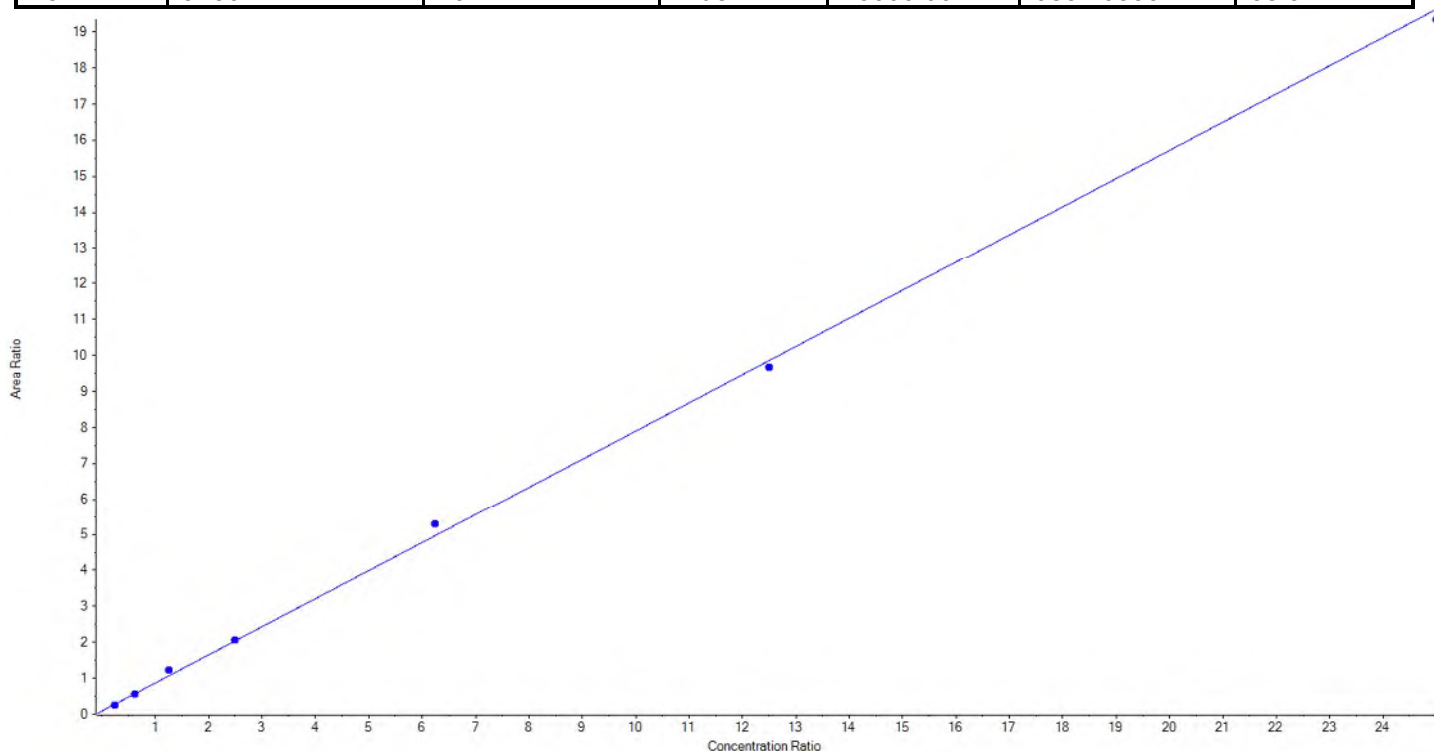
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NMeFOSAA_1	Data File	18-0523_18-0524.wiff
MRM Transition	570.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.78176 x + 0.08322$ (r = 0.99894) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	80.154543	80.2
8	JZ81	L4	True	250.00	243.751348	97.5
9	JZ82	L5	True	500.00	589.038442	117.8
10	JZ83	L6	True	1000.00	1012.438421	101.2
11	JZ84	L7	True	2500.00	2666.393934	106.7
12	JZ85	L8	True	5000.00	4905.539694	98.1
13	JZ86	L9	True	10000.00	9852.683617	98.5





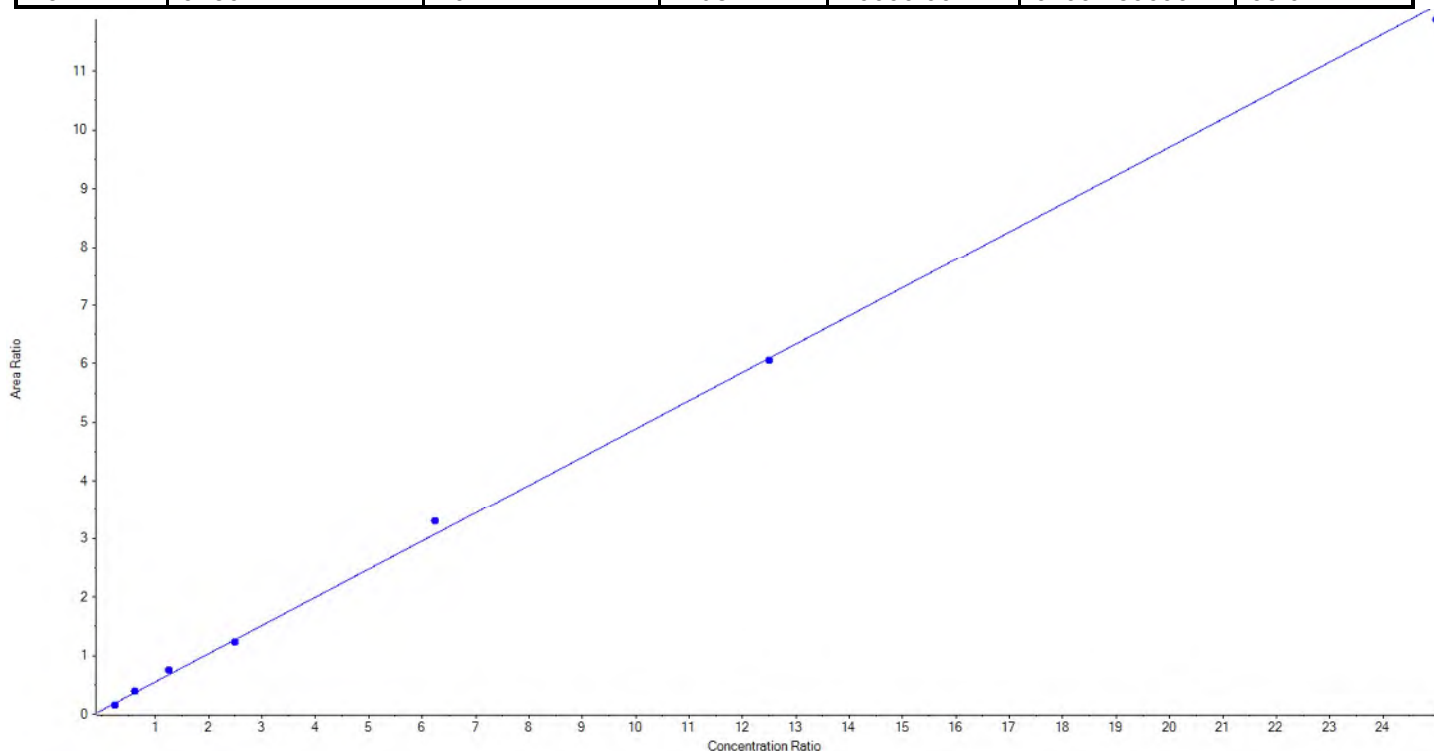
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NMeFOSAA_2	Data File	18-0523_18-0524.wiff
MRM Transition	570.0 / 512.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.48199x + 0.06767$ ($r = 0.99897$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	78.385205	78.4
8	JZ81	L4	True	250.00	263.534247	105.4
9	JZ82	L5	True	500.00	568.791985	113.8
10	JZ83	L6	True	1000.00	972.921249	97.3
11	JZ84	L7	True	2500.00	2691.056234	107.6
12	JZ85	L8	True	5000.00	4975.521389	99.5
13	JZ86	L9	True	10000.00	9799.789690	98.0





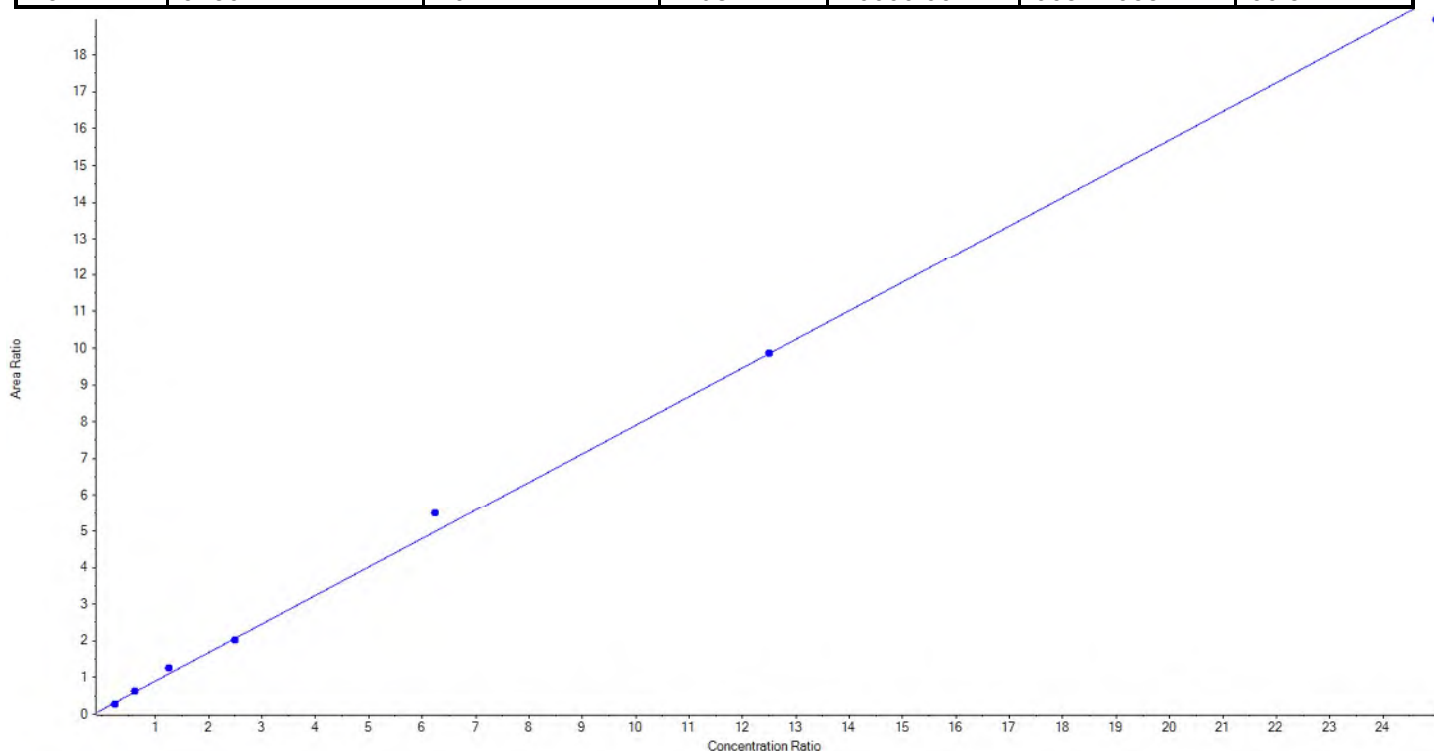
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NEtFOSAA_1	Data File	18-0523_18-0524.wiff
MRM Transition	584.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.77845x + 0.12055$ ($r = 0.99824$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	74.556536	74.6
8	JZ81	L4	True	250.00	256.120459	102.5
9	JZ82	L5	True	500.00	586.592707	117.3
10	JZ83	L6	True	1000.00	983.685035	98.4
11	JZ84	L7	True	2500.00	2757.013442	110.3
12	JZ85	L8	True	5000.00	5010.737947	100.2
13	JZ86	L9	True	10000.00	9681.293874	96.8





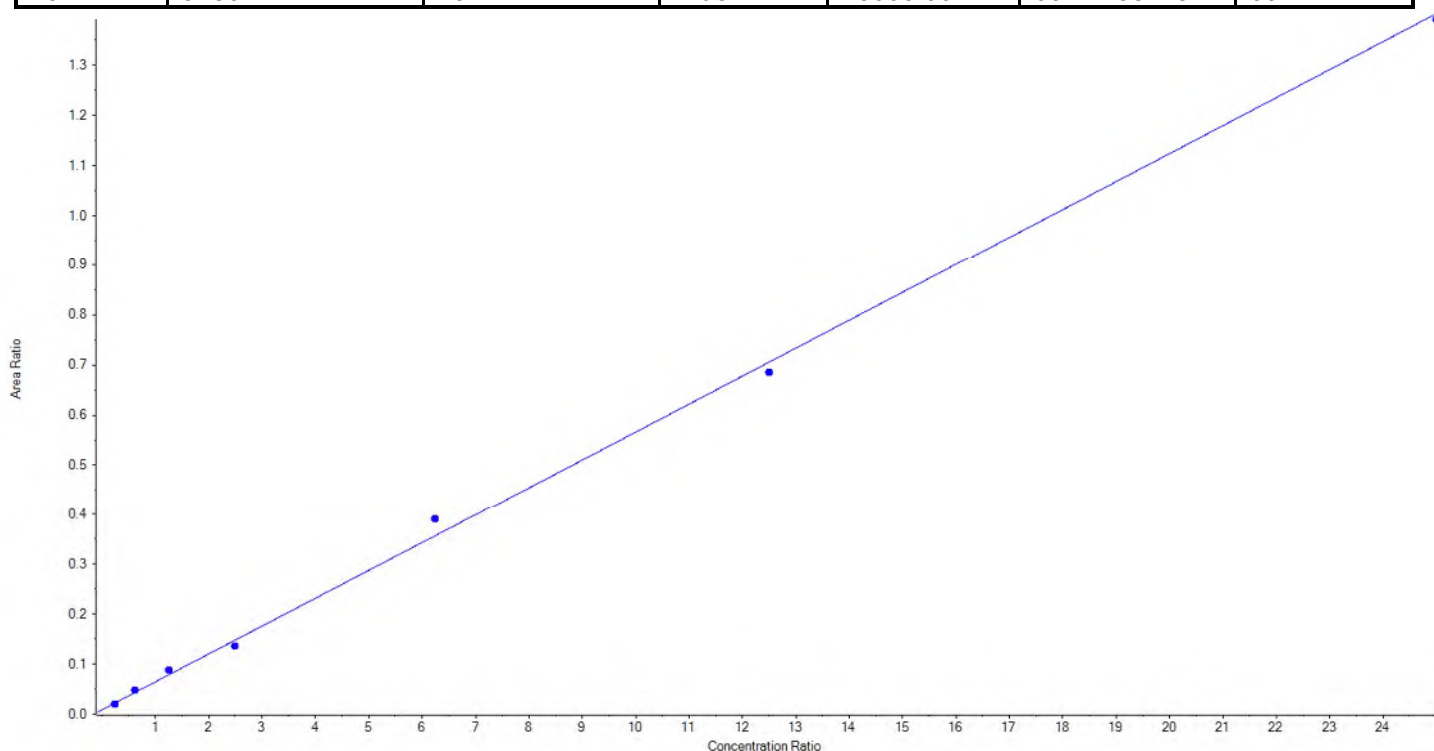
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NEtFOSAA_2	Data File	18-0523_18-0524.wiff
MRM Transition	584.0 / 483.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.05576 x + 0.00866$ ($r = 0.99838$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	77.938829	77.9
8	JZ81	L4	True	250.00	275.764969	110.3
9	JZ82	L5	True	500.00	570.352431	114.1
10	JZ83	L6	True	1000.00	917.201935	91.7
11	JZ84	L7	True	2500.00	2746.562540	109.9
12	JZ85	L8	True	5000.00	4848.020883	97.0
13	JZ86	L9	True	10000.00	9914.158413	99.1





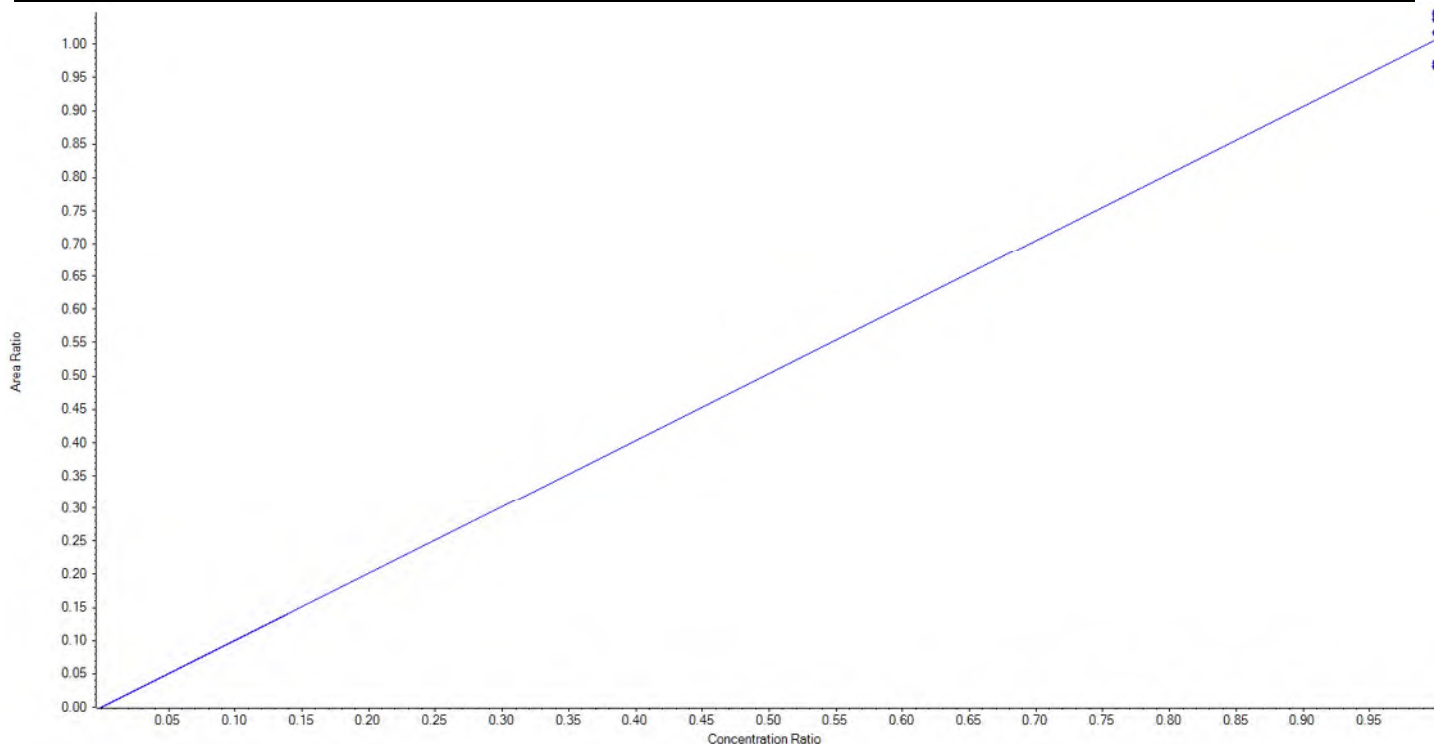
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	13C2-PFHxA	Data File	18-0523_18-0524.wiff
MRM Transition	315.0 / 270.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.00705 x$ (std. dev. = 0.03756) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	96.013933	96.0
8	JZ81	L4	True	100.00	103.627002	103.6
9	JZ82	L5	True	100.00	96.514953	96.5
10	JZ83	L6	True	100.00	100.958881	101.0
11	JZ84	L7	True	100.00	102.978900	103.0
12	JZ85	L8	True	100.00	103.982015	104.0
13	JZ86	L9	True	100.00	95.924316	95.9





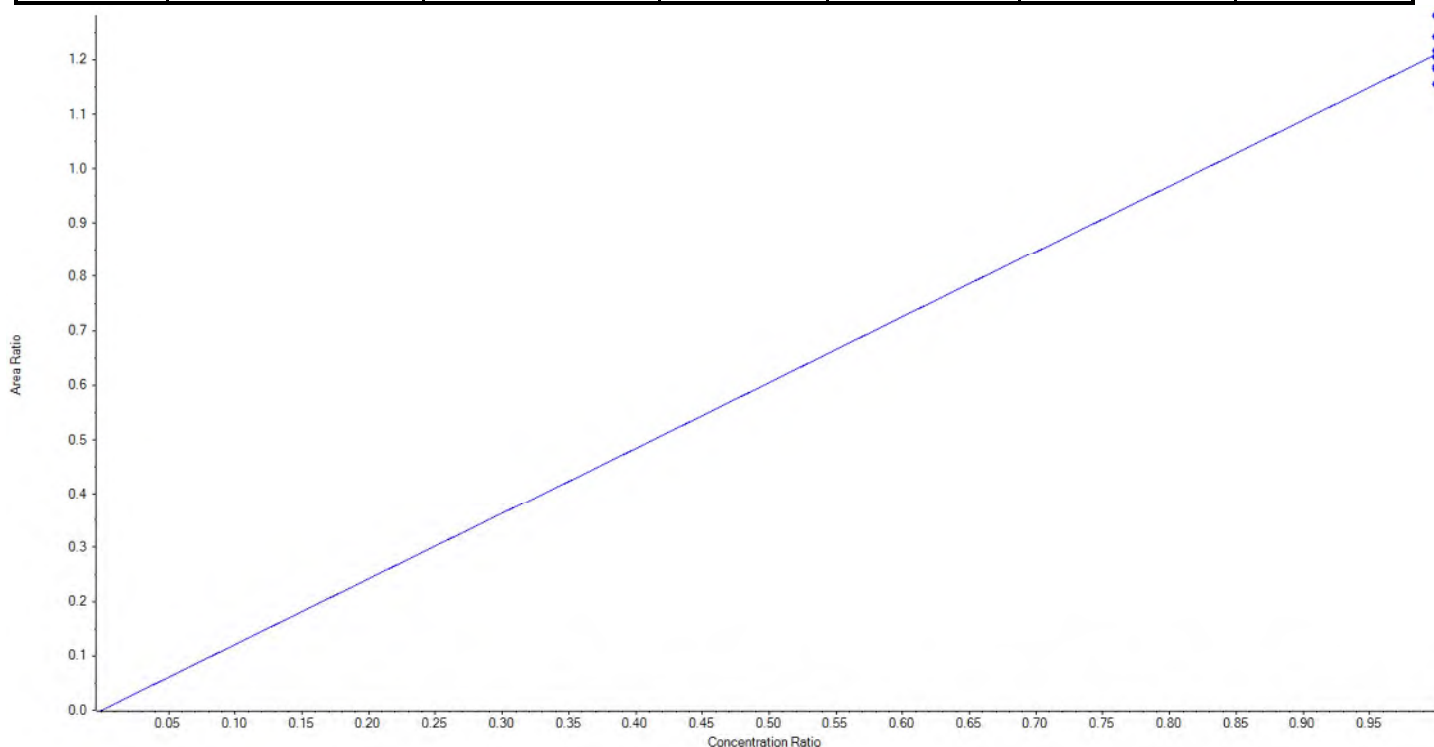
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	13C2-PFDA	Data File	18-0523_18-0524.wiff
MRM Transition	515.0 / 470.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.20987 x$ (std. dev. = 0.04118) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	95.538909	95.5
8	JZ81	L4	True	100.00	99.521034	99.5
9	JZ82	L5	True	100.00	98.118355	98.1
10	JZ83	L6	True	100.00	100.549473	100.6
11	JZ84	L7	True	100.00	97.842212	97.8
12	JZ85	L8	True	100.00	105.849909	105.9
13	JZ86	L9	True	100.00	102.580107	102.6





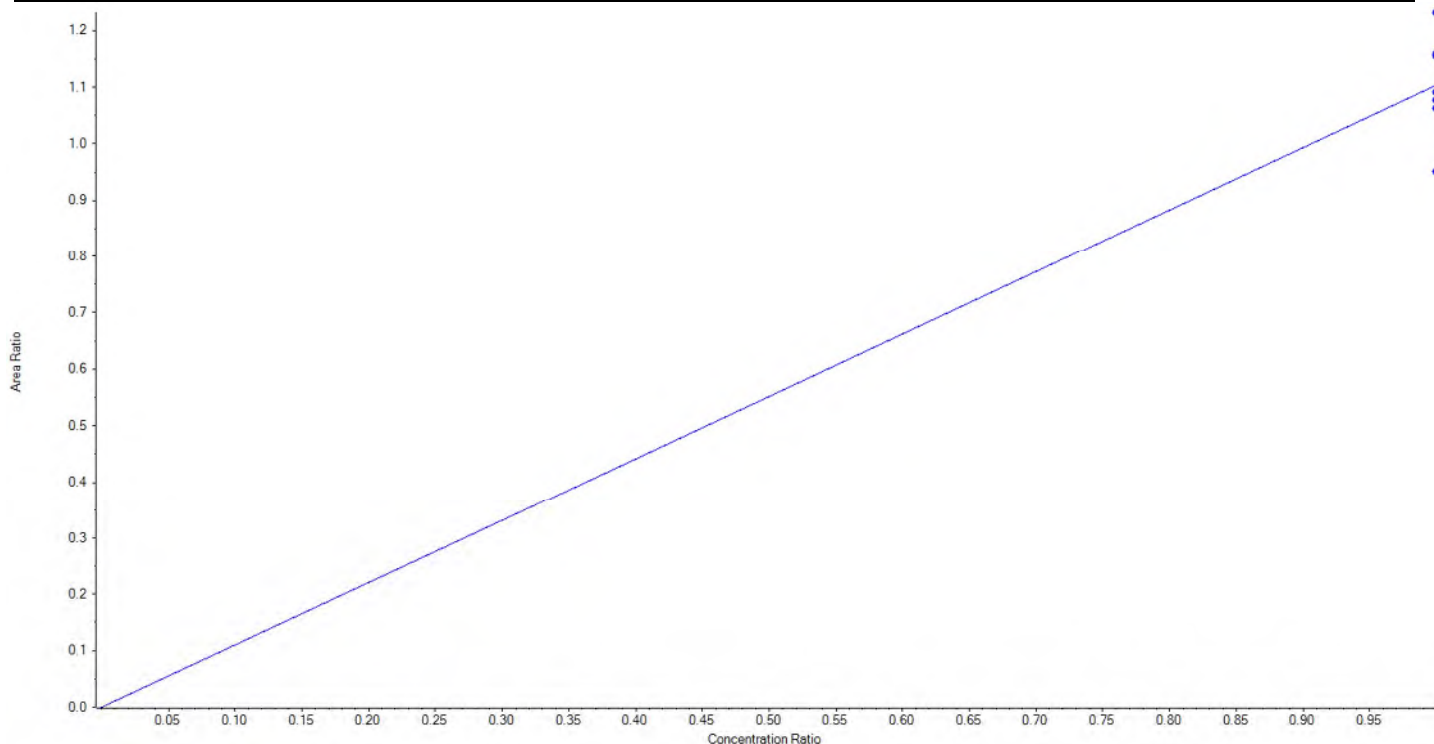
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	d5-EtFOSAA	Data File	18-0523_18-0524.wiff
MRM Transition	589.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.10375 x$ (std. dev. = 0.08941) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	400.00	446.271648	111.6
8	JZ81	L4	True	400.00	390.483250	97.6
9	JZ82	L5	True	400.00	420.220929	105.1
10	JZ83	L6	True	400.00	418.323334	104.6
11	JZ84	L7	True	400.00	384.880668	96.2
12	JZ85	L8	True	400.00	395.250915	98.8
13	JZ86	L9	True	400.00	344.569256	86.1



Sample Name	JZ80	Injection Vial	7
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:23:46	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	31558.57	92.623416	229.6	false
PFBS_2	298.9 / 99.0	1.52	10560.12	99.813968	175.6	false
PFHxA_1	313.0 / 269.0	1.83	43199.46	100.860031	16.3	true
PFHxA_2	313.0 / 119.0	1.83	2946.64	99.493988	13.8	true
PFHpA_1	363.0 / 319.0	2.23	34127.93	92.591072	40.2	true
PFHpA_2	363.0 / 169.0	2.23	928.79	83.599970	28.9	true
PFHxS_1	399.0 / 80.0	2.25	39211.73	91.932243	86.8	false
PFHxS_2	399.0 / 99.0	2.25	12031.98	95.733820	65.3	false
PFOA_1	413.0 / 369.0	2.63	36075.85	90.419829	67.2	false
PFOA_2	413.0 / 169.0	2.63	2231.41	91.488891	47.8	false
PFNA_1	463.0 / 419.0	3.02	32870.68	82.476112	92.6	false
PFNA_2	463.0 / 219.0	3.02	10954.20	86.279636	108.1	false
PFOS_1	499.0 / 80.0	3.02	57801.87	92.053366	88.5	false
PFOS_2	499.0 / 99.0	3.02	10206.04	84.589764	102.2	true
PFDA_1	513.0 / 469.0	3.38	42482.73	93.455449	108.3	false
PFDA_2	513.0 / 219.0	3.37	2342.61	91.140280	65.8	false
PFUnA_1	563.0 / 519.0	3.70	44010.03	85.922956	102.5	false
PFUnA_2	563.0 / 269.0	3.69	2953.04	84.767359	48.2	false
PFDaA_1	613.0 / 569.0	3.98	45016.92	89.319676	162.0	false
PFDaA_2	613.0 / 319.0	3.98	6998.76	90.125534	110.2	false
PFTrDA_1	663.0 / 619.0	4.22	43571.21	86.003197	257.3	false
PFTrDA_2	663.0 / 169.0	4.22	3044.06	92.966029	114.3	false
PFTeDA_1	713.0 / 669.0	4.44	43659.73	92.355066	374.4	false
PFTeDA_2	713.0 / 169.0	4.44	1719.76	79.975639	146.2	false
NMeFOSAA_1	570.0 / 419.0	3.53	6482.70	80.154543	179.2	false
NMeFOSAA_2	570.0 / 512.0	3.52	4381.41	78.385205	106.6	false
NEtFOSAA_1	584.0 / 419.0	3.69	7179.32	74.556536	157.2	false
NEtFOSAA_2	584.0 / 483.0	3.70	527.57	77.938829	18.6	false
13C2-PFHxA	315.0 / 270.0	1.81	34365.09	96.013933	778.2	false
13C2-PFDA	515.0 / 470.0	3.36	41081.82	95.538909	855.5	false
d5-EtFOSAA	589.0 / 419.0	3.68	33279.96	446.271648	281.0	false

Sample Name	JZ81	Injection Vial	8
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:32:41	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	77088.12	242.779569	557.1	false
PFBS_2	298.9 / 99.0	1.52	21995.90	229.053645	345.1	false
PFHxA_1	313.0 / 269.0	1.83	80707.79	258.019492	27.2	true
PFHxA_2	313.0 / 119.0	1.83	5869.46	254.937433	25.2	true
PFHpA_1	363.0 / 319.0	2.23	74029.18	267.133284	65.5	true
PFHpA_2	363.0 / 169.0	2.23	1859.57	271.716540	47.4	true
PFHxS_1	399.0 / 80.0	2.25	84717.52	244.692862	167.9	false
PFHxS_2	399.0 / 99.0	2.25	23241.01	225.396190	139.0	false
PFOA_1	413.0 / 369.0	2.63	81747.80	265.217814	125.0	false
PFOA_2	413.0 / 169.0	2.63	5312.30	263.853603	89.0	false
PFNA_1	463.0 / 419.0	3.03	79350.50	278.245015	163.6	false
PFNA_2	463.0 / 219.0	3.03	24687.75	273.929049	184.6	false
PFOS_1	499.0 / 80.0	3.02	130327.31	245.760890	119.4	false
PFOS_2	499.0 / 99.0	3.02	24978.48	249.900249	210.2	false
PFDA_1	513.0 / 469.0	3.38	92470.50	260.370572	201.0	false
PFDA_2	513.0 / 219.0	3.38	3784.48	213.880578	77.4	false
PFUnA_1	563.0 / 519.0	3.70	99257.96	268.407545	222.0	false
PFUnA_2	563.0 / 269.0	3.70	5677.87	281.972160	68.6	false
PFDaA_1	613.0 / 569.0	3.98	101742.27	266.201717	190.5	false
PFDaA_2	613.0 / 319.0	3.98	16512.47	269.682655	179.3	false
PFTrDA_1	663.0 / 619.0	4.22	103598.17	273.527871	289.8	false
PFTrDA_2	663.0 / 169.0	4.22	6350.32	258.583619	221.6	false
PFTeDA_1	713.0 / 669.0	4.44	100386.57	269.371525	539.1	false
PFTeDA_2	713.0 / 169.0	4.44	4849.42	279.709523	258.8	false
NMeFOSAA_1	570.0 / 419.0	3.53	15951.30	243.751348	562.8	false
NMeFOSAA_2	570.0 / 512.0	3.53	10980.55	263.534247	177.1	false
NEtFOSAA_1	584.0 / 419.0	3.69	17644.15	256.120459	379.1	false
NEtFOSAA_2	584.0 / 483.0	3.69	1342.52	275.764969	50.0	false
13C2-PFHxA	315.0 / 270.0	1.82	32333.19	103.627002	877.0	false
13C2-PFDA	515.0 / 470.0	3.37	37305.82	99.521034	973.5	false
d5-EtFOSAA	589.0 / 419.0	3.68	30713.26	390.483250	313.4	false

Sample Name	JZ82	Injection Vial	9
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:41:37	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	165900.25	481.387037	1076.3	false
PFBS_2	298.9 / 99.0	1.52	49372.87	475.566098	488.9	false
PFHxA_1	313.0 / 269.0	1.83	167002.00	506.144130	43.7	true
PFHxA_2	313.0 / 119.0	1.83	13134.45	529.185395	41.9	true
PFHpA_1	363.0 / 319.0	2.23	160743.51	539.413778	102.4	false
PFHpA_2	363.0 / 169.0	2.23	4030.24	581.392877	93.3	false
PFHxS_1	399.0 / 80.0	2.25	185272.14	514.827115	188.0	false
PFHxS_2	399.0 / 99.0	2.25	54086.08	505.854625	254.9	false
PFOA_1	413.0 / 369.0	2.63	179414.87	536.200392	199.3	false
PFOA_2	413.0 / 169.0	2.63	12344.22	554.473217	144.3	false
PFNA_1	463.0 / 419.0	3.03	162848.81	531.668423	250.7	false
PFNA_2	463.0 / 219.0	3.02	50115.93	520.946615	292.9	false
PFOS_1	499.0 / 80.0	3.02	277739.81	496.934120	128.0	false
PFOS_2	499.0 / 99.0	3.02	51842.43	493.823007	276.3	false
PFDA_1	513.0 / 469.0	3.38	203511.95	527.458555	297.9	false
PFDA_2	513.0 / 219.0	3.38	10263.58	590.959868	156.0	false
PFUnA_1	563.0 / 519.0	3.70	216993.52	549.872129	332.9	false
PFUnA_2	563.0 / 269.0	3.70	10957.98	541.060573	131.5	false
PFDoA_1	613.0 / 569.0	3.98	226756.88	549.580243	285.4	false
PFDoA_2	613.0 / 319.0	3.98	35770.18	534.102042	234.5	false
PFTrDA_1	663.0 / 619.0	4.22	225866.13	552.118199	301.2	false
PFTrDA_2	663.0 / 169.0	4.22	13963.16	530.996022	277.1	false
PFTeDA_1	713.0 / 669.0	4.44	215969.53	530.325680	595.6	false
PFTeDA_2	713.0 / 169.0	4.44	10387.06	541.889380	397.8	false
NMeFOSAA_1	570.0 / 419.0	3.53	35675.25	589.038442	579.8	false
NMeFOSAA_2	570.0 / 512.0	3.53	21763.21	568.791985	405.3	false
NEtFOSAA_1	584.0 / 419.0	3.69	36475.77	586.592707	504.1	false
NEtFOSAA_2	584.0 / 483.0	3.69	2547.97	570.352431	88.9	false
13C2-PFHxA	315.0 / 270.0	1.82	33826.64	96.514953	883.3	false
13C2-PFDA	515.0 / 470.0	3.37	41314.33	98.118355	1225.2	false
d5-EtFOSAA	589.0 / 419.0	3.68	33510.97	420.220929	282.3	false

Sample Name	JZ83	Injection Vial	10
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:50:33	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	252041.28	757.513782	1104.8	false
PFBS_2	298.9 / 99.0	1.52	75124.21	750.913541	559.2	false
PFHxA_1	313.0 / 269.0	1.83	279890.43	942.865717	62.5	true
PFHxA_2	313.0 / 119.0	1.82	20067.62	884.440354	52.5	true
PFHpA_1	363.0 / 319.0	2.23	250513.73	921.928726	133.5	false
PFHpA_2	363.0 / 169.0	2.23	5971.42	964.147793	95.7	false
PFHxS_1	399.0 / 80.0	2.25	299409.07	875.796194	248.6	false
PFHxS_2	399.0 / 99.0	2.25	85722.41	843.569800	382.8	false
PFOA_1	413.0 / 369.0	2.63	292937.60	956.983740	255.4	false
PFOA_2	413.0 / 169.0	2.63	18800.96	914.495818	158.7	false
PFNA_1	463.0 / 419.0	3.02	264678.06	951.587519	350.1	false
PFNA_2	463.0 / 219.0	3.02	85488.08	983.697300	334.7	false
PFOS_1	499.0 / 80.0	3.02	452951.09	848.869547	195.0	false
PFOS_2	499.0 / 99.0	3.02	91214.09	912.177512	551.8	false
PFDA_1	513.0 / 469.0	3.37	339532.35	961.920584	399.4	false
PFDA_2	513.0 / 219.0	3.37	16110.66	1035.220526	203.6	false
PFUnA_1	563.0 / 519.0	3.69	339611.84	946.560479	385.6	false
PFUnA_2	563.0 / 269.0	3.69	16634.72	934.412077	132.9	false
PFDoA_1	613.0 / 569.0	3.98	355692.30	943.232037	319.4	false
PFDoA_2	613.0 / 319.0	3.97	58070.85	944.935981	238.6	false
PFTTrDA_1	663.0 / 619.0	4.22	350616.34	937.995187	449.7	false
PFTTrDA_2	663.0 / 169.0	4.22	23296.13	974.563742	326.6	false
PFTeDA_1	713.0 / 669.0	4.43	349074.25	934.624759	610.4	false
PFTeDA_2	713.0 / 169.0	4.43	17374.71	983.544860	424.1	false
NMeFOSAA_1	570.0 / 419.0	3.52	56235.94	1012.438421	541.3	false
NMeFOSAA_2	570.0 / 512.0	3.52	33819.59	972.921249	377.7	false
NEtFOSAA_1	584.0 / 419.0	3.69	55499.49	983.685035	523.4	false
NEtFOSAA_2	584.0 / 483.0	3.69	3723.28	917.201935	111.3	false
13C2-PFHxA	315.0 / 270.0	1.82	32861.67	100.958881	714.1	false
13C2-PFDA	515.0 / 470.0	3.36	39319.78	100.549473	977.8	false
d5-EtFOSAA	589.0 / 419.0	3.67	31482.07	418.323334	250.9	false

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:59:30	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	730809.00	2006.637947	1689.0	false
PFBS_2	298.9 / 99.0	1.52	216661.20	1982.617976	936.9	false
PFHxA_1	313.0 / 269.0	1.82	754673.13	2490.992575	107.4	false
PFHxA_2	313.0 / 119.0	1.82	61064.41	2616.806311	98.0	false
PFHpA_1	363.0 / 319.0	2.23	689341.54	2468.282056	257.9	false
PFHpA_2	363.0 / 169.0	2.23	14716.74	2357.667898	219.7	false
PFHxS_1	399.0 / 80.0	2.25	666746.79	1807.484503	423.8	false
PFHxS_2	399.0 / 99.0	2.25	234215.06	2138.549468	600.0	false
PFOA_1	413.0 / 369.0	2.63	790160.53	2500.350046	429.0	false
PFOA_2	413.0 / 169.0	2.63	52230.72	2444.886244	322.7	false
PFNA_1	463.0 / 419.0	3.02	739771.80	2592.677432	585.3	false
PFNA_2	463.0 / 219.0	3.02	228147.54	2562.408880	707.9	false
PFOS_1	499.0 / 80.0	3.02	1287738.46	2229.662049	241.0	false
PFOS_2	499.0 / 99.0	3.02	236675.26	2188.533435	845.9	false
PFDA_1	513.0 / 469.0	3.37	911981.81	2501.130905	543.7	false
PFDA_2	513.0 / 219.0	3.37	40316.17	2552.909954	372.6	false
PFUnA_1	563.0 / 519.0	3.70	941581.68	2559.717863	592.8	false
PFUnA_2	563.0 / 269.0	3.70	44694.63	2526.652698	217.1	false
PFDoA_1	613.0 / 569.0	3.97	978741.20	2519.527484	389.0	false
PFDoA_2	613.0 / 319.0	3.97	159760.35	2512.673691	315.4	false
PFTrDA_1	663.0 / 619.0	4.22	958333.19	2490.163845	565.2	false
PFTrDA_2	663.0 / 169.0	4.22	59860.45	2434.490111	410.9	false
PFTeDA_1	713.0 / 669.0	4.43	972714.76	2518.800863	1013.9	false
PFTeDA_2	713.0 / 169.0	4.43	46859.89	2553.610487	839.1	false
NMeFOSAA_1	570.0 / 419.0	3.52	149369.16	2666.393934	828.8	false
NMeFOSAA_2	570.0 / 512.0	3.52	93393.00	2691.056234	572.8	false
NEtFOSAA_1	584.0 / 419.0	3.69	154775.31	2757.013442	885.1	false
NEtFOSAA_2	584.0 / 483.0	3.69	11046.18	2746.562540	302.4	false
13C2-PFHxA	315.0 / 270.0	1.81	35022.96	102.978900	951.6	false
13C2-PFDA	515.0 / 470.0	3.36	39977.63	97.842212	1074.7	false
d5-EtFOSAA	589.0 / 419.0	3.67	29962.61	384.880668	270.9	false

Sample Name	JZ85	Injection Vial	12
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:08:27	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	1445555.35	4234.668378	2055.5	false
PFBS_2	298.9 / 99.0	1.52	440202.25	4300.235188	1429.6	false
PFHxA_1	313.0 / 269.0	1.83	1445741.98	5026.589126	157.5	false
PFHxA_2	313.0 / 119.0	1.82	110988.33	4992.630645	137.8	false
PFHpA_1	363.0 / 319.0	2.23	1358955.45	5114.219257	405.8	false
PFHpA_2	363.0 / 169.0	2.23	29330.04	4979.859362	311.7	false
PFHxS_1	399.0 / 80.0	2.25	1533264.95	4462.151829	529.6	false
PFHxS_2	399.0 / 99.0	2.25	439784.23	4305.685887	712.1	false
PFOA_1	413.0 / 369.0	2.63	1521436.38	5053.230955	561.7	false
PFOA_2	413.0 / 169.0	2.63	106098.98	5202.197074	428.2	false
PFNA_1	463.0 / 419.0	3.02	1408416.69	5189.289362	895.7	false
PFNA_2	463.0 / 219.0	3.02	422055.11	4986.595092	984.3	false
PFOS_1	499.0 / 80.0	3.02	2387163.60	4425.297687	313.9	false
PFOS_2	499.0 / 99.0	3.02	465901.16	4615.206815	896.8	false
PFDA_1	513.0 / 469.0	3.37	1758456.91	5061.067717	826.9	false
PFDA_2	513.0 / 219.0	3.37	75977.39	5081.817658	447.5	false
PFUnA_1	563.0 / 519.0	3.70	1759735.67	5029.964712	819.2	false
PFUnA_2	563.0 / 269.0	3.69	83177.30	4991.299563	289.4	false
PFDoA_1	613.0 / 569.0	3.98	1825993.31	4935.789694	459.9	false
PFDoA_2	613.0 / 319.0	3.97	304311.57	5019.564881	479.8	false
PFTrDA_1	663.0 / 619.0	4.22	1855809.17	5065.402477	740.6	false
PFTrDA_2	663.0 / 169.0	4.22	121550.47	5198.133527	634.1	false
PFTeDA_1	713.0 / 669.0	4.43	1825203.69	4957.145646	1128.6	false
PFTeDA_2	713.0 / 169.0	4.43	87853.87	5015.106890	844.7	false
NMeFOSAA_1	570.0 / 419.0	3.52	286932.78	4905.539694	1252.3	false
NMeFOSAA_2	570.0 / 512.0	3.52	179894.83	4975.521389	795.9	false
NEtFOSAA_1	584.0 / 419.0	3.69	292910.26	5010.737947	879.3	false
NEtFOSAA_2	584.0 / 483.0	3.69	20309.02	4848.020883	359.1	false
13C2-PFHxA	315.0 / 270.0	1.82	33820.47	103.982015	779.9	false
13C2-PFDA	515.0 / 470.0	3.36	41361.68	105.849909	1246.3	false
d5-EtFOSAA	589.0 / 419.0	3.67	32360.14	395.250915	236.0	false

Sample Name	JZ86	Injection Vial	13
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:17:23	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	3057956.71	9309.989871	3459.0	false
PFBS_2	298.9 / 99.0	1.52	914466.31	9287.399584	2008.2	false
PFHxA_1	313.0 / 269.0	1.83	3030031.74	10024.528929	307.6	false
PFHxA_2	313.0 / 119.0	1.83	233322.76	9972.505873	269.5	false
PFHpA_1	363.0 / 319.0	2.23	2781078.77	9946.431826	720.3	false
PFHpA_2	363.0 / 169.0	2.23	62424.48	10111.615559	528.4	false
PFHxS_1	399.0 / 80.0	2.25	3182463.62	9650.315253	823.4	false
PFHxS_2	399.0 / 99.0	2.25	934415.91	9532.410210	1120.7	false
PFOA_1	413.0 / 369.0	2.63	3153130.12	9947.597224	878.5	false
PFOA_2	413.0 / 169.0	2.63	212341.81	9878.605154	625.0	false
PFNA_1	463.0 / 419.0	3.02	2776580.71	9724.056137	1294.5	false
PFNA_2	463.0 / 219.0	3.02	884162.84	9936.143427	1449.7	false
PFOS_1	499.0 / 80.0	3.02	4959501.95	9572.122341	421.5	false
PFOS_2	499.0 / 99.0	3.02	908024.48	9366.469218	1095.7	false
PFDA_1	513.0 / 469.0	3.38	3637917.78	9944.596217	1211.7	false
PFDA_2	513.0 / 219.0	3.37	153522.18	9784.071135	583.0	false
PFUnA_1	563.0 / 519.0	3.70	3646209.27	9909.554316	1168.1	false
PFUnA_2	563.0 / 269.0	3.70	174218.16	9989.835571	382.1	false
PFDaA_1	613.0 / 569.0	3.98	3911249.07	10046.349148	629.6	false
PFDaA_2	613.0 / 319.0	3.98	637122.35	9978.915216	568.0	false
PFTrDA_1	663.0 / 619.0	4.22	3834460.74	9944.789223	983.3	false
PFTrDA_2	663.0 / 169.0	4.22	242612.16	9860.266948	802.8	false
PFTeDA_1	713.0 / 669.0	4.43	3895561.68	10047.376461	1822.5	false
PFTeDA_2	713.0 / 169.0	4.43	182675.91	9896.163222	1074.6	false
NMeFOSAA_1	570.0 / 419.0	3.53	600667.18	9852.683617	2254.0	false
NMeFOSAA_2	570.0 / 512.0	3.53	368867.76	9799.789690	1245.9	false
NEtFOSAA_1	584.0 / 419.0	3.69	588934.20	9681.293874	1053.5	false
NEtFOSAA_2	584.0 / 483.0	3.69	43194.78	9914.158413	564.8	false
13C2-PFHxA	315.0 / 270.0	1.82	32906.75	95.924316	726.3	false
13C2-PFDA	515.0 / 470.0	3.36	42277.15	102.580107	1568.0	false
d5-EtFOSAA	589.0 / 419.0	3.68	29531.17	344.569256	218.5	false

Sample Name	JZ80	Injection Vial	7
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:23:46	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.335	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.068	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.027	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.307	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.062	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.333	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.177	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.055	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.067	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.156	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.039	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.676	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.70	NEtFOSAA	0.074	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ81	Injection Vial	8
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:32:41	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.285	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.274	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.065	0.066	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.311	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.192	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.041	0.046	ü
PFA_1	563.0 / 519.0	3.70	PFA			
PFA_2	563.0 / 269.0	3.70	PFA	0.057	0.052	ü
PFA_1	613.0 / 569.0	3.98	PFA			
PFA_2	613.0 / 319.0	3.98	PFA	0.162	0.162	ü
PFA_1	663.0 / 619.0	4.22	PFA			
PFA_2	663.0 / 169.0	4.22	PFA	0.061	0.064	ü
PFA_1	713.0 / 669.0	4.44	PFA			
PFA_2	713.0 / 169.0	4.44	PFA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.688	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.076	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.37		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ82	Injection Vial	9
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:41:37	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.079	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.292	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.069	0.066	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.308	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.187	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.051	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.158	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.062	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.610	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.37		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ83	Injection Vial	10
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:50:33	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.072	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.024	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.286	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.064	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.323	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.201	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.049	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.601	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.067	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:59:30	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.297	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.081	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.021	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.351	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.066	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.308	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.184	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.048	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.625	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.071	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ85	Injection Vial	12
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:08:27	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.305	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.077	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.022	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.287	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.300	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.195	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.047	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.167	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.627	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.069	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ86	Injection Vial	13
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:17:23	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.299	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.077	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.022	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.067	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.318	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.183	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.048	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.163	0.162	ü
PFTTrDA_1	663.0 / 619.0	4.22	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.22	PFTTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.047	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.614	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.073	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ80	Injection Vial	7
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:23:46	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	169780.16	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	169780.16	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	169780.16	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	169780.16	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	169780.16	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	169780.16	287.00
PFDA_1	513.0 / 469.0	3.38	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFUnA_1	563.0 / 519.0	3.70	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFUnA_2	563.0 / 269.0	3.69	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFDaA_1	613.0 / 569.0	3.98	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFDaA_2	613.0 / 319.0	3.98	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFTeDA_1	713.0 / 669.0	4.44	13C2-PFOA	415.0 / 370.0	35541.15	100.00
PFTeDA_2	713.0 / 169.0	4.44	13C2-PFOA	415.0 / 370.0	35541.15	100.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	27025.54	400.00
NMeFOSAA_2	570.0 / 512.0	3.52	d3-MeFOSAA	573.0 / 419.0	27025.54	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	27025.54	400.00
NEtFOSAA_2	584.0 / 483.0	3.70	d3-MeFOSAA	573.0 / 419.0	27025.54	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	35541.15	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	35541.15	100.00
d5-EtFOSAA	589.0 / 419.0	3.68	d3-MeFOSAA	573.0 / 419.0	27025.54	400.00

Sample Name	JZ81	Injection Vial	8
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:32:41	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	148146.63	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	148146.63	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	148146.63	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	148146.63	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFNA_1	463.0 / 419.0	3.03	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFNA_2	463.0 / 219.0	3.03	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	148146.63	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	148146.63	287.00
PFDA_1	513.0 / 469.0	3.38	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFDA_2	513.0 / 219.0	3.38	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFUnA_1	563.0 / 519.0	3.70	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFUnA_2	563.0 / 269.0	3.70	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFDaA_1	613.0 / 569.0	3.98	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFDaA_2	613.0 / 319.0	3.98	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFTTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFTTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFTeDA_1	713.0 / 669.0	4.44	13C2-PFOA	415.0 / 370.0	30983.03	100.00
PFTeDA_2	713.0 / 169.0	4.44	13C2-PFOA	415.0 / 370.0	30983.03	100.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	28504.56	400.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	28504.56	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	28504.56	400.00
NEtFOSAA_2	584.0 / 483.0	3.69	d3-MeFOSAA	573.0 / 419.0	28504.56	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	30983.03	100.00
13C2-PFDA	515.0 / 470.0	3.37	13C2-PFOA	415.0 / 370.0	30983.03	100.00
d5-EtFOSAA	589.0 / 419.0	3.68	d3-MeFOSAA	573.0 / 419.0	28504.56	400.00

Sample Name	JZ82	Injection Vial	9
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:41:37	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	157723.01	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	157723.01	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	157723.01	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	157723.01	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFNA_1	463.0 / 419.0	3.03	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	157723.01	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	157723.01	287.00
PFDA_1	513.0 / 469.0	3.38	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFDA_2	513.0 / 219.0	3.38	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFUnA_1	563.0 / 519.0	3.70	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFUnA_2	563.0 / 269.0	3.70	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFDaA_1	613.0 / 569.0	3.98	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFDaA_2	613.0 / 319.0	3.98	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFTTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFTTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFTeDA_1	713.0 / 669.0	4.44	13C2-PFOA	415.0 / 370.0	34802.67	100.00
PFTeDA_2	713.0 / 169.0	4.44	13C2-PFOA	415.0 / 370.0	34802.67	100.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	28900.15	400.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	28900.15	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	28900.15	400.00
NEtFOSAA_2	584.0 / 483.0	3.69	d3-MeFOSAA	573.0 / 419.0	28900.15	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	34802.67	100.00
13C2-PFDA	515.0 / 470.0	3.37	13C2-PFOA	415.0 / 370.0	34802.67	100.00
d5-EtFOSAA	589.0 / 419.0	3.68	d3-MeFOSAA	573.0 / 419.0	28900.15	400.00

Sample Name	JZ83	Injection Vial	10
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:50:33	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	151202.26	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	151202.26	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	151202.26	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	151202.26	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	151202.26	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	151202.26	287.00
PFDA_1	513.0 / 469.0	3.37	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFUnA_1	563.0 / 519.0	3.69	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFUnA_2	563.0 / 269.0	3.69	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFDaA_1	613.0 / 569.0	3.98	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFDaA_2	613.0 / 319.0	3.97	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFTTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFTTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFOA	415.0 / 370.0	32321.64	100.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFOA	415.0 / 370.0	32321.64	100.00
NMeFOSAA_1	570.0 / 419.0	3.52	d3-MeFOSAA	573.0 / 419.0	27273.57	400.00
NMeFOSAA_2	570.0 / 512.0	3.52	d3-MeFOSAA	573.0 / 419.0	27273.57	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	27273.57	400.00
NEtFOSAA_2	584.0 / 483.0	3.69	d3-MeFOSAA	573.0 / 419.0	27273.57	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	32321.64	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	32321.64	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	27273.57	400.00

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:59:30	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	164251.66	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	164251.66	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	164251.66	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	164251.66	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	164251.66	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	164251.66	287.00
PFDA_1	513.0 / 469.0	3.37	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFUnA_1	563.0 / 519.0	3.70	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFUnA_2	563.0 / 269.0	3.70	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFDaA_1	613.0 / 569.0	3.97	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFDaA_2	613.0 / 319.0	3.97	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFTTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFTTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFOA	415.0 / 370.0	33771.70	100.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFOA	415.0 / 370.0	33771.70	100.00
NMeFOSAA_1	570.0 / 419.0	3.52	d3-MeFOSAA	573.0 / 419.0	28212.68	400.00
NMeFOSAA_2	570.0 / 512.0	3.52	d3-MeFOSAA	573.0 / 419.0	28212.68	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	28212.68	400.00
NEtFOSAA_2	584.0 / 483.0	3.69	d3-MeFOSAA	573.0 / 419.0	28212.68	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	33771.70	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	33771.70	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	28212.68	400.00

Sample Name	JZ85	Injection Vial	12
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:08:27	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	153582.54	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	153582.54	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	153582.54	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	153582.54	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	153582.54	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	153582.54	287.00
PFDA_1	513.0 / 469.0	3.37	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFUnA_1	563.0 / 519.0	3.70	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFUnA_2	563.0 / 269.0	3.69	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFDaA_1	613.0 / 569.0	3.98	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFDaA_2	613.0 / 319.0	3.97	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFTTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFTTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFTTeDA_1	713.0 / 669.0	4.43	13C2-PFOA	415.0 / 370.0	32297.56	100.00
PFTTeDA_2	713.0 / 169.0	4.43	13C2-PFOA	415.0 / 370.0	32297.56	100.00
NMeFOSAA_1	570.0 / 419.0	3.52	d3-MeFOSAA	573.0 / 419.0	29670.74	400.00
NMeFOSAA_2	570.0 / 512.0	3.52	d3-MeFOSAA	573.0 / 419.0	29670.74	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	29670.74	400.00
NEtFOSAA_2	584.0 / 483.0	3.69	d3-MeFOSAA	573.0 / 419.0	29670.74	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	32297.56	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	32297.56	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	29670.74	400.00

Sample Name	JZ86	Injection Vial	13
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:17:23	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	147602.88	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	147602.88	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFHpA_2	363.0 / 169.0	2.23	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	147602.88	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	147602.88	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	147602.88	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	147602.88	287.00
PFDA_1	513.0 / 469.0	3.38	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFUnA_1	563.0 / 519.0	3.70	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFUnA_2	563.0 / 269.0	3.70	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFDaA_1	613.0 / 569.0	3.98	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFDaA_2	613.0 / 319.0	3.98	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFTTrDA_1	663.0 / 619.0	4.22	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFTTrDA_2	663.0 / 169.0	4.22	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFOA	415.0 / 370.0	34064.70	100.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFOA	415.0 / 370.0	34064.70	100.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	31059.53	400.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	31059.53	400.00
NEtFOSAA_1	584.0 / 419.0	3.69	d3-MeFOSAA	573.0 / 419.0	31059.53	400.00
NEtFOSAA_2	584.0 / 483.0	3.69	d3-MeFOSAA	573.0 / 419.0	31059.53	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	34064.70	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	34064.70	100.00
d5-EtFOSAA	589.0 / 419.0	3.68	d3-MeFOSAA	573.0 / 419.0	31059.53	400.00

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	797.074022	885.00	90.06
PFBS_2	298.9 / 99.0	1.51	793.065794	885.00	89.61
PFHxA_1	313.0 / 269.0	1.82	940.533648	1000.00	94.05
PFHxA_2	313.0 / 119.0	1.82	966.033599	1000.00	96.60
PFHpA_1	363.0 / 319.0	2.22	959.600146	1000.00	95.96
PFHpA_2	363.0 / 169.0	2.22	870.420290	1000.00	87.04
PFHxS_1	399.0 / 80.0	2.24	884.427438	912.00	96.98
PFHxS_2	399.0 / 99.0	2.24	841.940832	912.00	92.32
PFOA_1	413.0 / 369.0	2.62	952.372855	1000.00	95.24
PFOA_2	413.0 / 169.0	2.62	994.458678	1000.00	99.45
PFNA_1	463.0 / 419.0	3.01	945.616371	1000.00	94.56
PFNA_2	463.0 / 219.0	3.01	955.308722	1000.00	95.53
PFOS_1	499.0 / 80.0	3.01	824.131581	925.60	89.04
PFOS_2	499.0 / 99.0	3.01	975.327902	925.60	105.37
PFDA_1	513.0 / 469.0	3.36	987.499696	1000.00	98.75
PFDA_2	513.0 / 219.0	3.36	1066.460729	1000.00	106.65
PFUnA_1	563.0 / 519.0	3.69	934.093198	1000.00	93.41
PFUnA_2	563.0 / 269.0	3.68	977.131579	1000.00	97.71
PFDoA_1	613.0 / 569.0	3.96	947.037930	1000.00	94.70
PFDoA_2	613.0 / 319.0	3.96	903.988681	1000.00	90.40
PFTTrDA_1	663.0 / 619.0	4.21	904.880875	1000.00	90.49
PFTTrDA_2	663.0 / 169.0	4.21	964.673110	1000.00	96.47
PFTeDA_1	713.0 / 669.0	4.42	915.532982	1000.00	91.55
PFTeDA_2	713.0 / 169.0	4.42	927.497543	1000.00	92.75
NMeFOSAA_1	570.0 / 419.0	3.51	1261.665907	1000.00	126.17
NMeFOSAA_2	570.0 / 512.0	3.51	1165.317395	1000.00	116.53
NEtFOSAA_1	584.0 / 419.0	3.67	1256.811186	1000.00	125.68
NEtFOSAA_2	584.0 / 483.0	3.67	1070.510408	1000.00	107.05
13C2-PFHxA	315.0 / 270.0	1.81	96.761315	100.00	96.76
13C2-PFDA	515.0 / 470.0	3.35	96.636437	100.00	96.64
d5-EtFOSAA	589.0 / 419.0	3.66	417.604484	400.00	104.40

Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	239.950241	221.50	108.33
PFBS_2	298.9 / 99.0	1.51	233.621345	221.50	105.47
PFHxA_1	313.0 / 269.0	1.82	251.646105	250.00	100.66
PFHxA_2	313.0 / 119.0	1.82	242.558748	250.00	97.02
PFHpA_1	363.0 / 319.0	2.22	268.139624	250.00	107.26
PFHpA_2	363.0 / 169.0	2.22	267.930538	250.00	107.17
PFHxS_1	399.0 / 80.0	2.24	243.758596	228.00	106.91
PFHxS_2	399.0 / 99.0	2.24	255.166749	228.00	111.92
PFOA_1	413.0 / 369.0	2.62	270.327682	250.00	108.13
PFOA_2	413.0 / 169.0	2.62	307.836766	250.00	123.13
PFNA_1	463.0 / 419.0	3.01	270.767595	250.00	108.31
PFNA_2	463.0 / 219.0	3.01	279.989383	250.00	112.00
PFOS_1	499.0 / 80.0	3.01	236.999632	231.50	102.38
PFOS_2	499.0 / 99.0	3.01	279.663105	231.50	120.80
PFDA_1	513.0 / 469.0	3.36	274.318272	250.00	109.73
PFDA_2	513.0 / 219.0	3.36	303.504280	250.00	121.40
PFUnA_1	563.0 / 519.0	3.69	261.203998	250.00	104.48
PFUnA_2	563.0 / 269.0	3.69	249.881604	250.00	99.95
PFDoA_1	613.0 / 569.0	3.96	279.847560	250.00	111.94
PFDoA_2	613.0 / 319.0	3.96	270.149649	250.00	108.06
PFTTrDA_1	663.0 / 619.0	4.21	256.739036	250.00	102.70
PFTTrDA_2	663.0 / 169.0	4.21	252.336198	250.00	100.93
PFTeDA_1	713.0 / 669.0	4.42	262.282369	250.00	104.91
PFTeDA_2	713.0 / 169.0	4.42	300.630209	250.00	120.25
NMeFOSAA_1	570.0 / 419.0	3.51	266.708769	250.00	106.68
NMeFOSAA_2	570.0 / 512.0	3.51	191.120599	250.00	76.45
NEtFOSAA_1	584.0 / 419.0	3.67	227.831121	250.00	91.13
NEtFOSAA_2	584.0 / 483.0	3.68	301.995474	250.00	120.80
13C2-PFHxA	315.0 / 270.0	1.81	98.472326	100.00	98.47
13C2-PFDA	515.0 / 470.0	3.35	104.098126	100.00	104.10
d5-EtFOSAA	589.0 / 419.0	3.67	387.803773	400.00	96.95

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	276117.64	797.074022	888.6	false
PFBS_2	298.9 / 99.0	1.51	82595.29	793.065794	723.6	false
PFHxA_1	313.0 / 269.0	1.82	292364.28	940.533648	67.6	false
PFHxA_2	313.0 / 119.0	1.82	22904.48	966.033599	63.6	false
PFHpA_1	363.0 / 319.0	2.22	272741.46	959.600146	160.7	false
PFHpA_2	363.0 / 169.0	2.22	5681.05	870.420290	92.7	false
PFHxS_1	399.0 / 80.0	2.24	314571.24	884.427438	388.2	false
PFHxS_2	399.0 / 99.0	2.24	89025.82	841.940832	419.1	false
PFOA_1	413.0 / 369.0	2.62	305273.94	952.372855	304.6	false
PFOA_2	413.0 / 169.0	2.62	21391.94	994.458678	228.6	false
PFNA_1	463.0 / 419.0	3.01	275444.79	945.616371	360.6	false
PFNA_2	463.0 / 219.0	3.01	87009.53	955.308722	437.2	false
PFOS_1	499.0 / 80.0	3.01	457649.69	824.131581	277.9	false
PFOS_2	499.0 / 99.0	3.01	101430.61	975.327902	413.7	false
PFDA_1	513.0 / 469.0	3.36	364790.17	987.499696	396.2	false
PFDA_2	513.0 / 219.0	3.36	17353.21	1066.460729	189.9	false
PFUnA_1	563.0 / 519.0	3.69	351049.81	934.093198	322.4	false
PFUnA_2	563.0 / 269.0	3.68	18151.90	977.131579	144.2	false
PFDaA_1	613.0 / 569.0	3.96	373900.00	947.037930	273.3	false
PFDaA_2	613.0 / 319.0	3.96	58210.26	903.988681	241.1	false
PFTrDA_1	663.0 / 619.0	4.21	354460.16	904.880875	344.8	false
PFTrDA_2	663.0 / 169.0	4.21	24151.31	964.673110	303.9	false
PFTeDA_1	713.0 / 669.0	4.42	358159.12	915.532982	709.7	false
PFTeDA_2	713.0 / 169.0	4.42	17165.49	927.497543	407.2	false
NMeFOSAA_1	570.0 / 419.0	3.51	67499.03	1261.665907	763.1	false
NMeFOSAA_2	570.0 / 512.0	3.51	38975.20	1165.317395	570.6	false
NEtFOSAA_1	584.0 / 419.0	3.67	67960.95	1256.811186	558.3	true
NEtFOSAA_2	584.0 / 483.0	3.67	4180.94	1070.510408	252.1	false
13C2-PFHxA	315.0 / 270.0	1.81	32977.55	96.761315	860.1	false
13C2-PFDA	515.0 / 470.0	3.35	39567.96	96.636437	1228.3	false
d5-EtFOSAA	589.0 / 419.0	3.66	30514.09	417.604484	243.6	false

Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	82416.48	239.950241	482.6	false
PFBS_2	298.9 / 99.0	1.51	24293.45	233.621345	345.7	false
PFHxA_1	313.0 / 269.0	1.82	86123.88	251.646105	27.4	true
PFHxA_2	313.0 / 119.0	1.82	6115.13	242.558748	24.3	true
PFHpA_1	363.0 / 319.0	2.22	81022.09	268.139624	60.5	true
PFHpA_2	363.0 / 169.0	2.22	2005.19	267.930538	49.8	true
PFHxS_1	399.0 / 80.0	2.24	91349.41	243.758596	162.8	false
PFHxS_2	399.0 / 99.0	2.24	28318.24	255.166749	207.3	false
PFOA_1	413.0 / 369.0	2.62	90766.08	270.327682	121.8	false
PFOA_2	413.0 / 169.0	2.62	6731.25	307.836766	97.4	false
PFNA_1	463.0 / 419.0	3.01	84435.67	270.767595	157.9	false
PFNA_2	463.0 / 219.0	3.01	27460.19	279.989383	198.0	false
PFOS_1	499.0 / 80.0	3.01	136115.69	236.999632	123.0	false
PFOS_2	499.0 / 99.0	3.01	30164.16	279.663105	254.8	false
PFDA_1	513.0 / 469.0	3.36	105910.08	274.318272	232.9	false
PFDA_2	513.0 / 219.0	3.36	5515.33	303.504280	139.2	true
PFUnA_1	563.0 / 519.0	3.69	105638.96	261.203998	216.5	false
PFUnA_2	563.0 / 269.0	3.69	5642.02	249.881604	75.2	false
PFDoA_1	613.0 / 569.0	3.96	116229.19	279.847560	192.2	false
PFDoA_2	613.0 / 319.0	3.96	18039.69	270.149649	145.2	false
PFTrDA_1	663.0 / 619.0	4.21	106587.32	256.739036	283.1	false
PFTrDA_2	663.0 / 169.0	4.21	6774.20	252.336198	158.2	false
PFTeDA_1	713.0 / 669.0	4.42	106769.23	262.282369	409.5	false
PFTeDA_2	713.0 / 169.0	4.42	5672.00	300.630209	258.4	false
NMeFOSAA_1	570.0 / 419.0	3.51	17126.34	266.708769	350.3	false
NMeFOSAA_2	570.0 / 512.0	3.51	8442.13	191.120599	191.9	false
NEtFOSAA_1	584.0 / 419.0	3.67	15977.92	227.831121	268.8	false
NEtFOSAA_2	584.0 / 483.0	3.68	1438.03	301.995474	45.4	true
13C2-PFHxA	315.0 / 270.0	1.81	33511.60	98.472326	937.8	false
13C2-PFDA	515.0 / 470.0	3.35	42560.83	104.098126	942.0	false
d5-EtFOSAA	589.0 / 419.0	3.67	30318.58	387.803773	282.1	false

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.299	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.078	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.021	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.283	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.316	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.222	0.188	ü
PFDA_1	513.0 / 469.0	3.36	PFDA			
PFDA_2	513.0 / 219.0	3.36	PFDA	0.048	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.68	PFUnA	0.052	0.052	ü
PFDaA_1	613.0 / 569.0	3.96	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.156	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.068	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.51	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.577	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.67	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.67	NEtFOSAA	0.062	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.66		N/A	N/A	ü

Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.295	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.071	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.310	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.074	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.325	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.222	0.188	ü
PFDA_1	513.0 / 469.0	3.36	PFDA			
PFDA_2	513.0 / 219.0	3.36	PFDA	0.052	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.053	0.052	ü
PFDaA_1	613.0 / 569.0	3.96	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.155	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.064	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.053	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.51	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.493	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.67	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.090	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	157328.87	287.00
PFBS_2	298.9 / 99.0	1.51	13C4-PFOS	503.0 / 80.0	157328.87	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFHpA_1	363.0 / 319.0	2.22	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFHpA_2	363.0 / 169.0	2.22	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFHxS_1	399.0 / 80.0	2.24	13C4-PFOS	503.0 / 80.0	157328.87	287.00
PFHxS_2	399.0 / 99.0	2.24	13C4-PFOS	503.0 / 80.0	157328.87	287.00
PFOA_1	413.0 / 369.0	2.62	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFOA_2	413.0 / 169.0	2.62	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFNA_1	463.0 / 419.0	3.01	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFNA_2	463.0 / 219.0	3.01	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFOS_1	499.0 / 80.0	3.01	13C4-PFOS	503.0 / 80.0	157328.87	287.00
PFOS_2	499.0 / 99.0	3.01	13C4-PFOS	503.0 / 80.0	157328.87	287.00
PFDA_1	513.0 / 469.0	3.36	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFDA_2	513.0 / 219.0	3.36	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFUnA_1	563.0 / 519.0	3.69	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFUnA_2	563.0 / 269.0	3.68	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFDaA_1	613.0 / 569.0	3.96	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFDaA_2	613.0 / 319.0	3.96	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFTrDA_1	663.0 / 619.0	4.21	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFTrDA_2	663.0 / 169.0	4.21	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFTeDA_1	713.0 / 669.0	4.42	13C2-PFOA	415.0 / 370.0	33842.69	100.00
PFTeDA_2	713.0 / 169.0	4.42	13C2-PFOA	415.0 / 370.0	33842.69	100.00
NMeFOSAA_1	570.0 / 419.0	3.51	d3-MeFOSAA	573.0 / 419.0	26480.50	400.00
NMeFOSAA_2	570.0 / 512.0	3.51	d3-MeFOSAA	573.0 / 419.0	26480.50	400.00
NEtFOSAA_1	584.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	26480.50	400.00
NEtFOSAA_2	584.0 / 483.0	3.67	d3-MeFOSAA	573.0 / 419.0	26480.50	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	33842.69	100.00
13C2-PFDA	515.0 / 470.0	3.35	13C2-PFOA	415.0 / 370.0	33842.69	100.00
d5-EtFOSAA	589.0 / 419.0	3.66	d3-MeFOSAA	573.0 / 419.0	26480.50	400.00

Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	160328.42	287.00
PFBS_2	298.9 / 99.0	1.51	13C4-PFOS	503.0 / 80.0	160328.42	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFHpA_1	363.0 / 319.0	2.22	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFHpA_2	363.0 / 169.0	2.22	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFHxS_1	399.0 / 80.0	2.24	13C4-PFOS	503.0 / 80.0	160328.42	287.00
PFHxS_2	399.0 / 99.0	2.24	13C4-PFOS	503.0 / 80.0	160328.42	287.00
PFOA_1	413.0 / 369.0	2.62	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFOA_2	413.0 / 169.0	2.62	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFNA_1	463.0 / 419.0	3.01	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFNA_2	463.0 / 219.0	3.01	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFOS_1	499.0 / 80.0	3.01	13C4-PFOS	503.0 / 80.0	160328.42	287.00
PFOS_2	499.0 / 99.0	3.01	13C4-PFOS	503.0 / 80.0	160328.42	287.00
PFDA_1	513.0 / 469.0	3.36	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFDA_2	513.0 / 219.0	3.36	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFUnA_1	563.0 / 519.0	3.69	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFUnA_2	563.0 / 269.0	3.69	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFDaA_1	613.0 / 569.0	3.96	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFDaA_2	613.0 / 319.0	3.96	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFTTrDA_1	663.0 / 619.0	4.21	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFTTrDA_2	663.0 / 169.0	4.21	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFTeDA_1	713.0 / 669.0	4.42	13C2-PFOA	415.0 / 370.0	33793.20	100.00
PFTeDA_2	713.0 / 169.0	4.42	13C2-PFOA	415.0 / 370.0	33793.20	100.00
NMeFOSAA_1	570.0 / 419.0	3.51	d3-MeFOSAA	573.0 / 419.0	28332.68	400.00
NMeFOSAA_2	570.0 / 512.0	3.51	d3-MeFOSAA	573.0 / 419.0	28332.68	400.00
NEtFOSAA_1	584.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	28332.68	400.00
NEtFOSAA_2	584.0 / 483.0	3.68	d3-MeFOSAA	573.0 / 419.0	28332.68	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	33793.20	100.00
13C2-PFDA	515.0 / 470.0	3.35	13C2-PFOA	415.0 / 370.0	33793.20	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	28332.68	400.00

Raw Analytical Data

Sample Name	KZ08 IB	Injection Vial	14
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:26:21	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	true
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	true
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	31582.00	96.494837	801.4	false
13C2-PFDA	515.0 / 470.0	3.36	40010.13	101.753233	901.6	false
d5-EtFOSAA	589.0 / 419.0	3.67	30827.58	400.881433	303.2	false

Sample Name	CR649PB-FS(0)	Injection Vial	17
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:53:09	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	true
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	true
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	32289.79	100.350444	721.1	false
13C2-PFDA	515.0 / 470.0	3.36	36224.62	93.706947	882.5	false
d5-EtFOSAA	589.0 / 419.0	3.67	26331.34	343.729625	290.4	false

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	1404615.60	4426.547809	2181.2	false
PFBS_2	298.9 / 99.0	1.52	421961.23	4434.616001	883.0	false
PFHxA_1	313.0 / 269.0	1.82	1435524.78	5027.962349	152.8	false
PFHxA_2	313.0 / 119.0	1.82	113472.51	5142.744573	130.9	false
PFHpA_1	363.0 / 319.0	2.23	1350379.36	5119.528341	399.1	false
PFHpA_2	363.0 / 169.0	2.22	31780.92	5441.496313	310.5	false
PFHxS_1	399.0 / 80.0	2.25	1572501.22	4924.787120	645.7	false
PFHxS_2	399.0 / 99.0	2.25	447662.66	4716.444333	994.0	false
PFOA_1	413.0 / 369.0	2.63	1491212.93	4989.214193	549.6	false
PFOA_2	413.0 / 169.0	2.63	103802.72	5127.106204	537.2	false
PFNA_1	463.0 / 419.0	3.02	1354881.16	5028.061633	785.9	false
PFNA_2	463.0 / 219.0	3.02	428844.82	5105.019514	824.2	false
PFOS_1	499.0 / 80.0	3.02	2188658.99	4365.113489	788.4	false
PFOS_2	499.0 / 99.0	3.01	453458.98	4833.135091	1182.3	false
PFDA_1	513.0 / 469.0	3.37	1678219.60	4865.135214	715.2	false
PFDA_2	513.0 / 219.0	3.37	74573.84	5024.211736	538.2	false
PFUnA_1	563.0 / 519.0	3.69	1629915.55	4691.378863	833.4	false
PFUnA_2	563.0 / 269.0	3.69	76765.74	4635.062535	228.3	false
PFDoA_1	613.0 / 569.0	3.97	1762355.79	4798.377094	372.6	false
PFDoA_2	613.0 / 319.0	3.97	279504.94	4643.329085	349.4	false
PFTTrDA_1	663.0 / 619.0	4.21	1719286.23	4725.942761	633.9	false
PFTTrDA_2	663.0 / 169.0	4.21	108808.67	4685.071473	491.8	false
PFTeDA_1	713.0 / 669.0	4.43	1730064.99	4732.770598	1480.4	false
PFTeDA_2	713.0 / 169.0	4.43	85076.52	4892.225576	928.4	false
NMeFOSAA_1	570.0 / 419.0	3.52	308436.04	6149.656506	1206.4	false
NMeFOSAA_2	570.0 / 512.0	3.52	170894.07	5508.566370	608.6	false
NEtFOSAA_1	584.0 / 419.0	3.68	312029.76	6229.081964	1044.1	false
NEtFOSAA_2	584.0 / 483.0	3.68	19018.85	5291.055587	487.0	false
13C2-PFHxA	315.0 / 270.0	1.82	33136.85	102.633153	837.5	false
13C2-PFDA	515.0 / 470.0	3.36	33826.64	87.206554	591.1	false
d5-EtFOSAA	589.0 / 419.0	3.67	25523.55	362.932671	242.4	false

Sample Name	J7566-FS(0)	Injection Vial	19
Sample ID	JAX-RES-08212018-0945-11	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:10:59	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	true
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	true
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	33424.89	106.495102	704.8	false
13C2-PFDA	515.0 / 470.0	3.36	40389.62	107.113277	1218.0	false
d5-EtFOSAA	589.0 / 419.0	3.67	30510.42	405.696551	257.3	false

Sample Name	J7568-FS(0)	Injection Vial	20
Sample ID	JAX-RES-08212018-1130-10	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:19:57	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	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	3.02	27683.75	53.675449	54.1	false
PFOS_2	499.0 / 99.0	3.01	5731.41	57.917615	44.7	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	35972.49	122.715201	504.7	true
13C2-PFDA	515.0 / 470.0	3.36	37427.58	106.275578	886.2	false
d5-EtFOSAA	589.0 / 419.0	3.67	28266.21	416.898923	235.8	false

Sample Name	J7570-FS(0)	Injection Vial	21
Sample ID	JAX-RES-08212018-1330-36	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:28:54	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	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	3.02	6060.58	8.137356	19.5	false
PFOS_2	499.0 / 99.0	3.02	1644.22	12.027435	14.6	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	34740.46	109.914839	479.3	false
13C2-PFDA	515.0 / 470.0	3.36	32857.91	86.531551	746.4	false
d5-EtFOSAA	589.0 / 419.0	3.67	24864.43	372.114946	226.5	false

Sample Name	KZ08 IB	Injection Vial	14
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:26:21	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	CR649PB-FS(0)	Injection Vial	17
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:53:09	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.300	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.079	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.024	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.285	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.317	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.207	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.047	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.159	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.049	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.554	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.68	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.061	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	J7566-FS(0)	Injection Vial	19
Sample ID	JAX-RES-08212018-0945-11	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:10:59	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	J7568-FS(0)	Injection Vial	20
Sample ID	JAX-RES-08212018-1130-10	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:19:57	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.207	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	J7570-FS(0)	Injection Vial	21
Sample ID	JAX-RES-08212018-1330-36	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:28:54	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.271	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	KZ08 IB	Injection Vial	14
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:26:21	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	161003.39	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	161003.39	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	161003.39	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	161003.39	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	161003.39	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	161003.39	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	32500.03	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27868.55	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	27868.55	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27868.55	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	27868.55	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	32500.03	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	32500.03	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	27868.55	400.00

Sample Name	CR649PB-FS(0)	Injection Vial	17
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:53:09	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	158842.54	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	158842.54	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	158842.54	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	158842.54	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	158842.54	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	158842.54	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31951.71	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27761.75	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	27761.75	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27761.75	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	27761.75	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	31951.71	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	31951.71	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	27761.75	400.00

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHpA_2	363.0 / 169.0	2.22	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFOS_2	499.0 / 99.0	3.01	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFDA_1	513.0 / 469.0	3.37	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFUnA_1	563.0 / 519.0	3.69	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFUnA_2	563.0 / 269.0	3.69	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTTrDA_1	663.0 / 619.0	4.21	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTTrDA_2	663.0 / 169.0	4.21	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFOA	415.0 / 370.0	32060.62	100.00
NMeFOSAA_1	570.0 / 419.0	3.52	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
NMeFOSAA_2	570.0 / 512.0	3.52	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
NEtFOSAA_1	584.0 / 419.0	3.68	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
NEtFOSAA_2	584.0 / 483.0	3.68	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	32060.62	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	32060.62	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00

Sample Name	J7566-FS(0)	Injection Vial	19
Sample ID	JAX-RES-08212018-0945-11	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:10:59	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	156120.75	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	156120.75	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	156120.75	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	156120.75	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	156120.75	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	156120.75	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31166.54	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27254.47	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	27254.47	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27254.47	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	27254.47	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	31166.54	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	31166.54	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	27254.47	400.00

Sample Name	J7568-FS(0)	Injection Vial	20
Sample ID	JAX-RES-08212018-1130-10	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:19:57	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	134513.66	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	134513.66	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	134513.66	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	134513.66	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	134513.66	287.00
PFOS_2	499.0 / 99.0	3.01	13C4-PFOS	503.0 / 80.0	134513.66	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFTTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFTTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	29108.54	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24571.28	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	24571.28	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24571.28	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24571.28	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	29108.54	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	29108.54	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	24571.28	400.00

Sample Name	J7570-FS(0)	Injection Vial	21
Sample ID	JAX-RES-08212018-1330-36	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:28:54	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

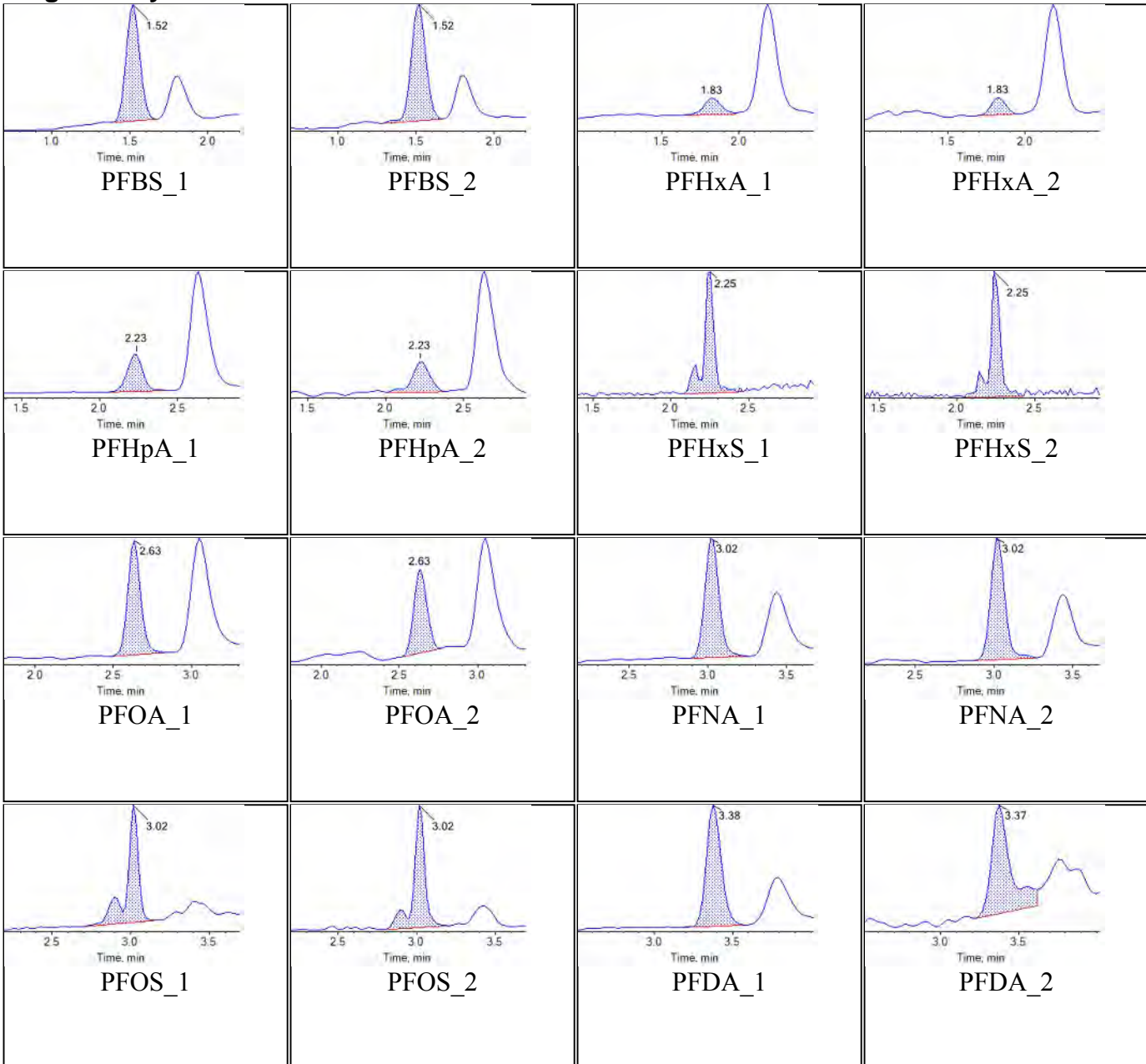
Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	131635.78	287.00
PFBS_2	298.9 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	131635.78	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFHxA_2	313.0 / 119.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFHpA_1	363.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	131635.78	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	131635.78	287.00
PFOA_1	413.0 / 369.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFNA_1	463.0 / 419.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFNA_2	463.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	131635.78	287.00
PFOS_2	499.0 / 99.0	3.02	13C4-PFOS	503.0 / 80.0	131635.78	287.00
PFDA_1	513.0 / 469.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFDA_2	513.0 / 219.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	31385.39	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24215.43	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	24215.43	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24215.43	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24215.43	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	31385.39	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	31385.39	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	24215.43	400.00

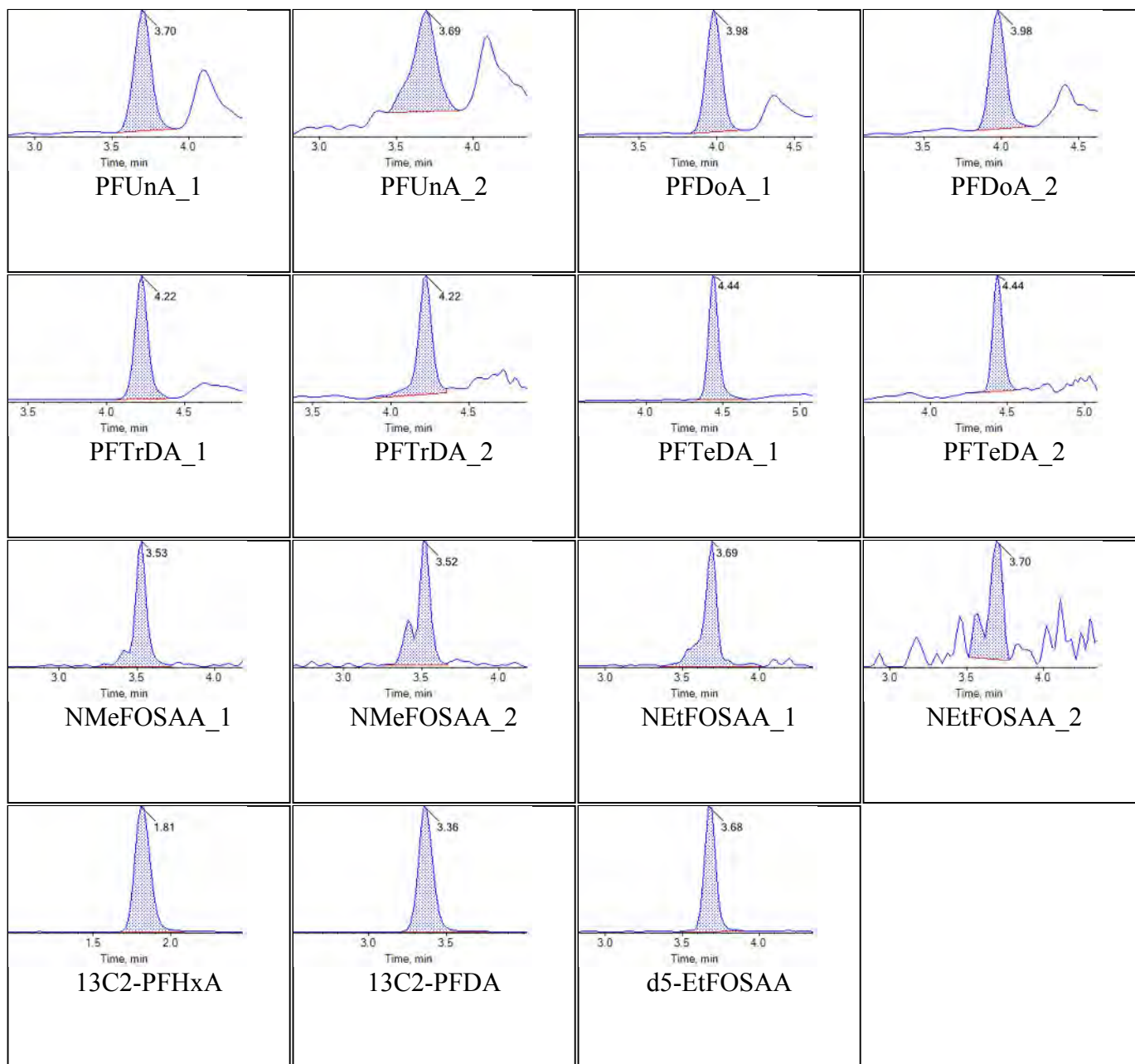
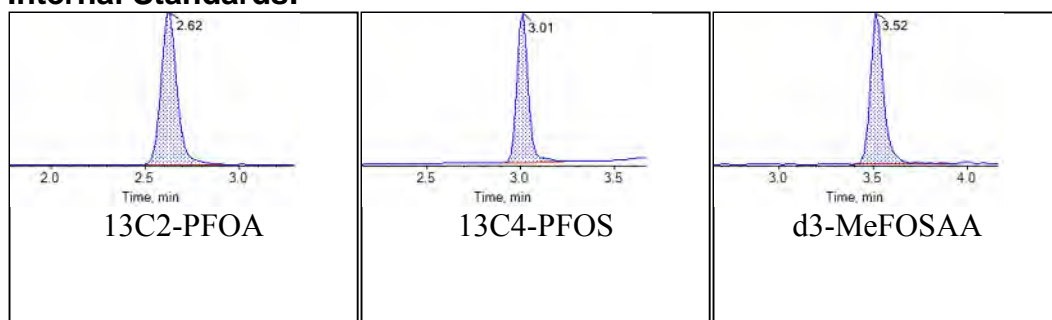
Chromatograms

Sample Name	JZ80	Injection Vial	7
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:23:46	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

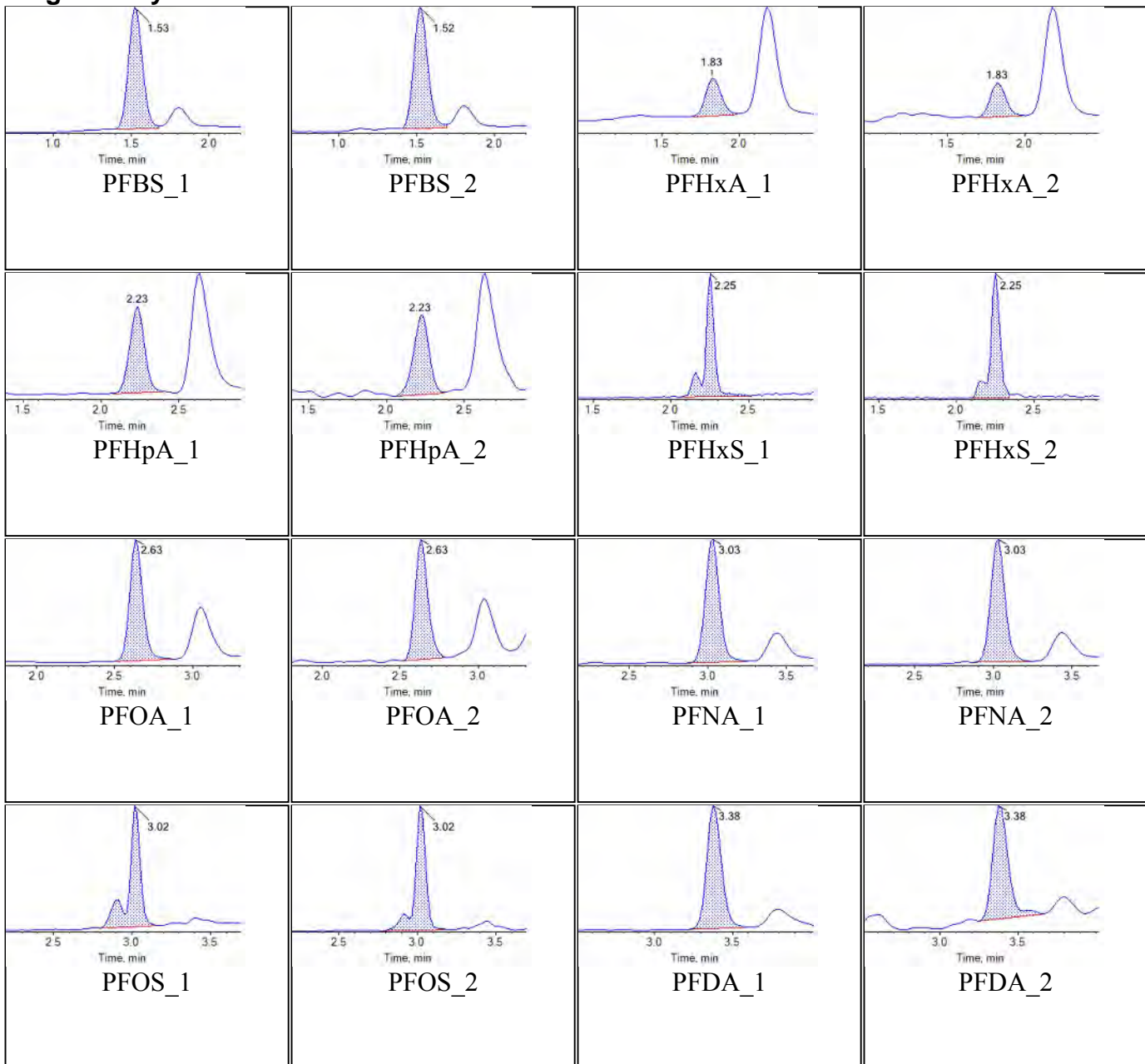


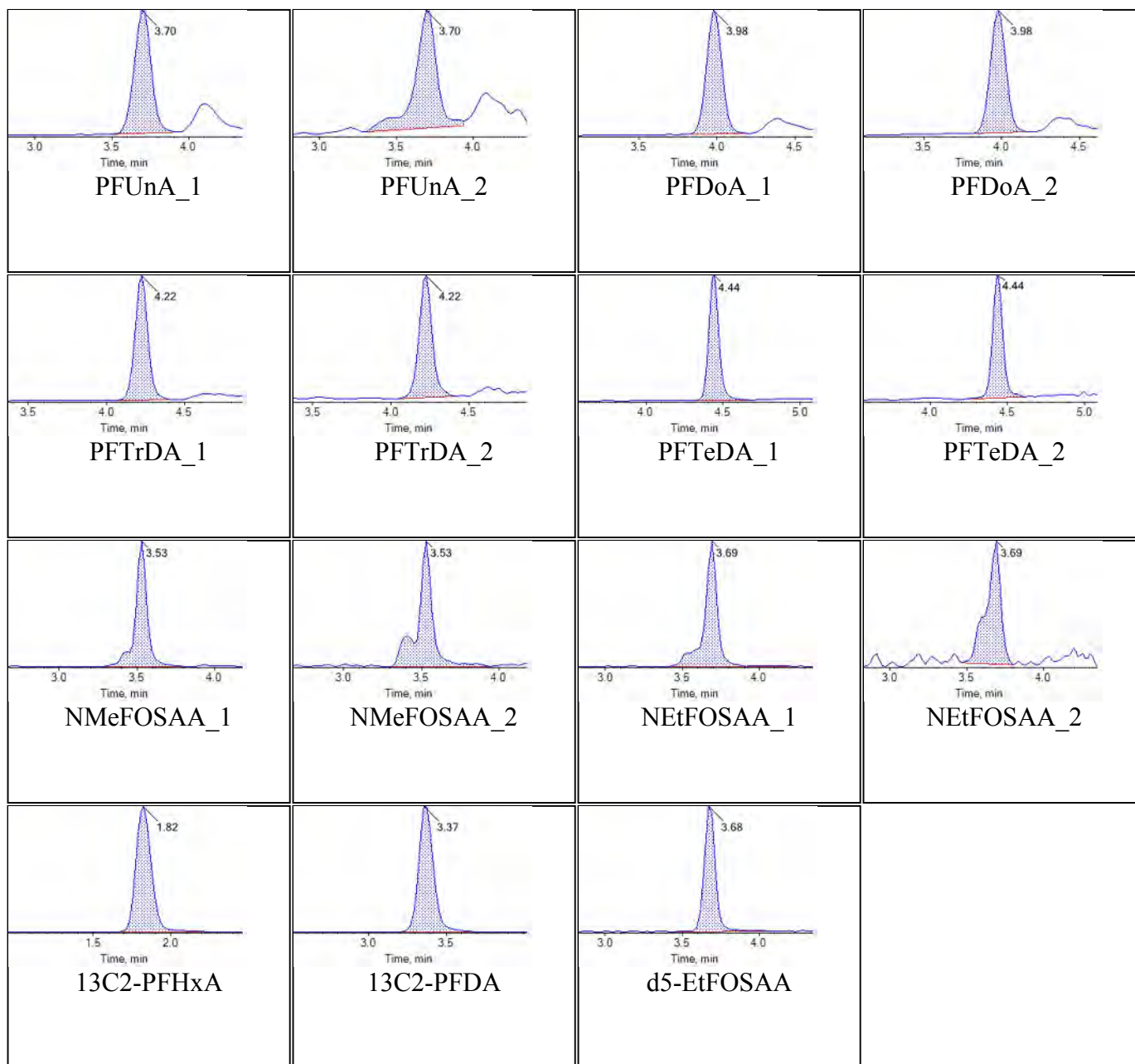
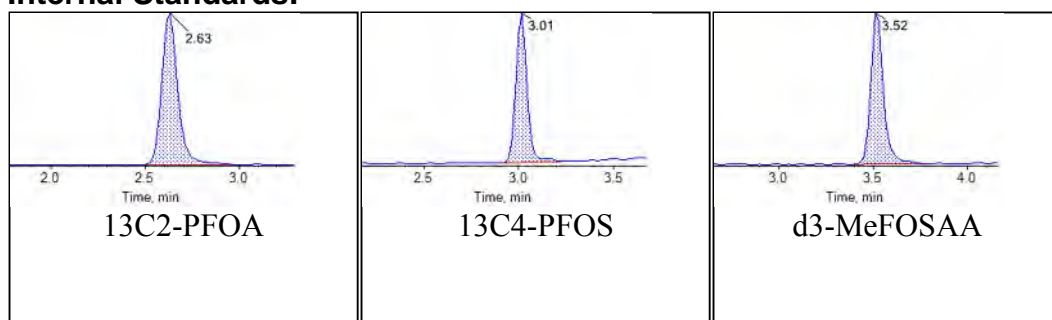
**Internal Standards:**

Sample Name	JZ81	Injection Vial	8
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:32:41	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

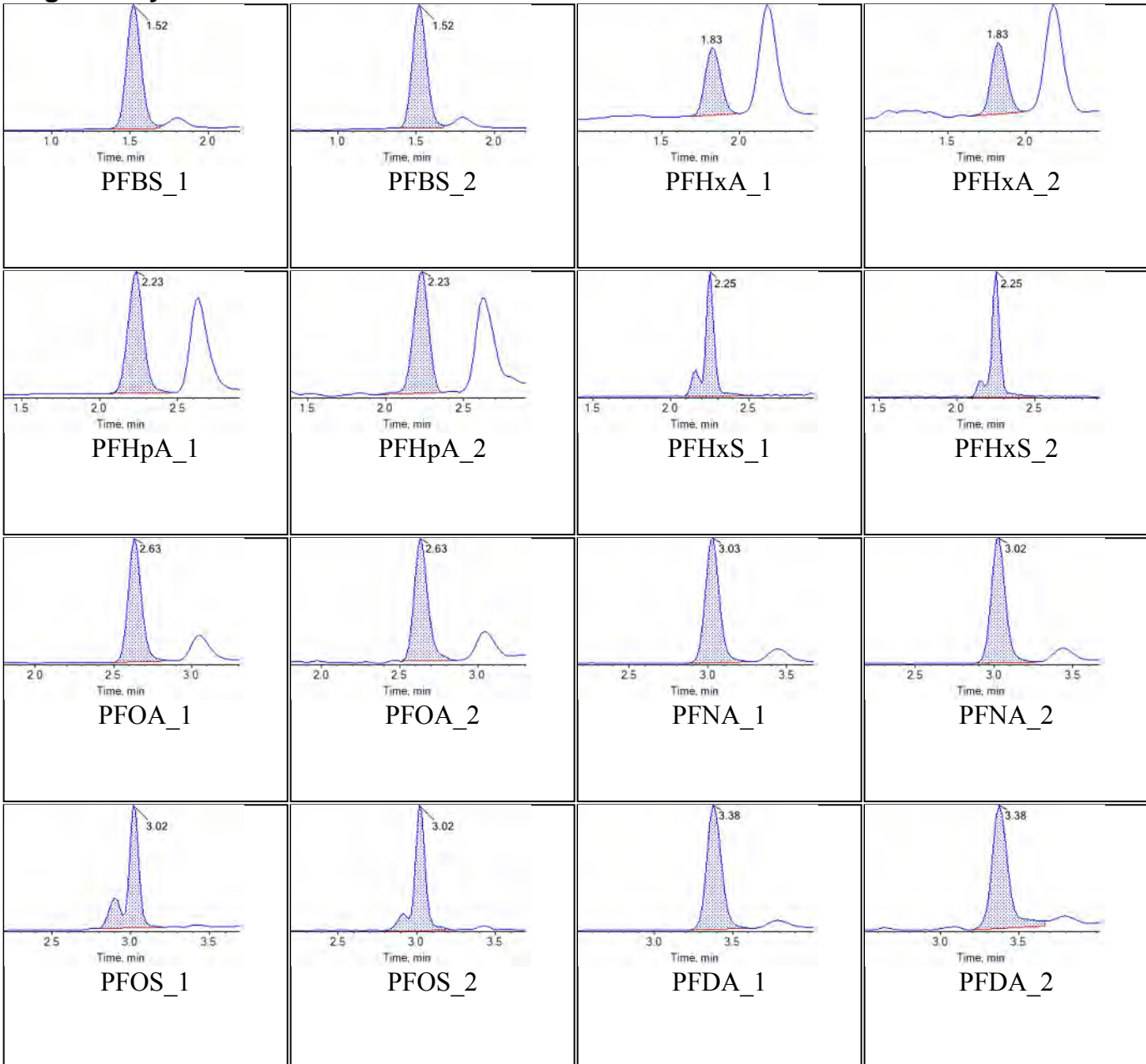


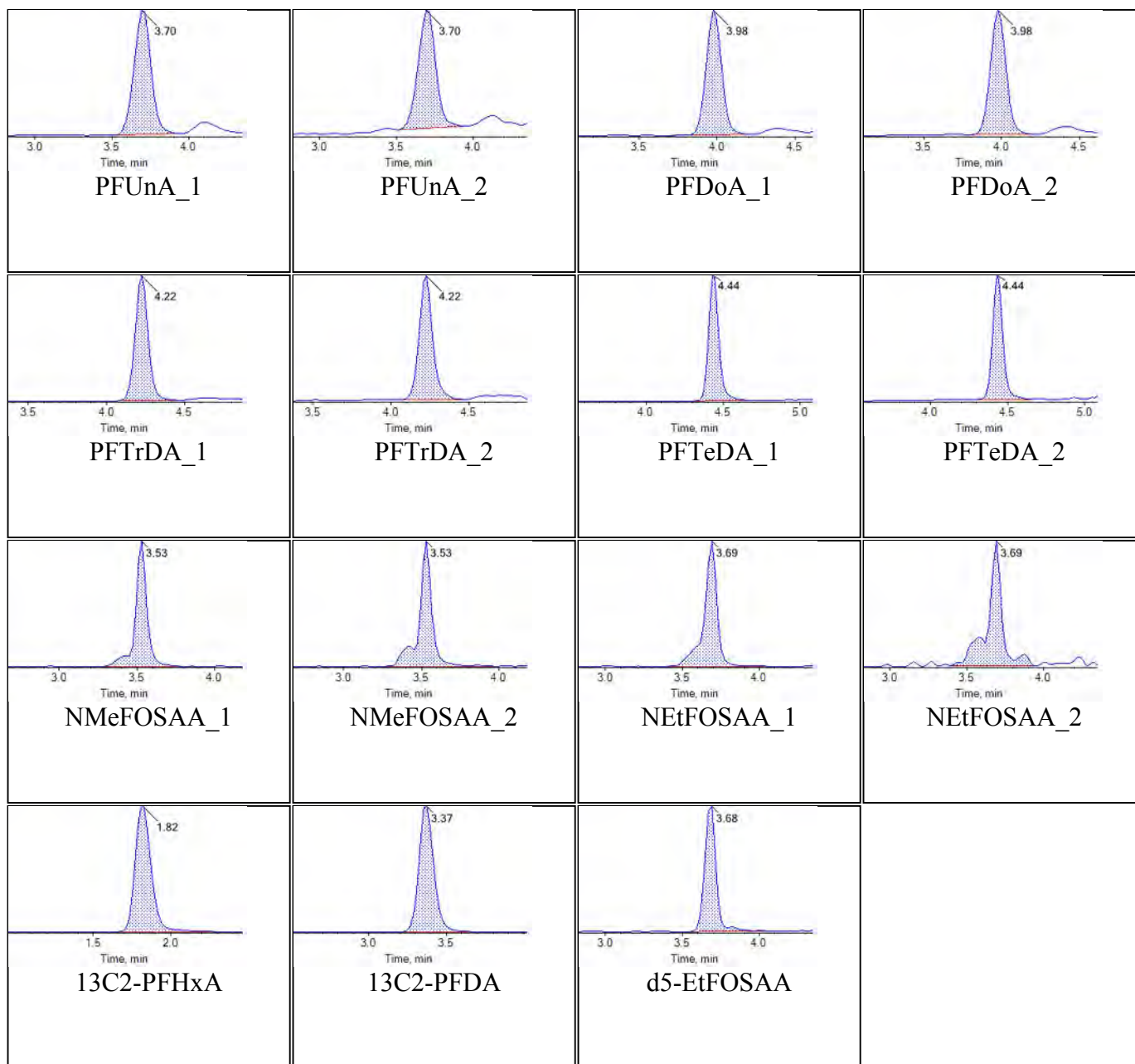
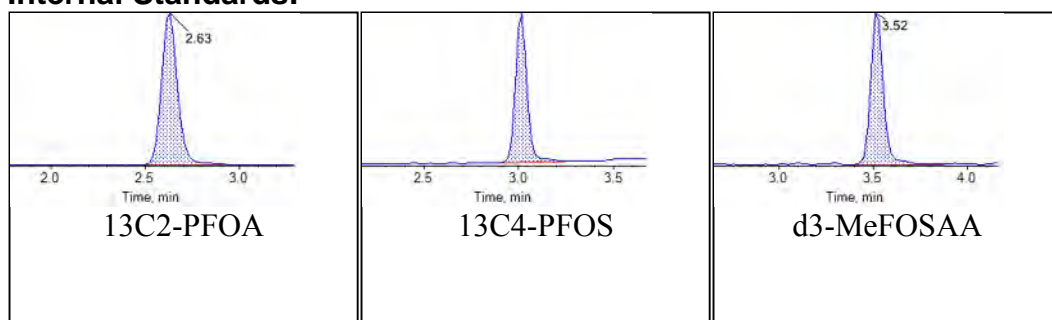
**Internal Standards:**

Sample Name	JZ82	Injection Vial	9
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:41:37	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

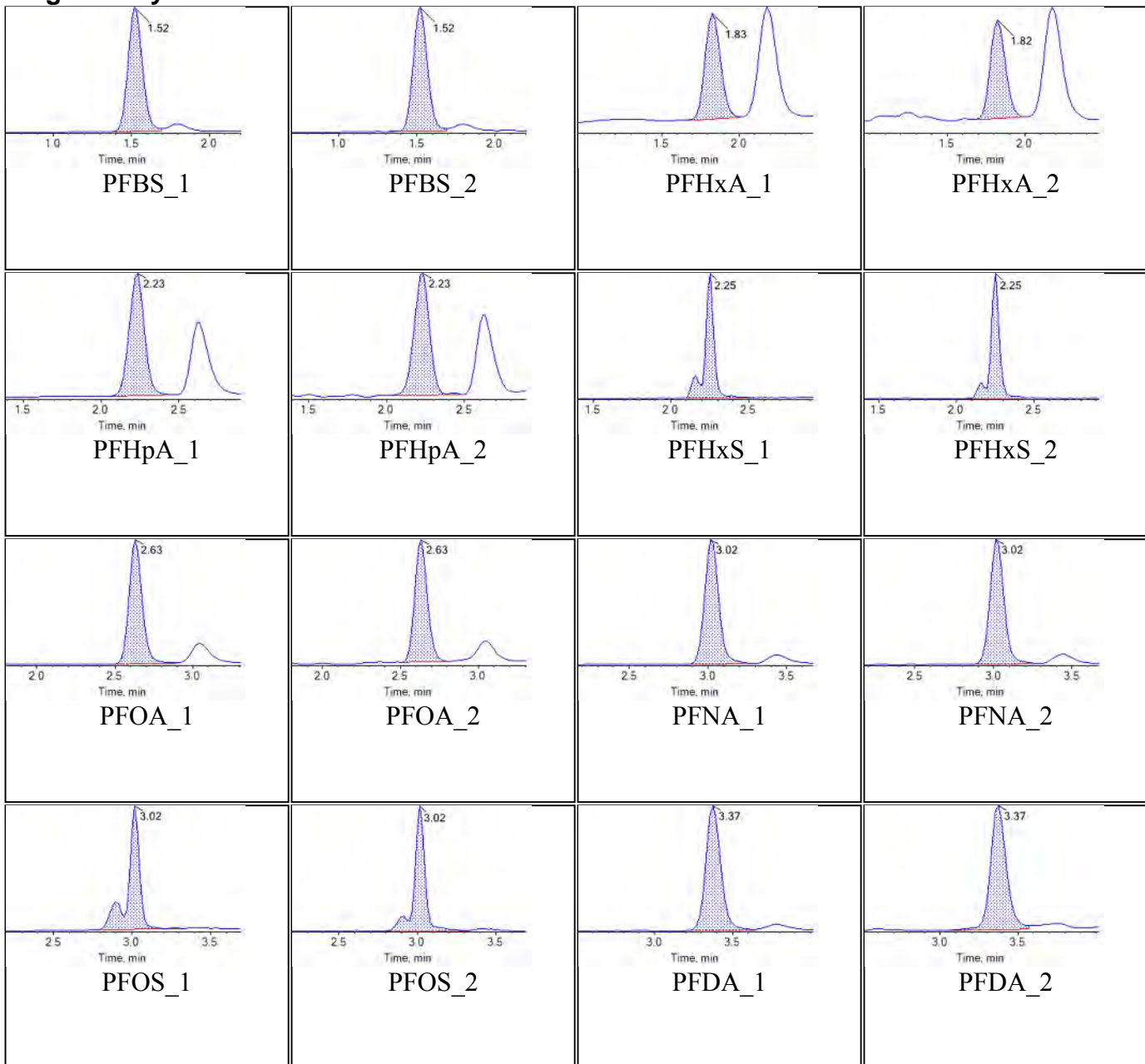


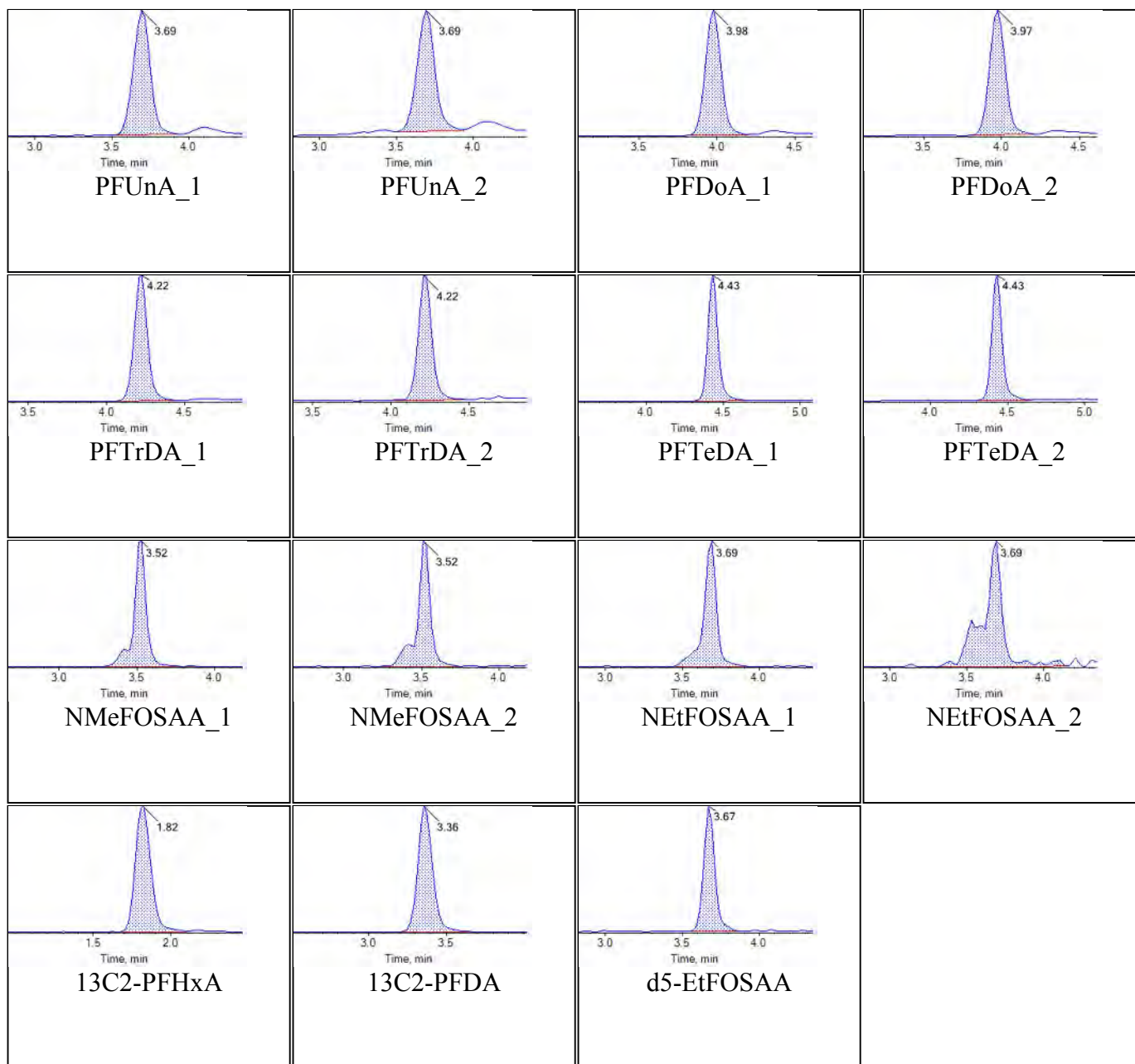
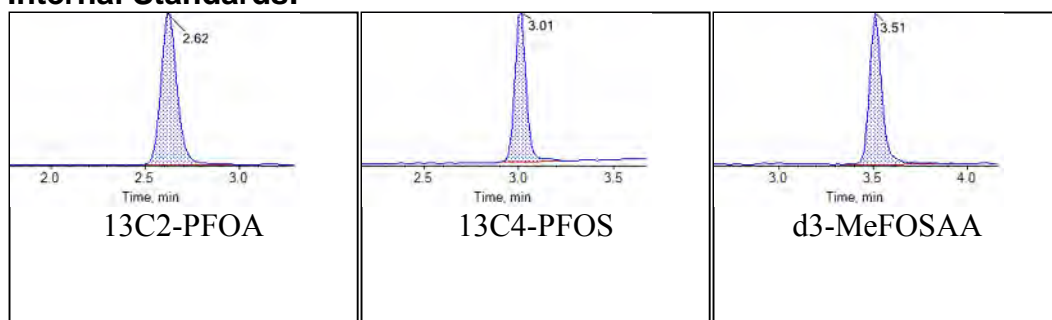
**Internal Standards:**

Sample Name	JZ83	Injection Vial	10
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:50:33	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

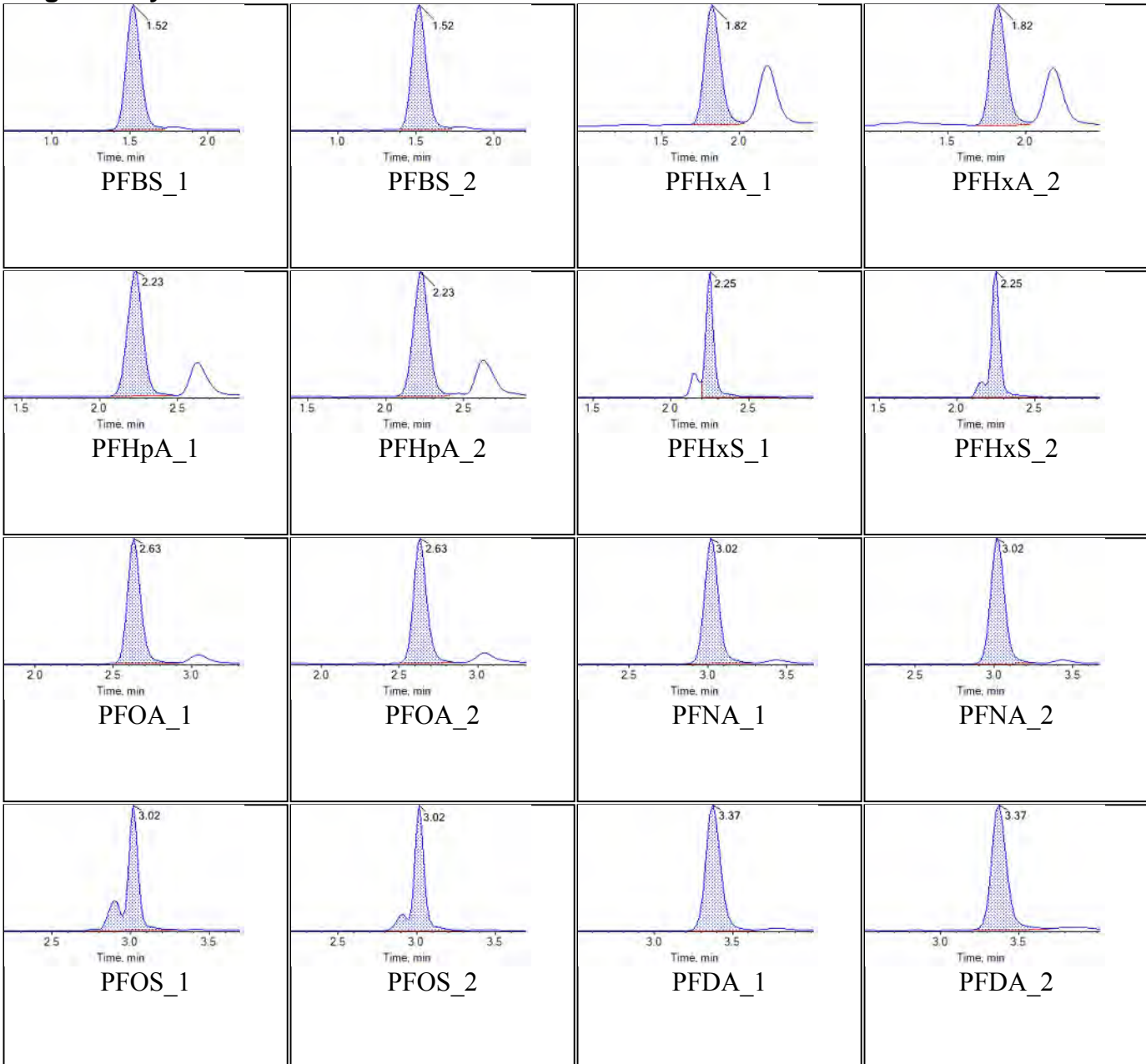


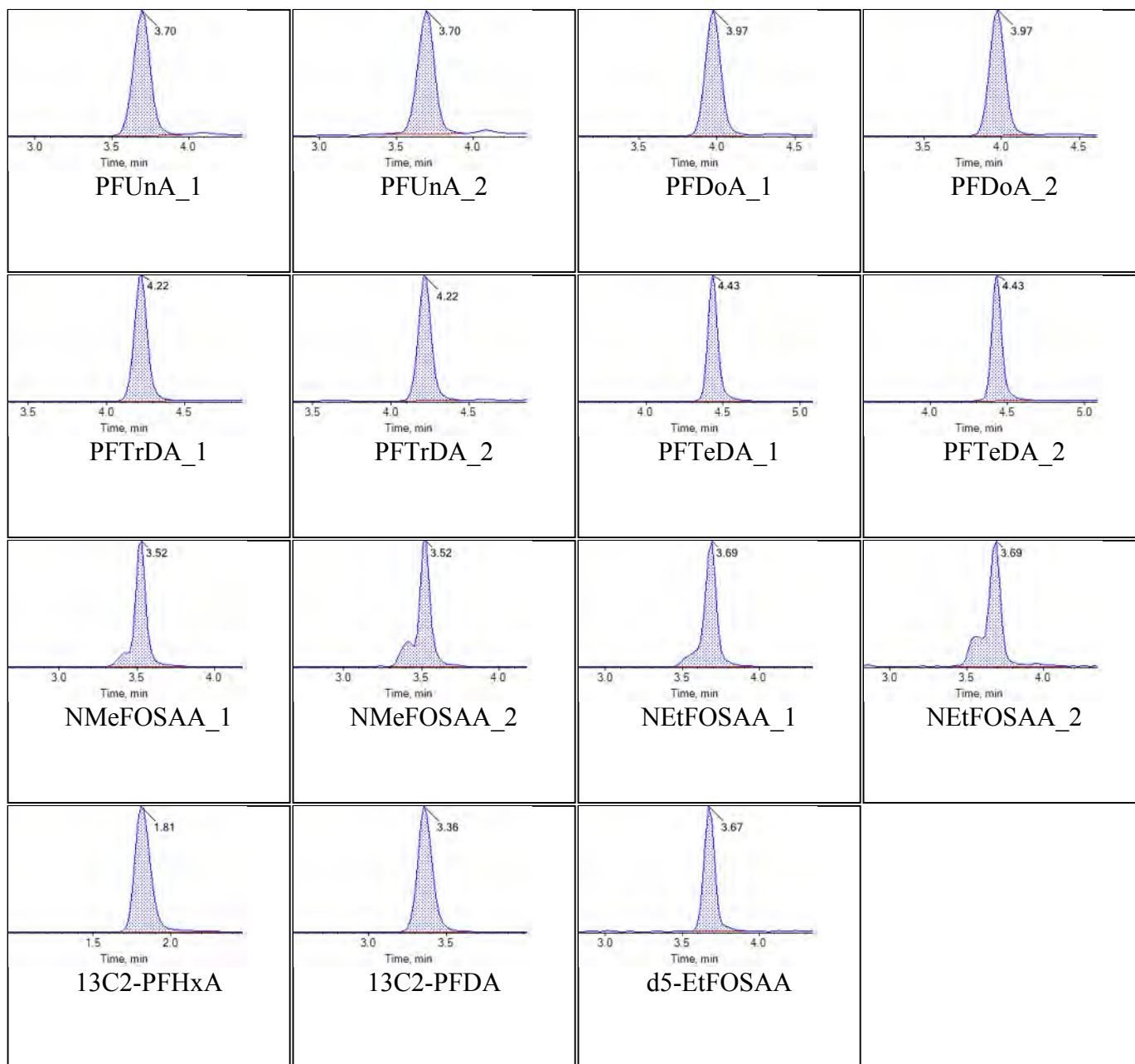
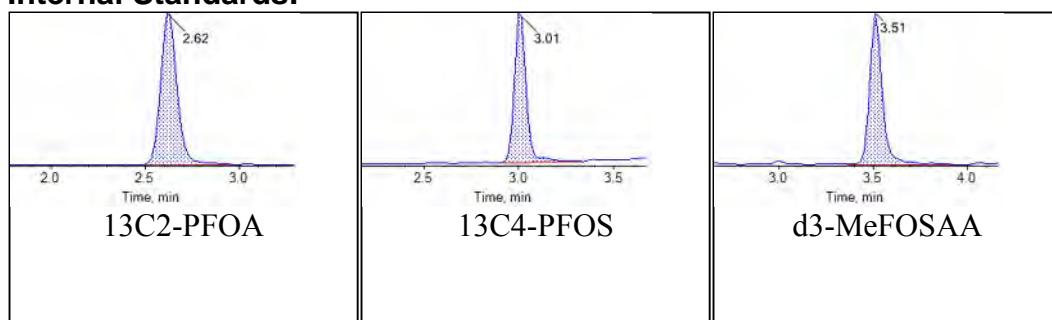
**Internal Standards:**

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:59:30	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

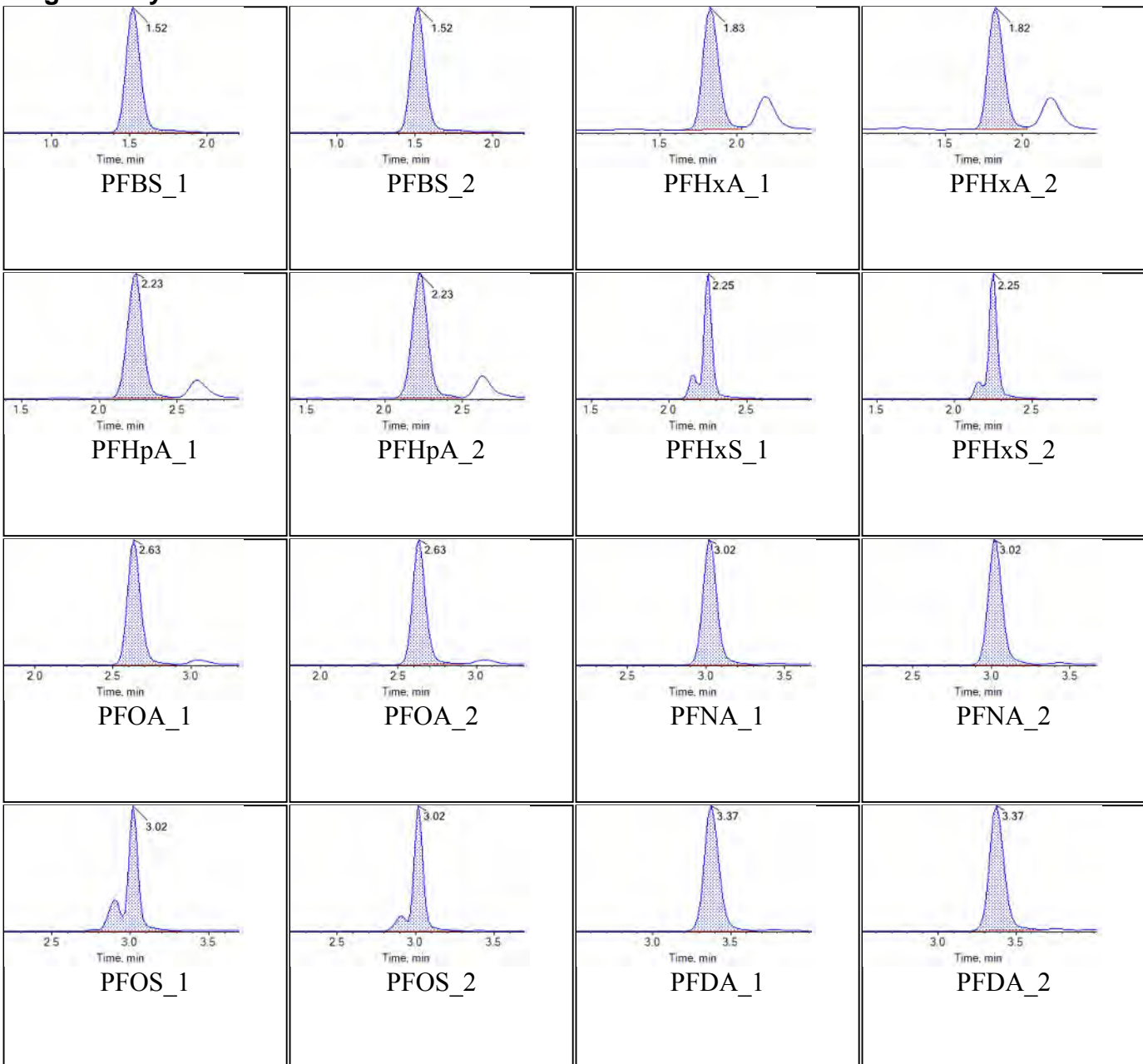


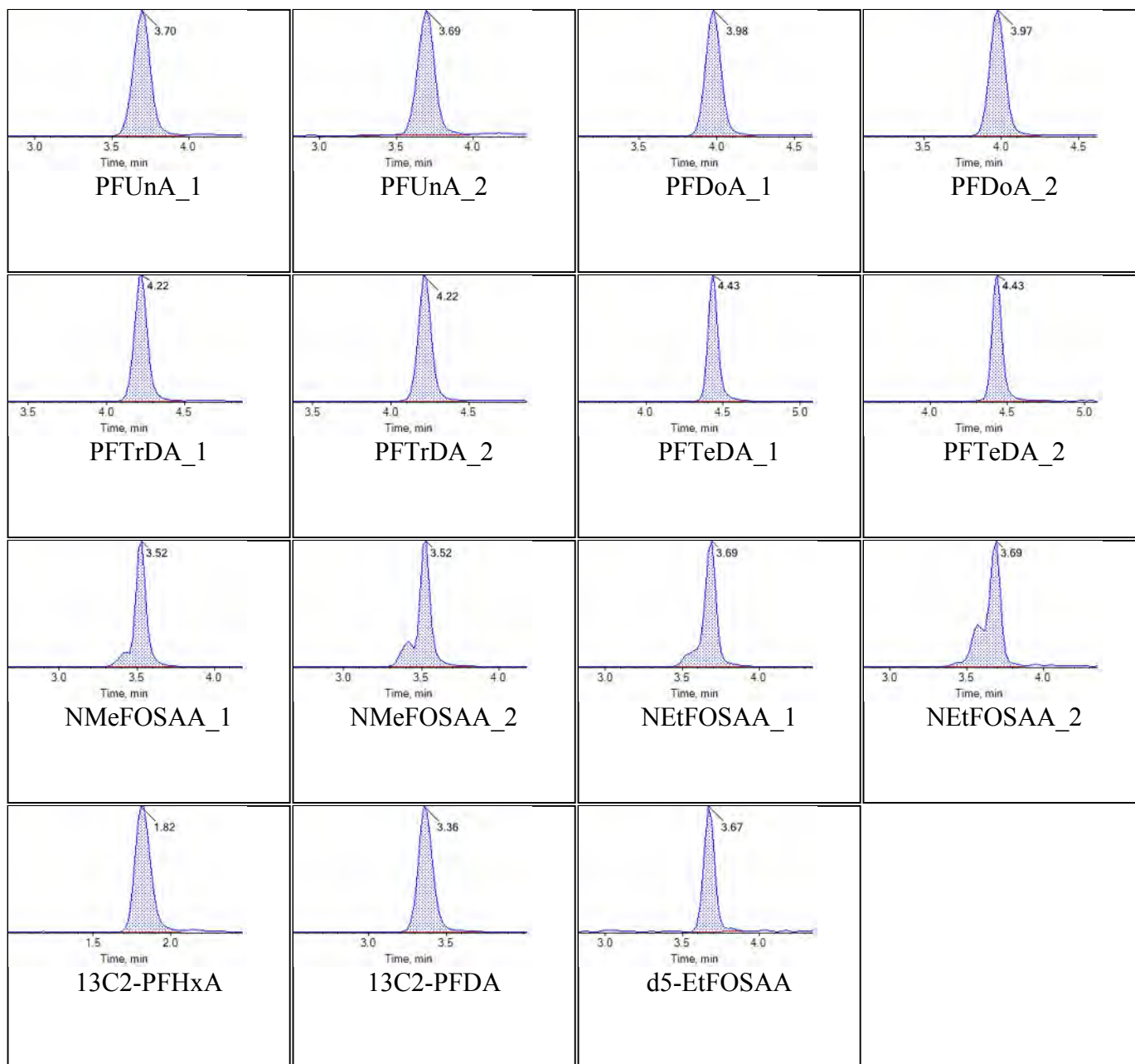
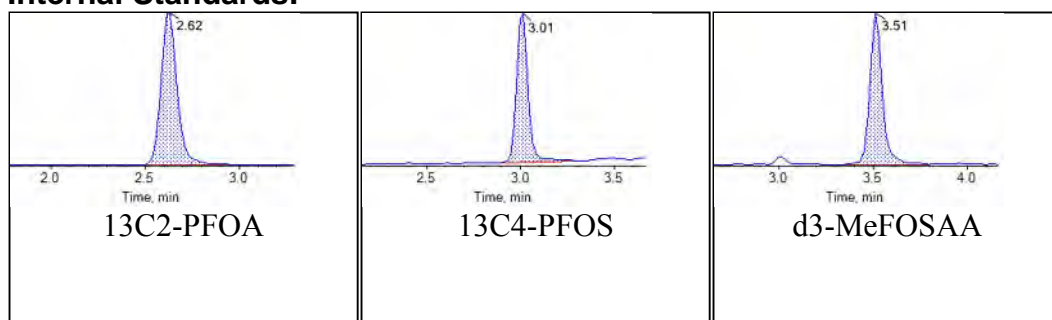
**Internal Standards:**

Sample Name	JZ85	Injection Vial	12
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:08:27	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

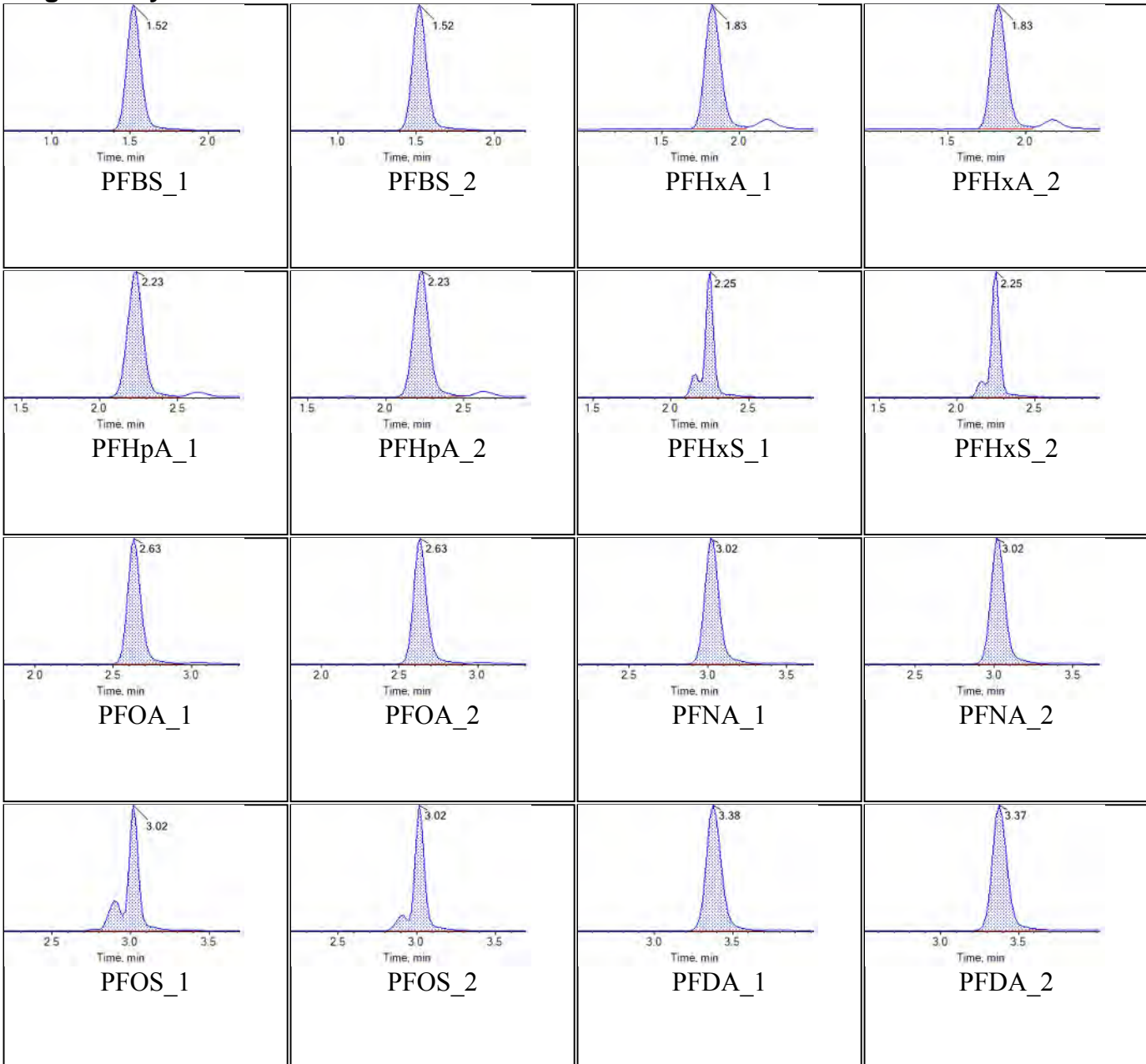


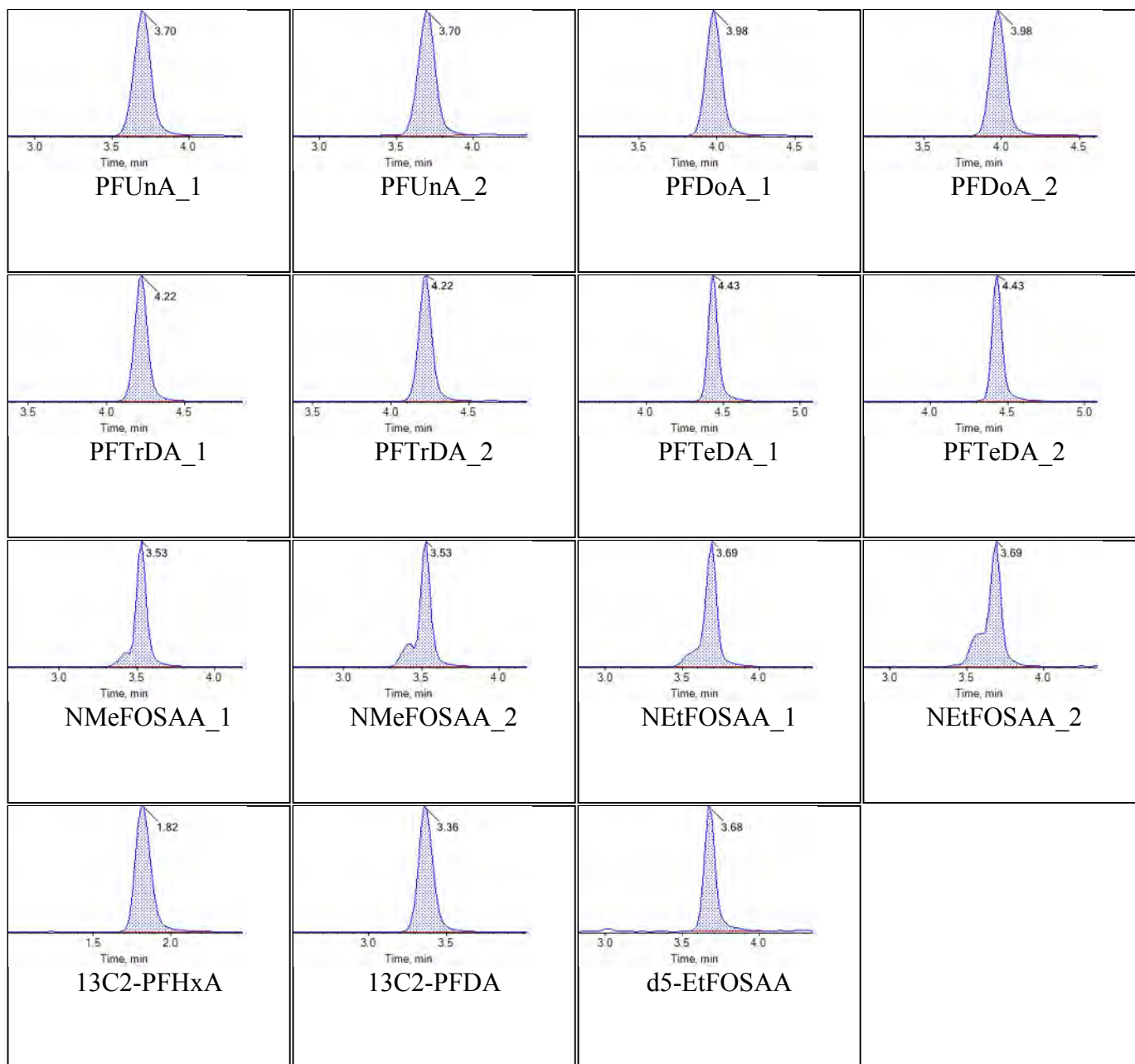
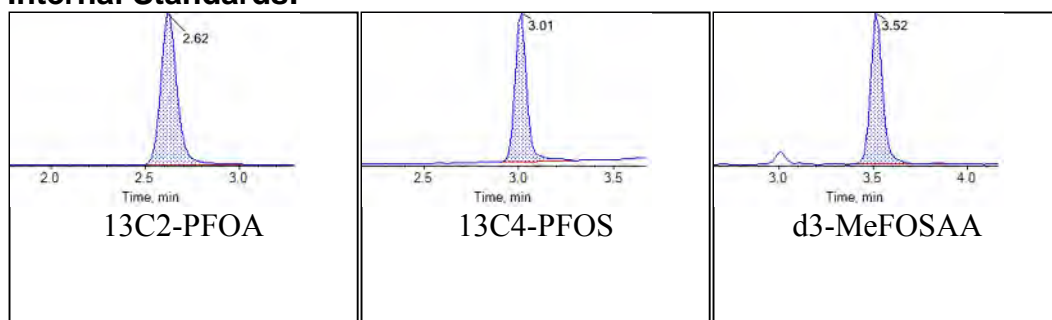
**Internal Standards:**

Sample Name	JZ86	Injection Vial	13
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:17:23	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

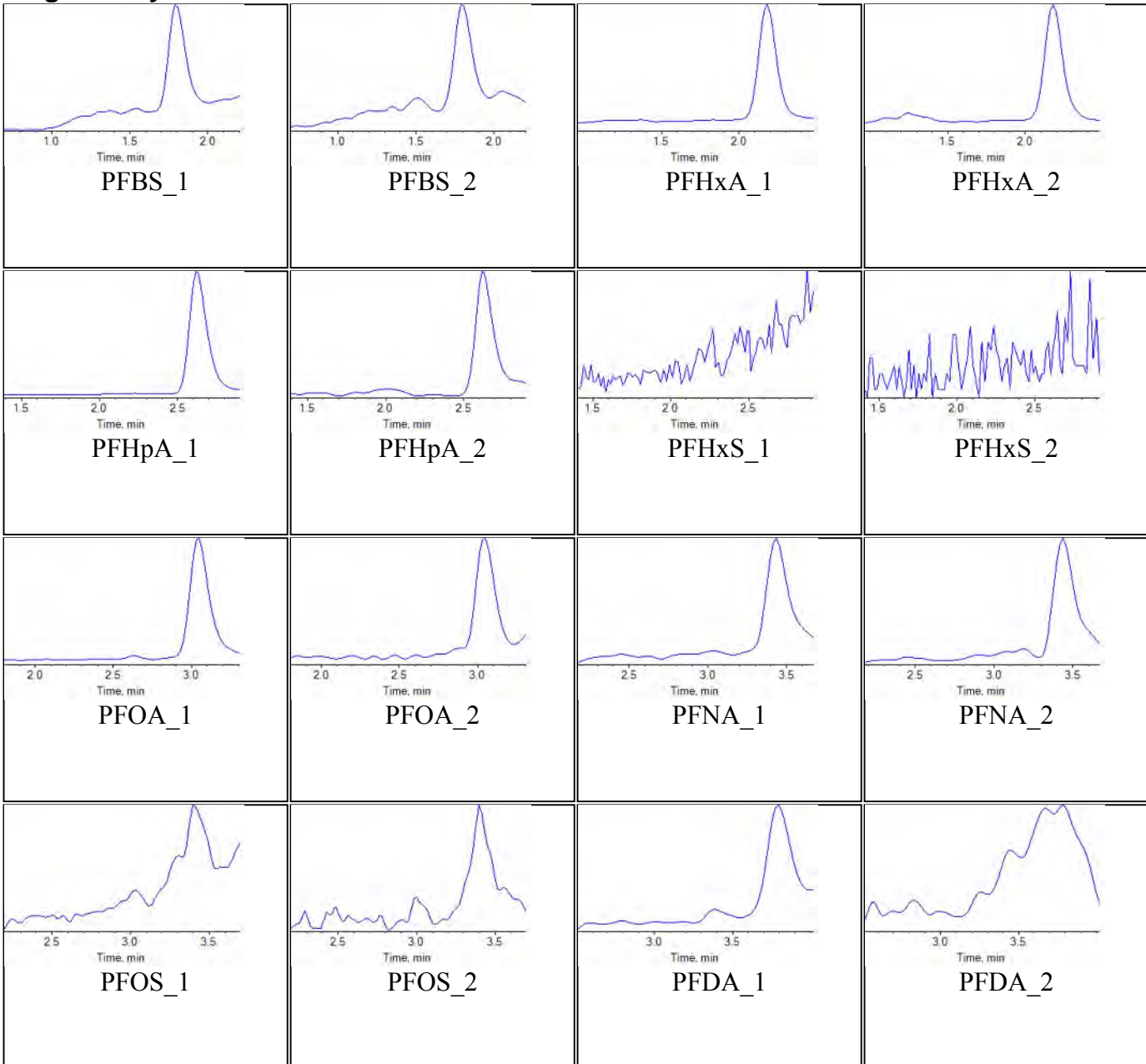


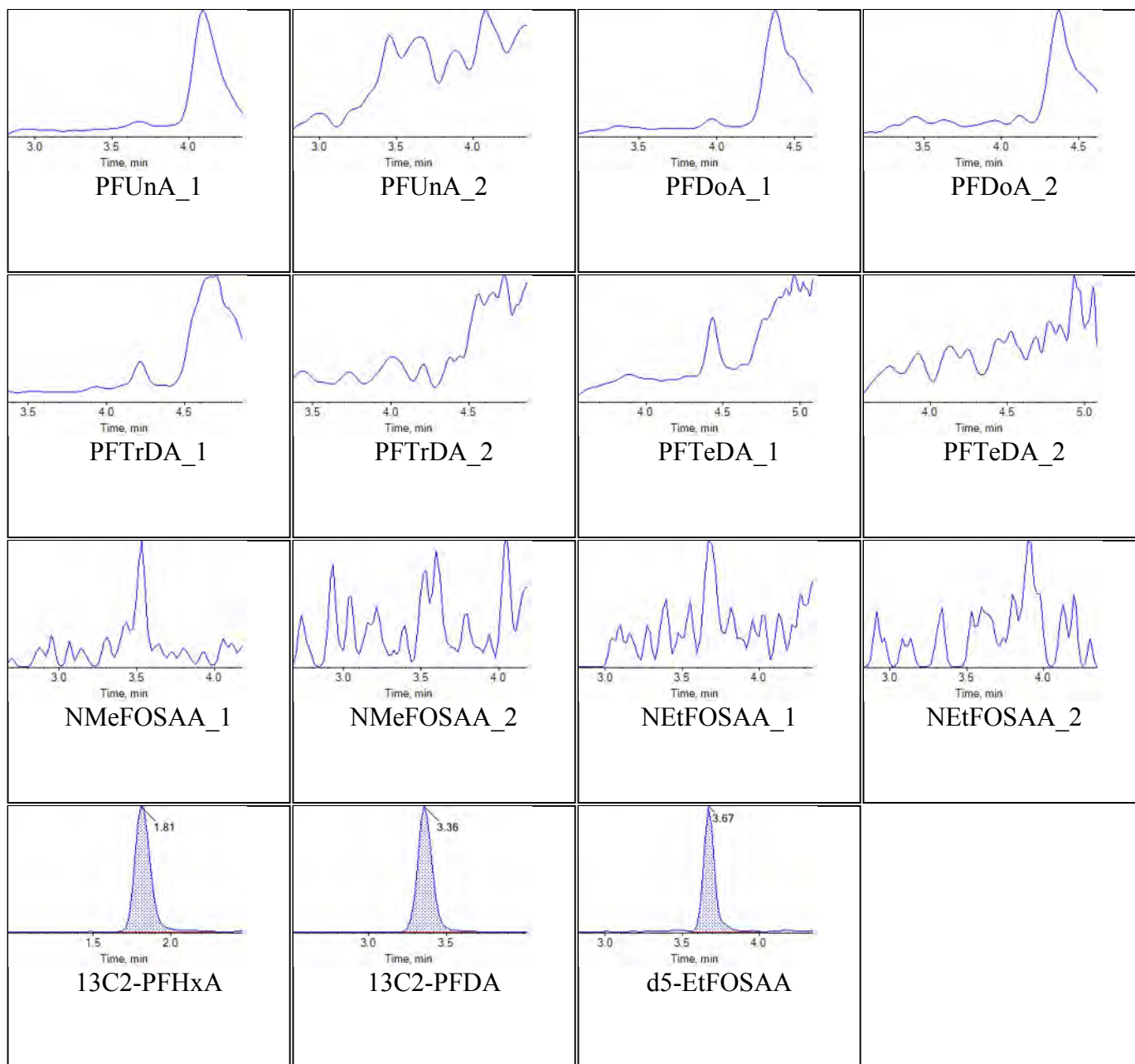
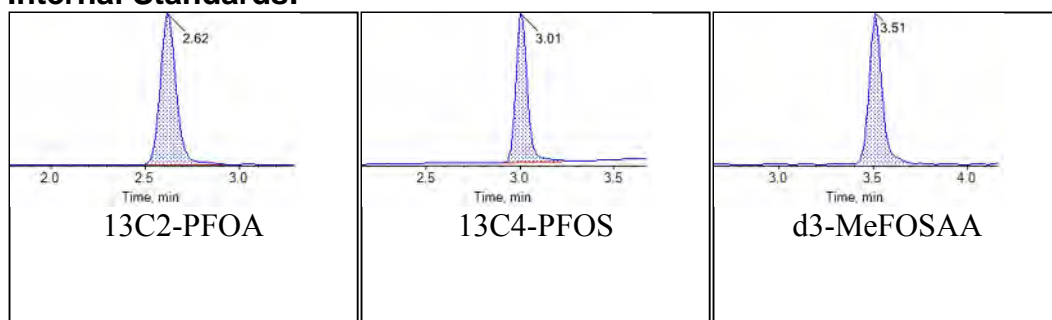
**Internal Standards:**

Sample Name	KZ08 IB	Injection Vial	14
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:26:21	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

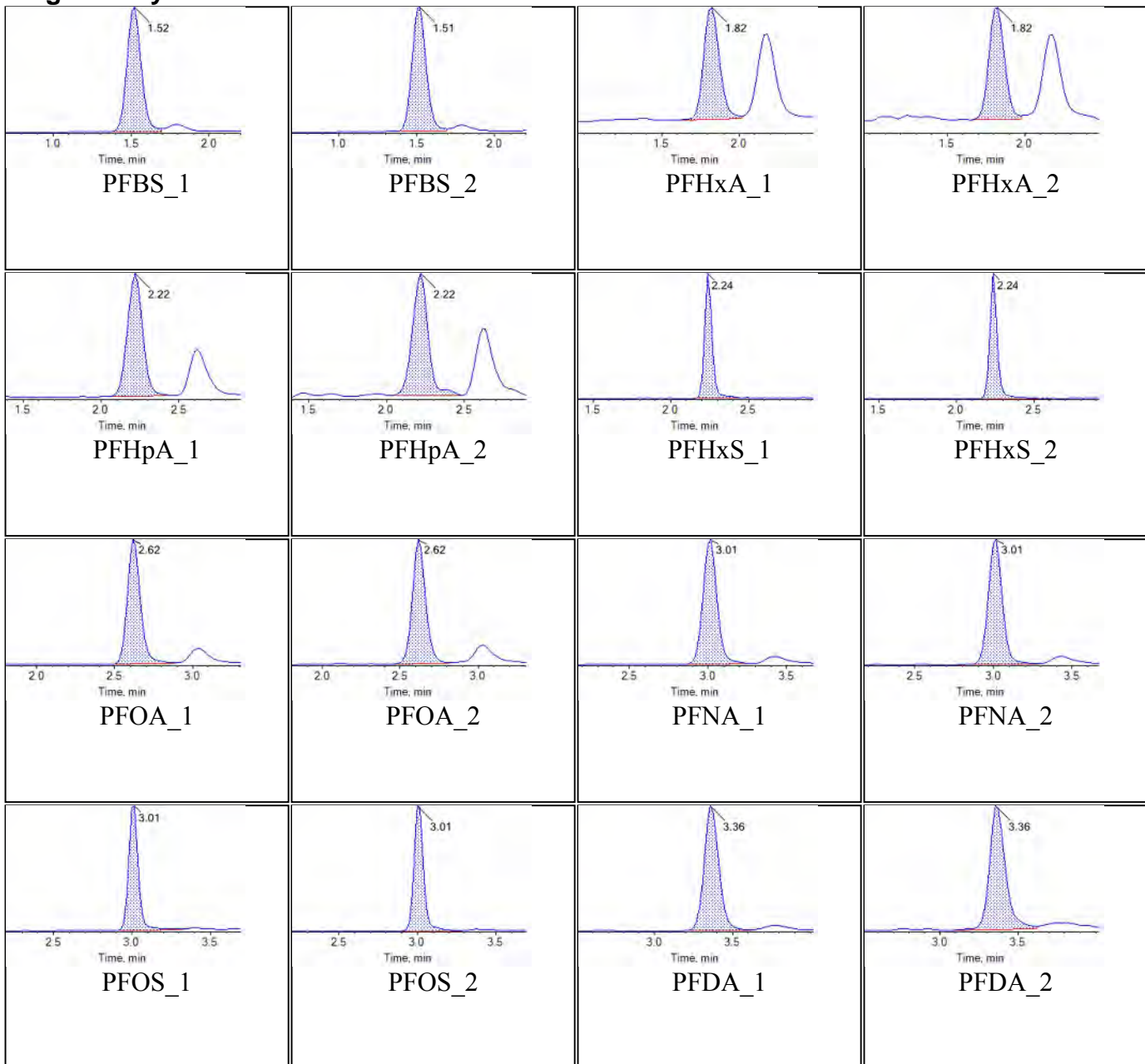


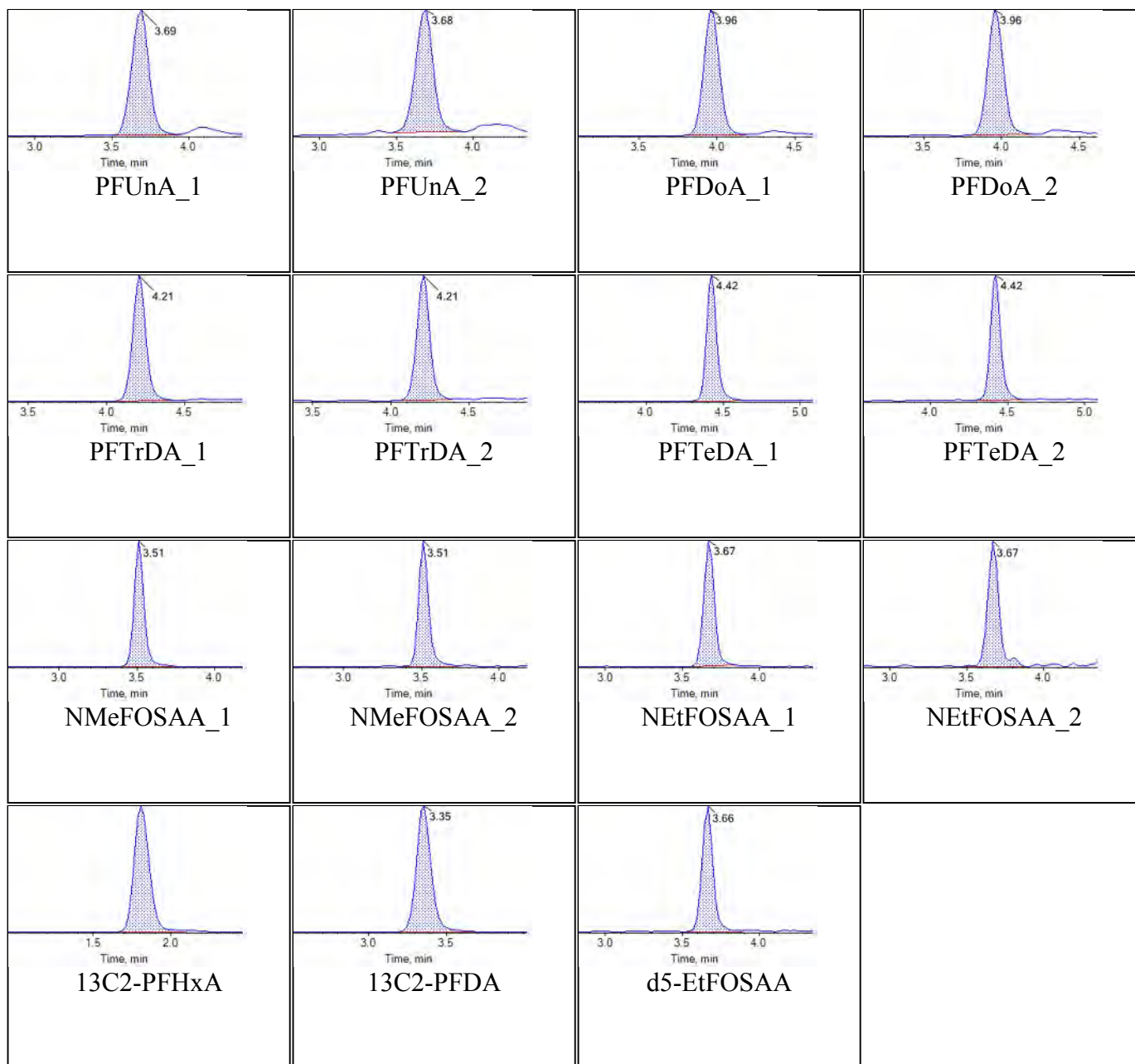
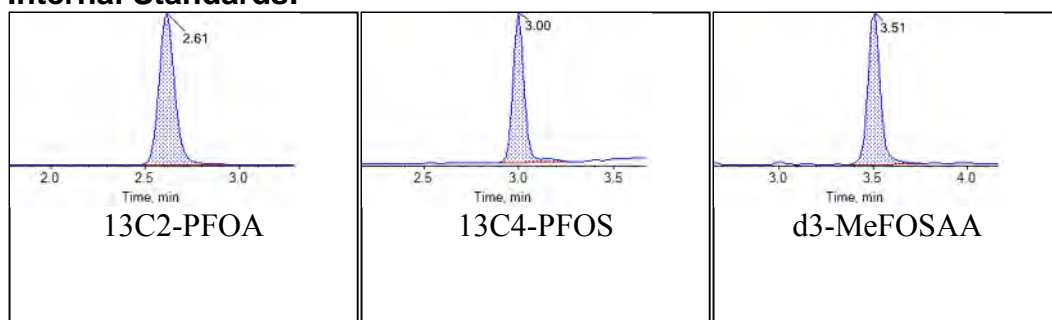
**Internal Standards:**

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

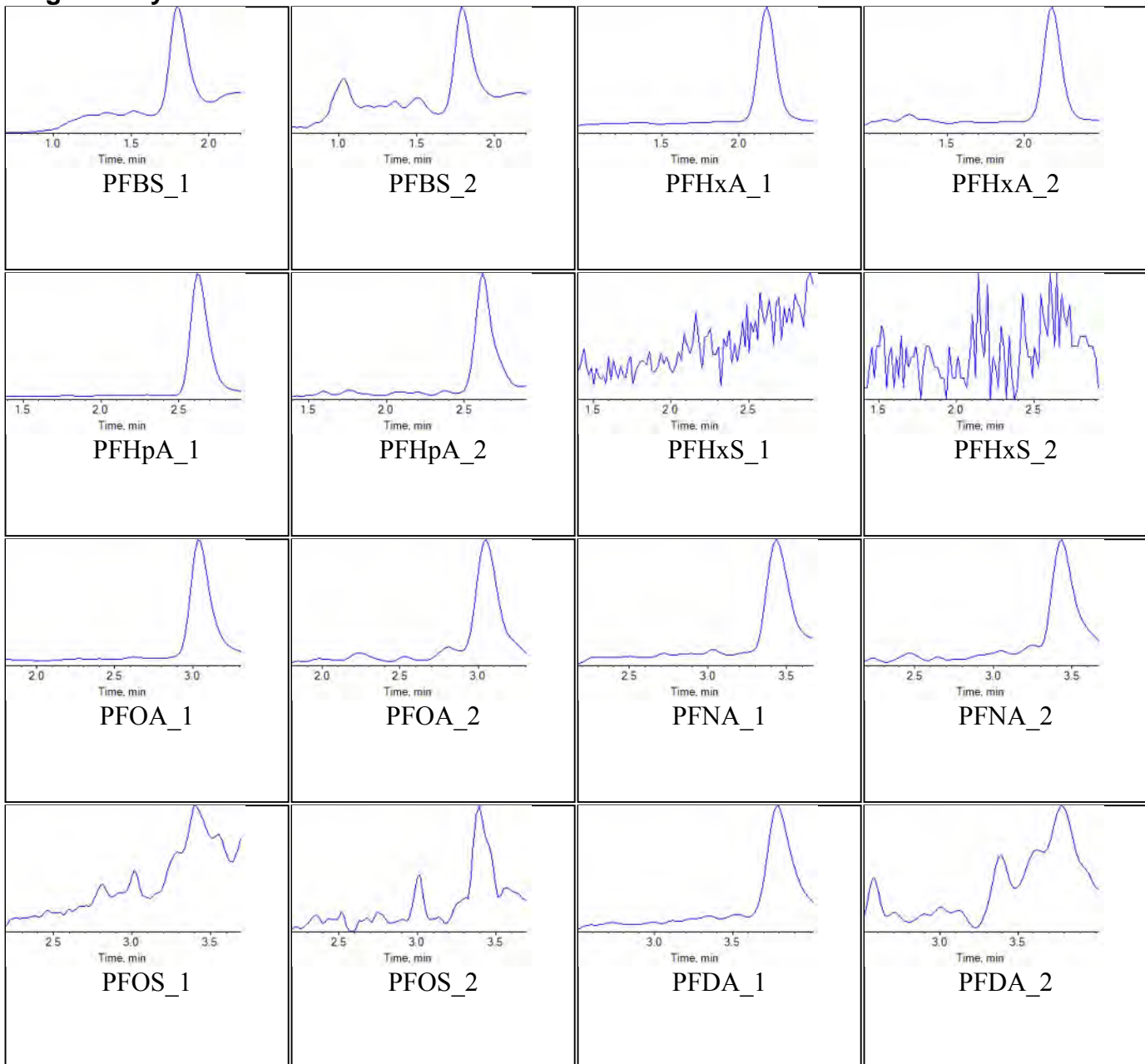


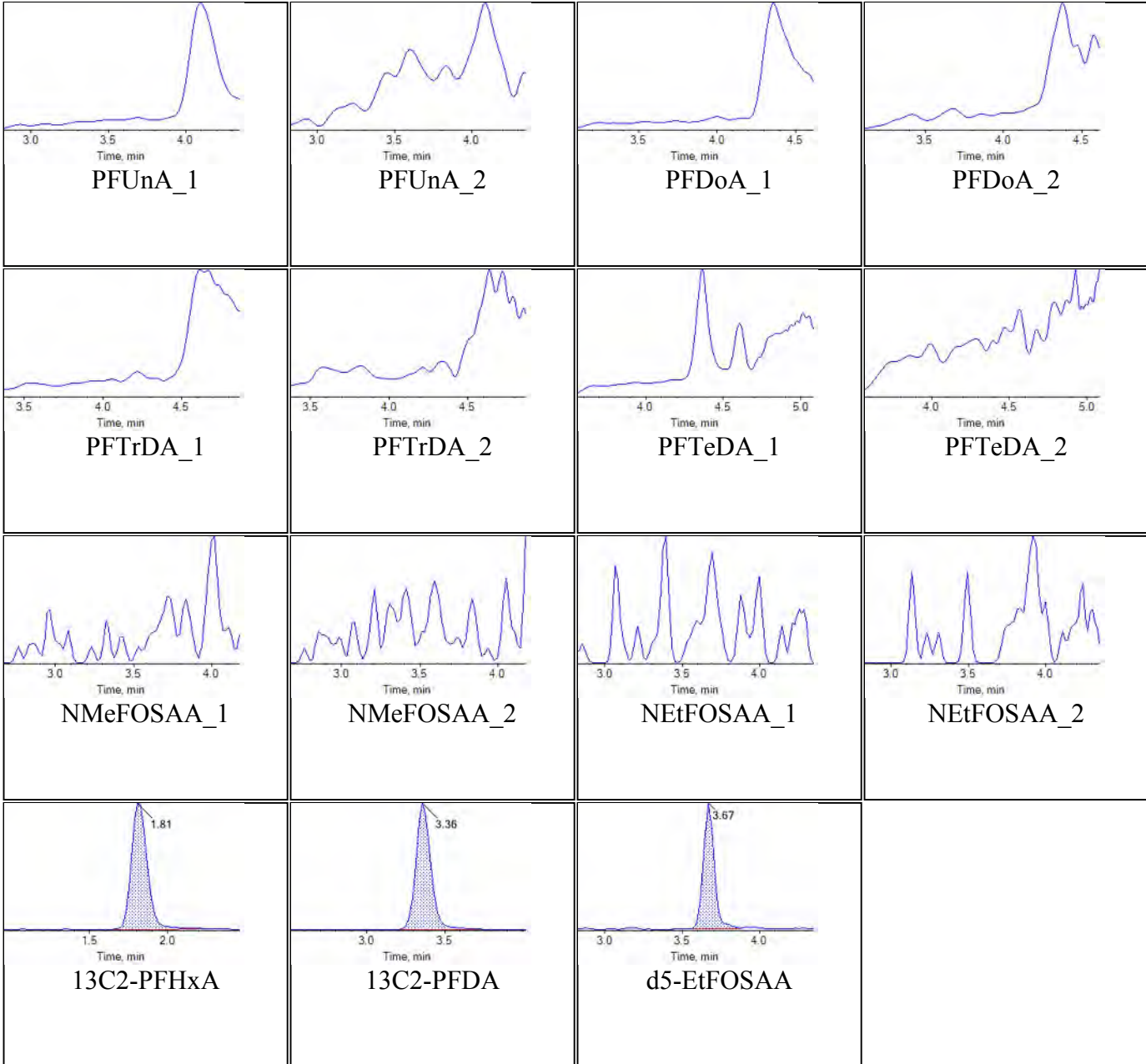
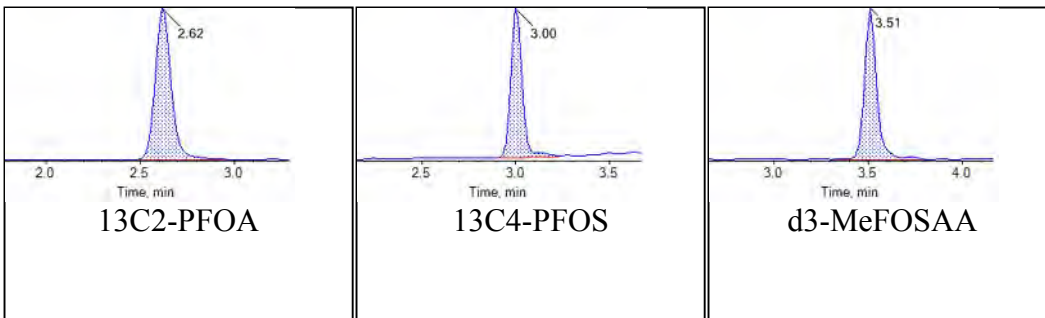
**Internal Standards:**

Sample Name	CR649PB-FS(0)	Injection Vial	17
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:53:09	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

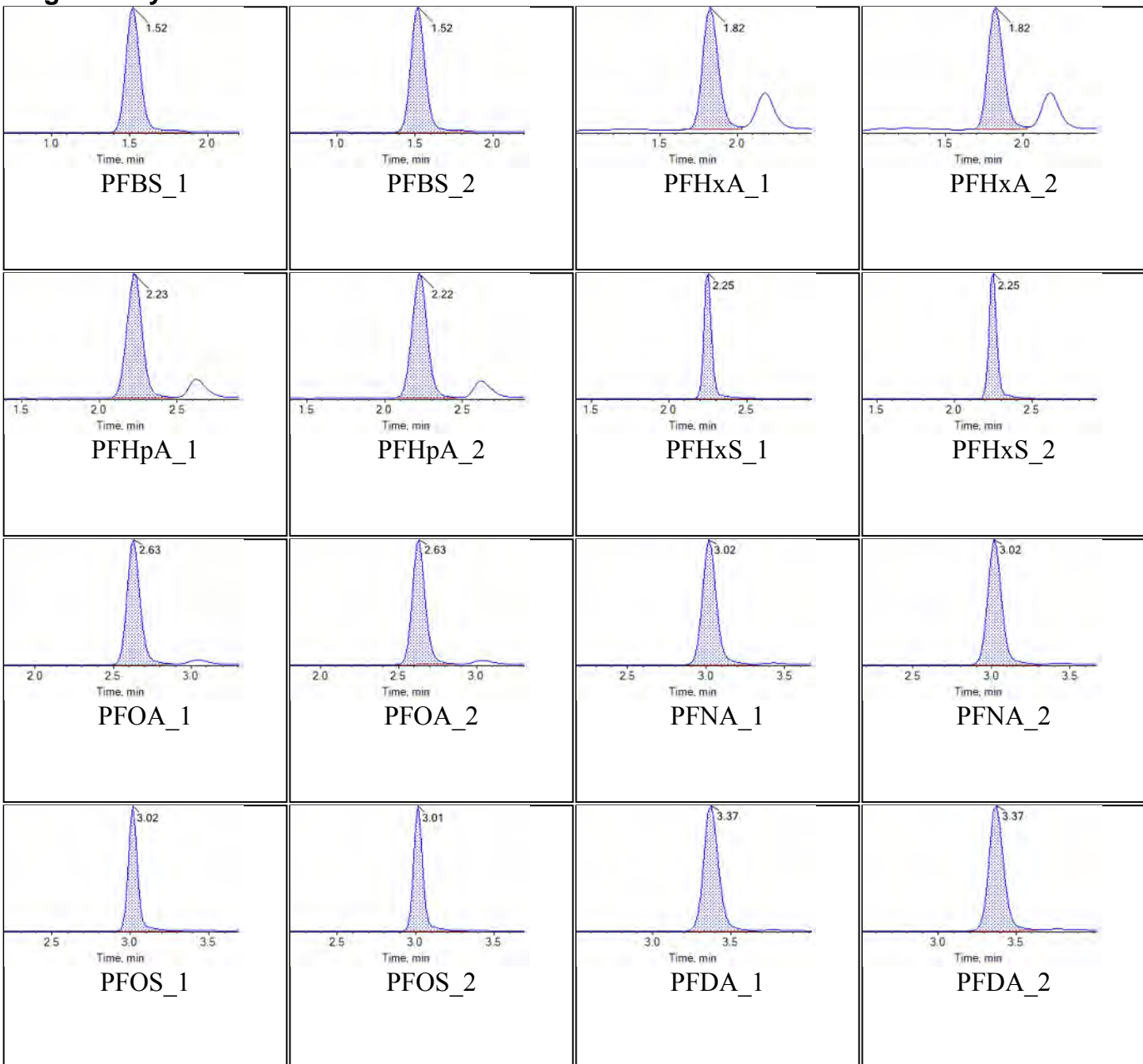


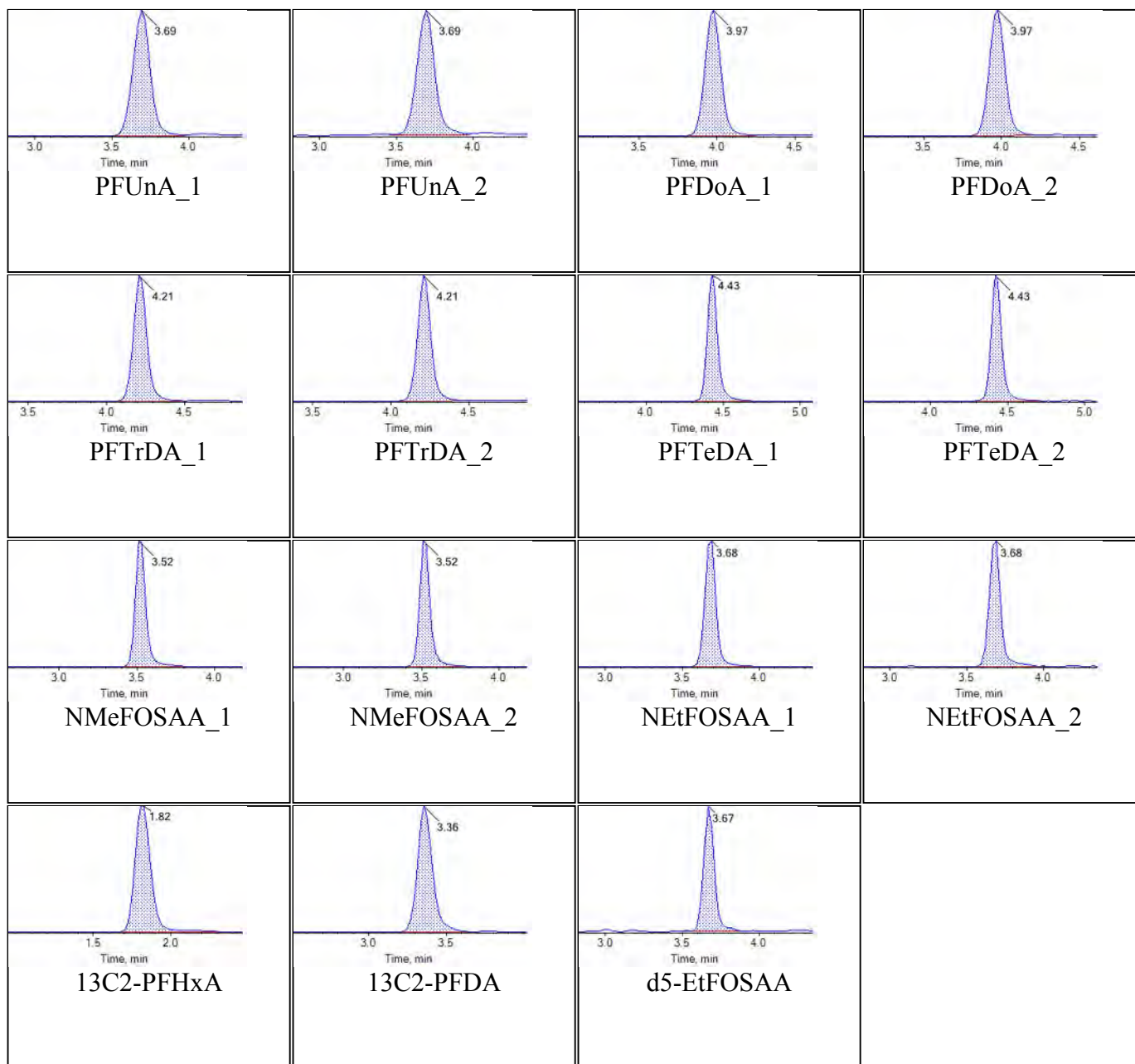
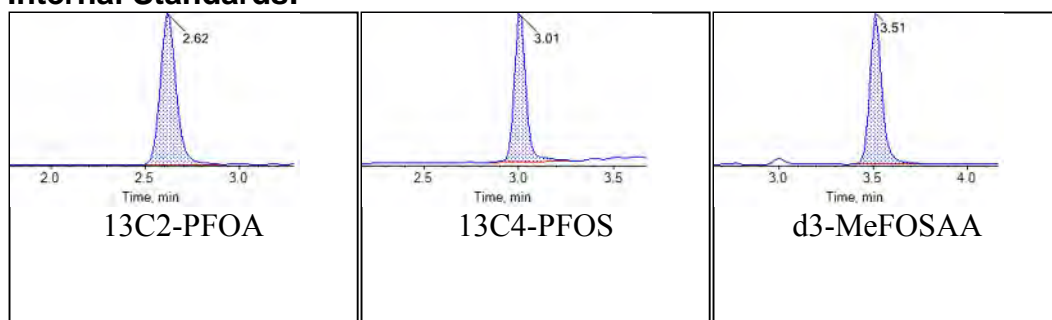
**Internal Standards:**

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

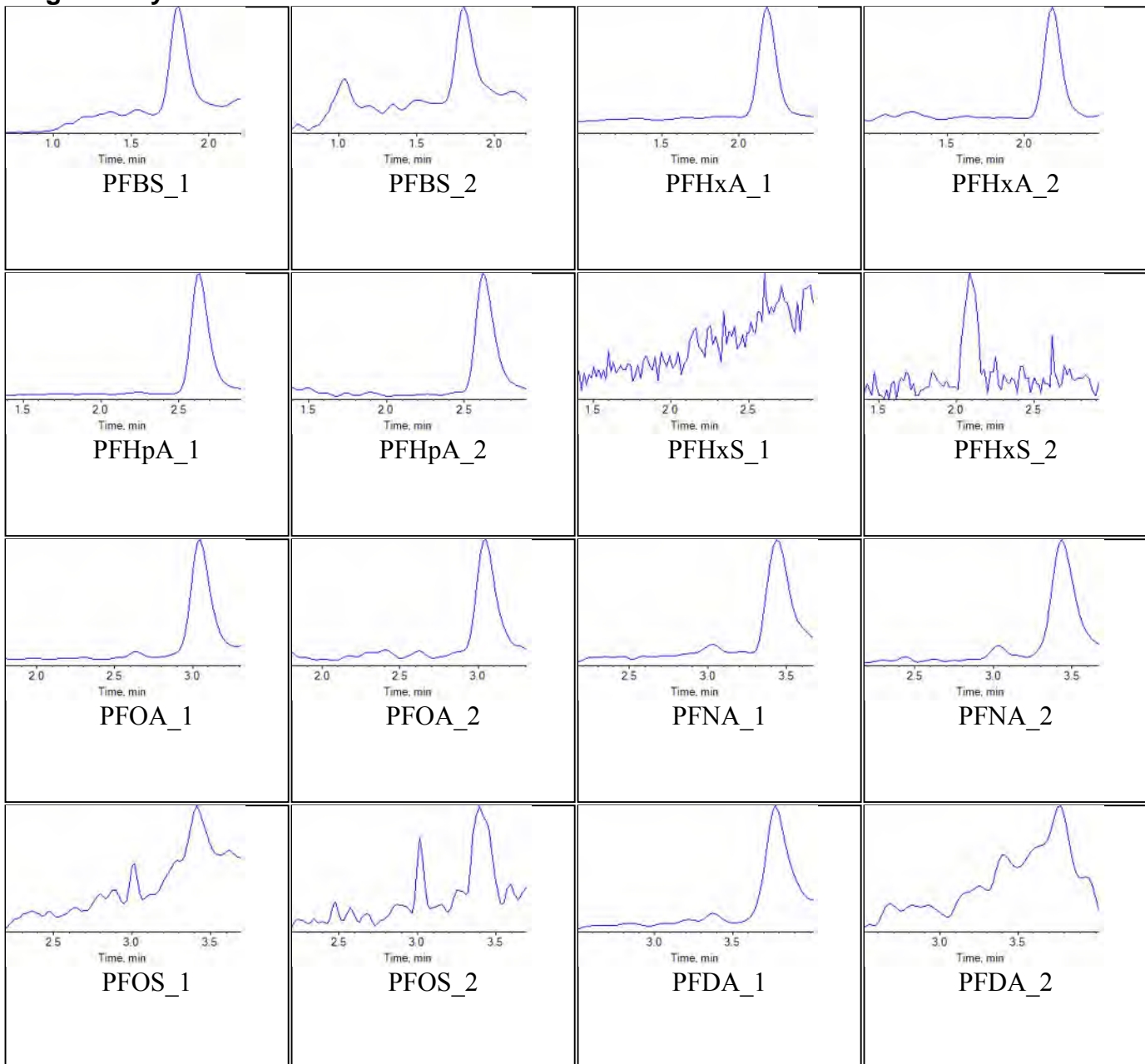


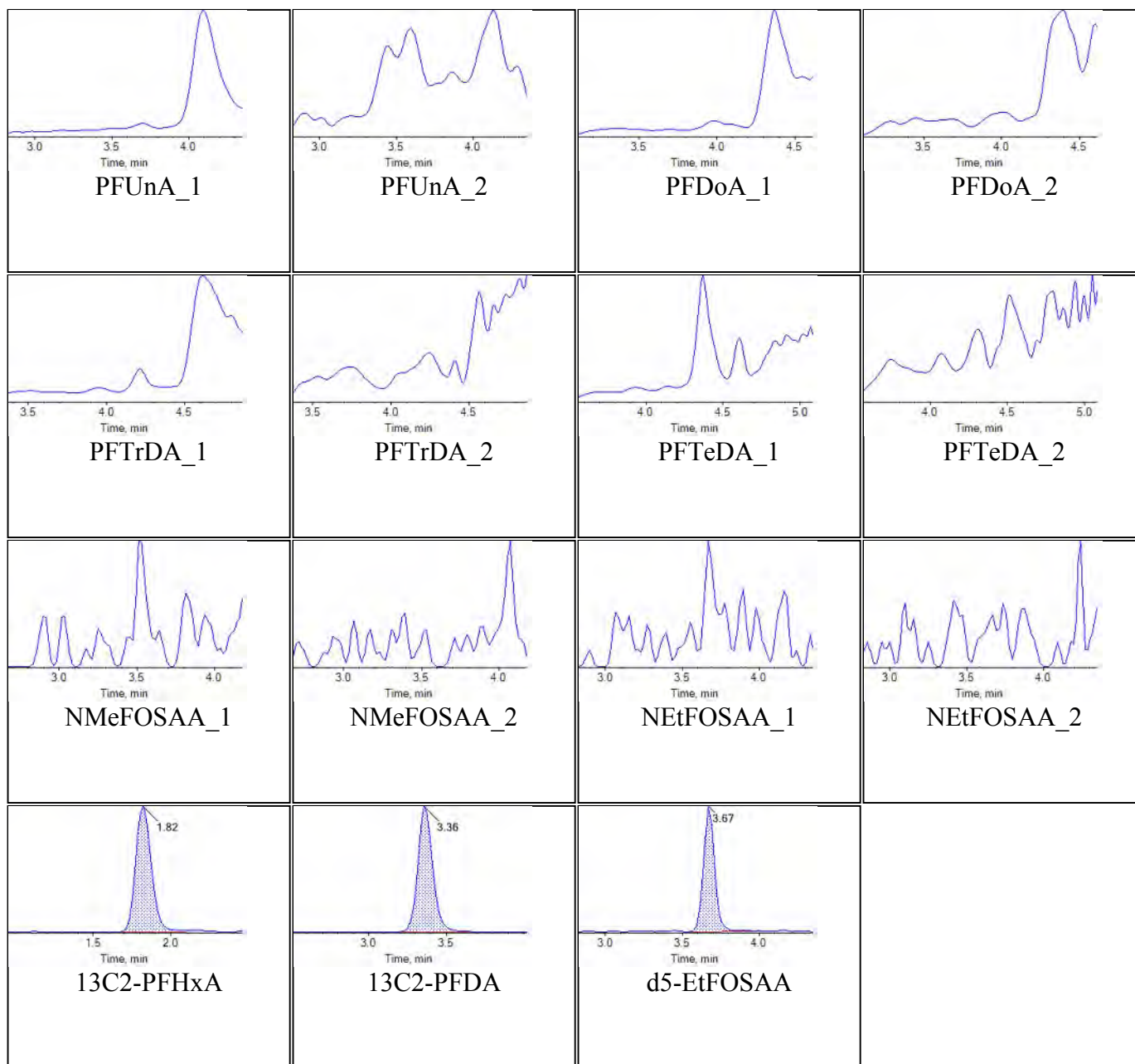
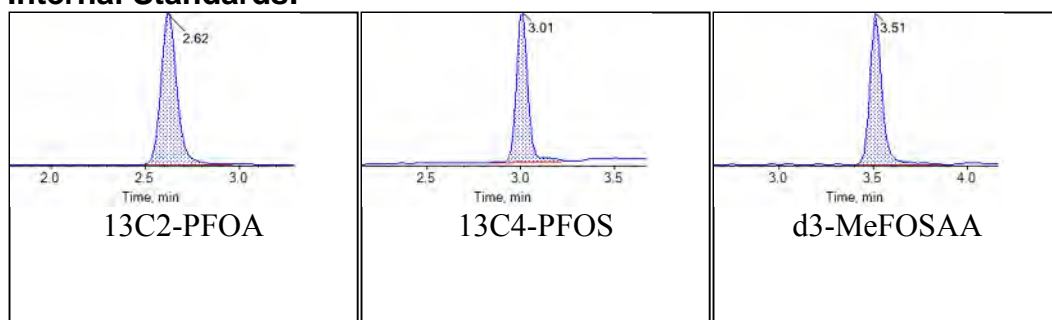
**Internal Standards:**

Sample Name	J7566-FS(0)	Injection Vial	19
Sample ID	JAX-RES-08212018-0945-11	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:10:59	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

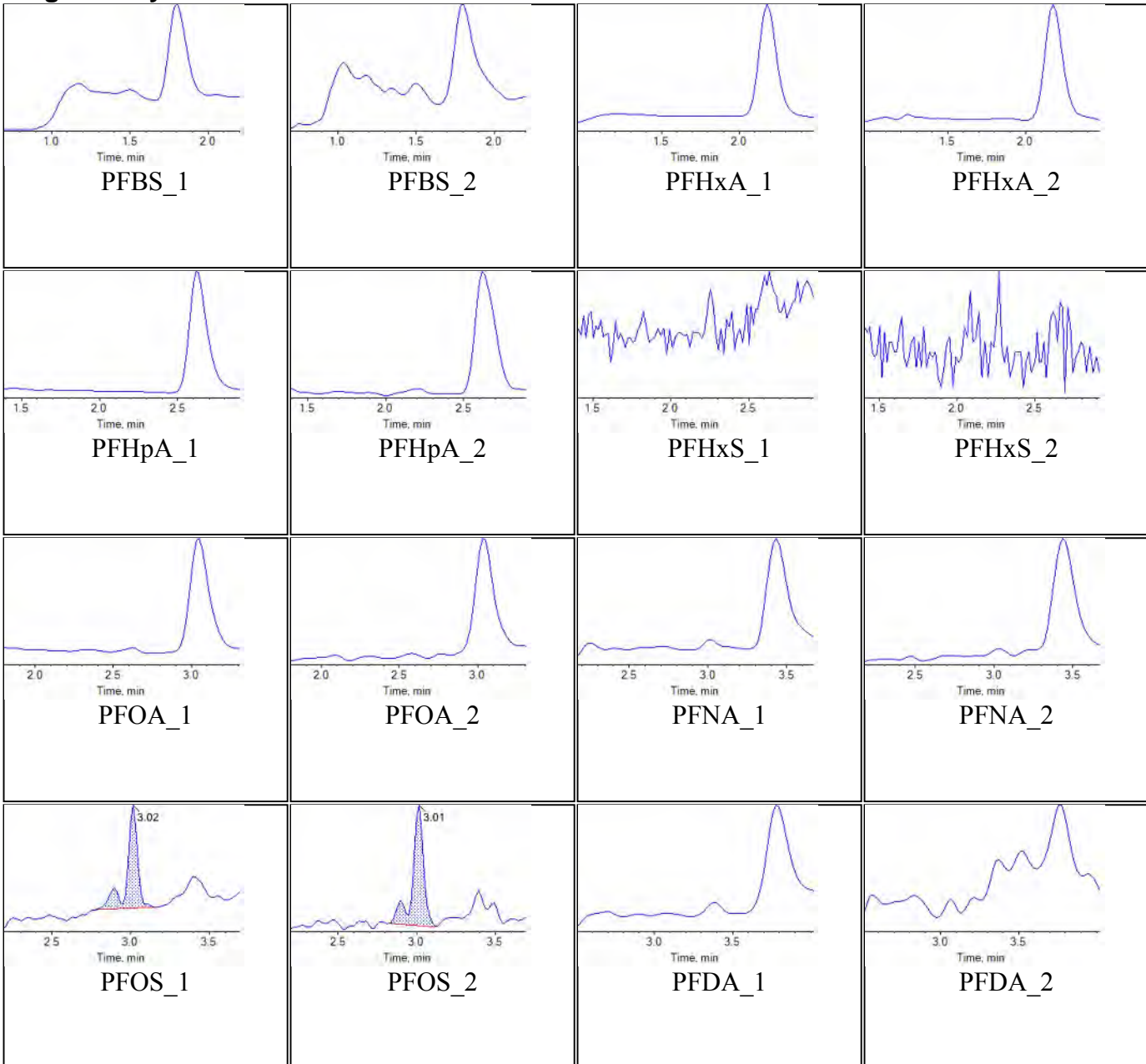


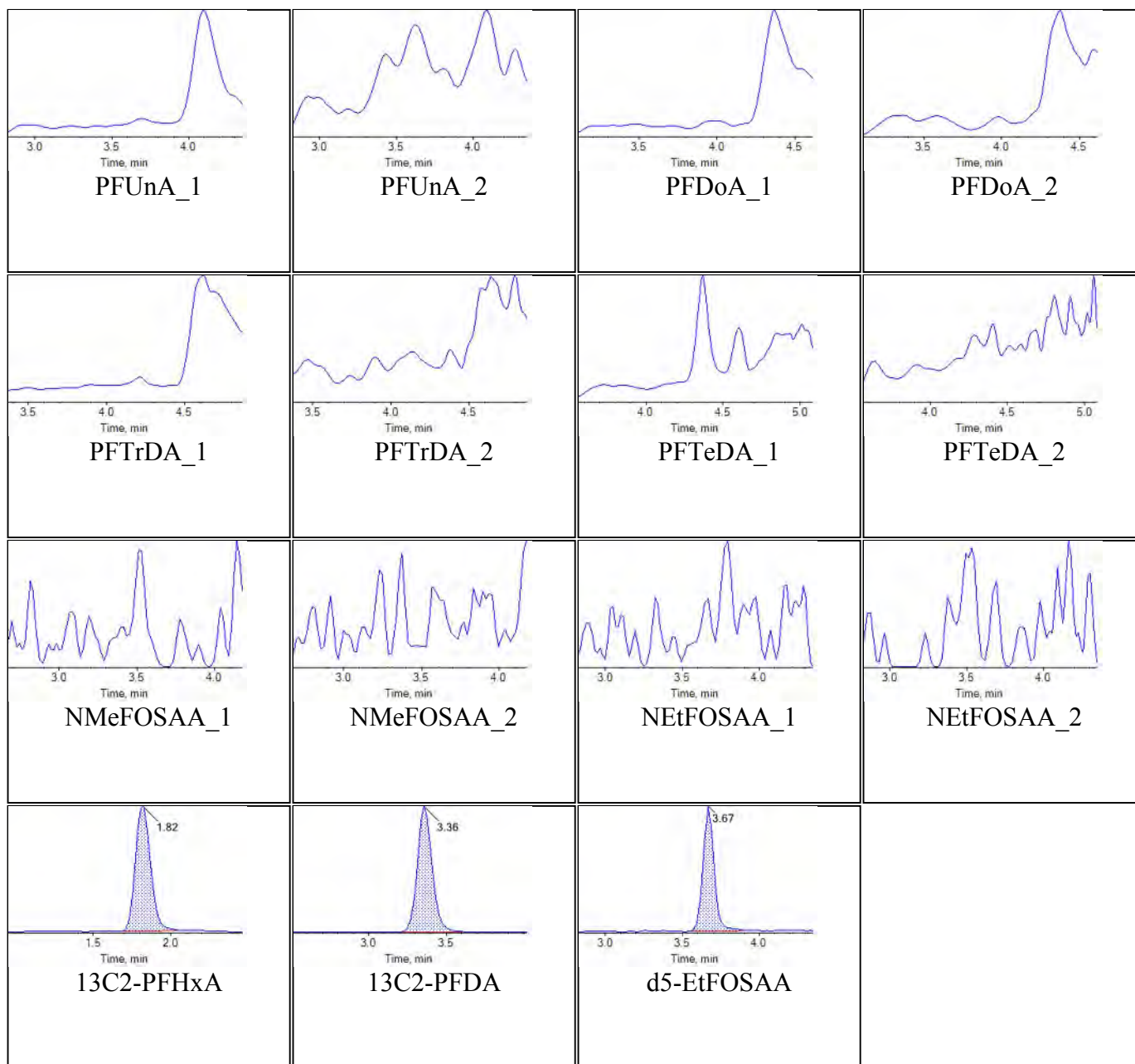
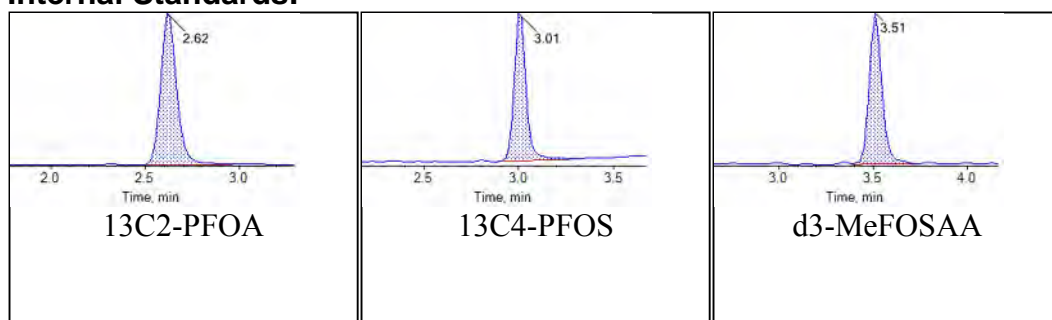
**Internal Standards:**

Sample Name	J7568-FS(0)	Injection Vial	20
Sample ID	JAX-RES-08212018-1130-10	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:19:57	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:

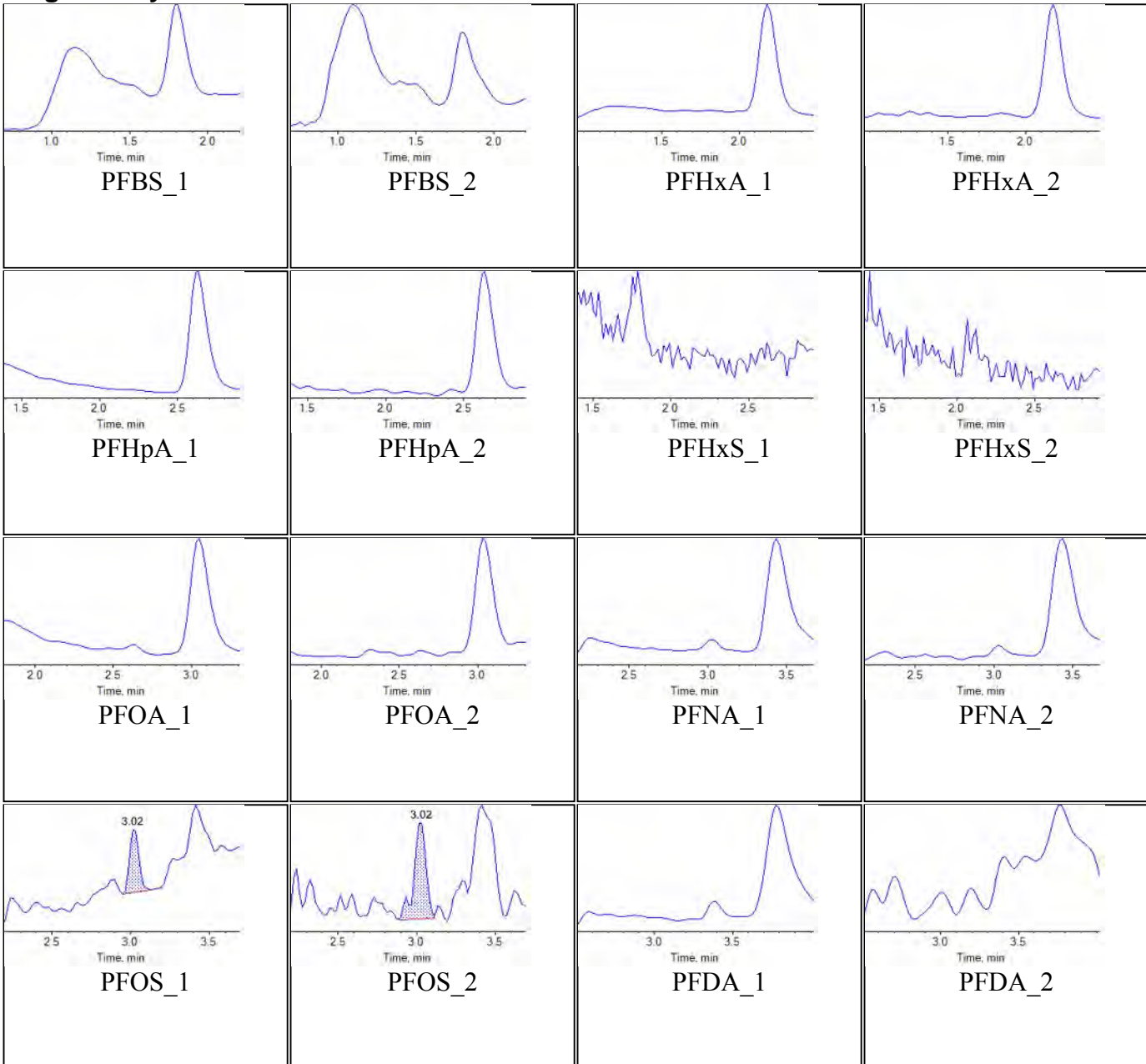


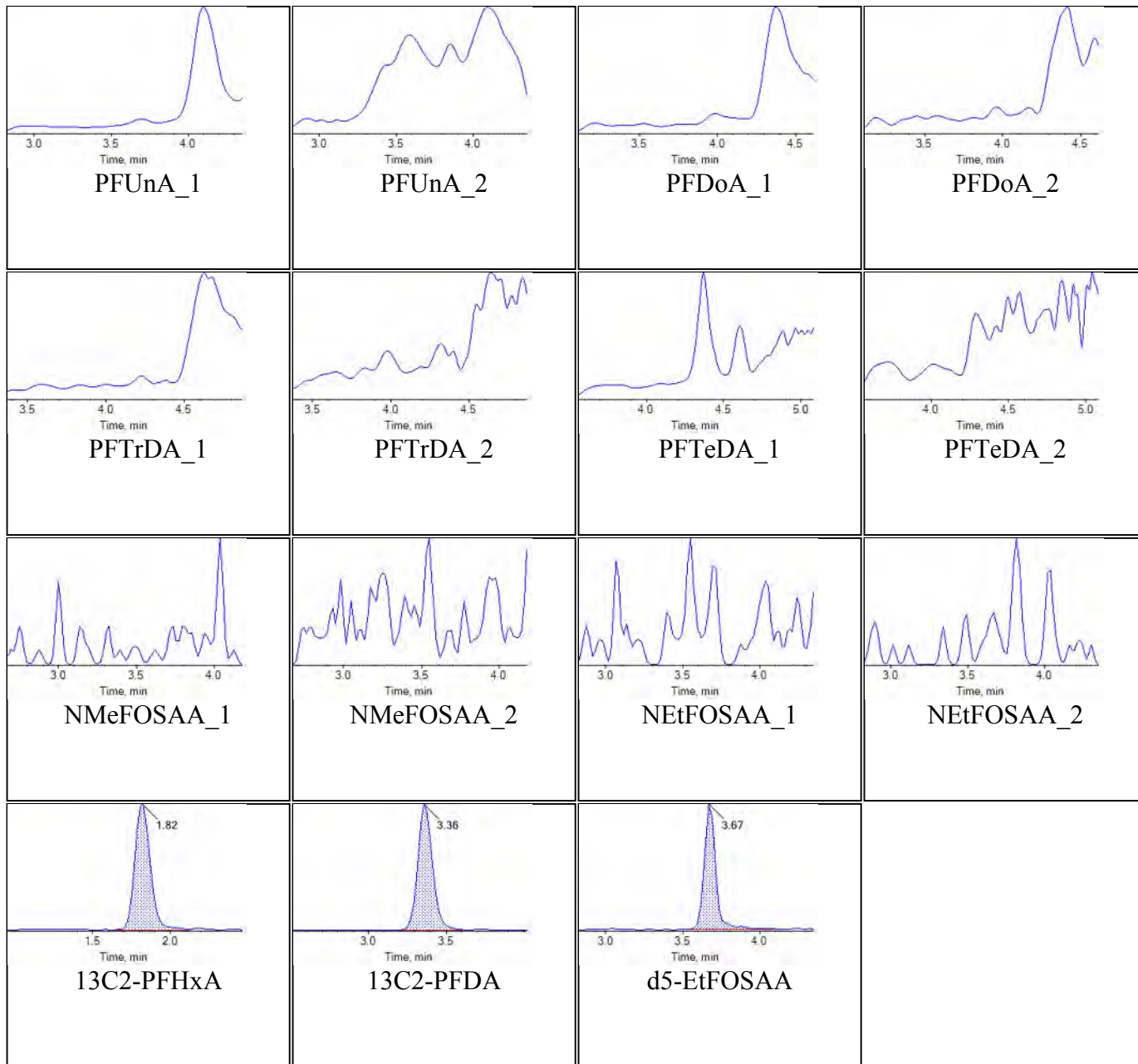
**Internal Standards:**

Sample Name	J7570-FS(0)	Injection Vial	21
Sample ID	JAX-RES-08212018-1330-36	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:28:54	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

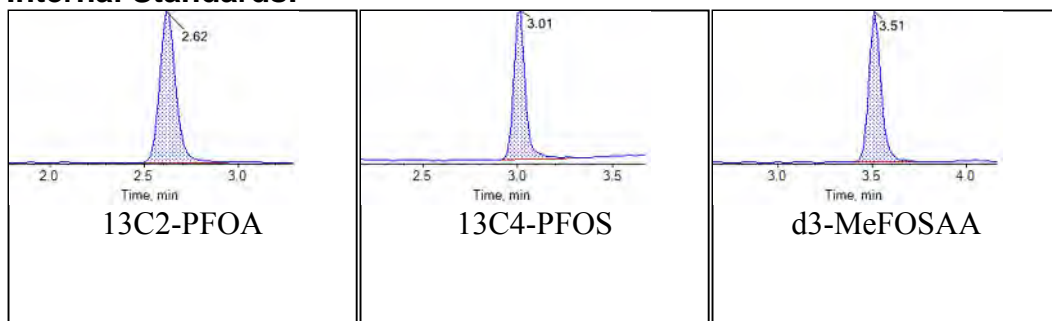
Chromatograms

Target Analytes:





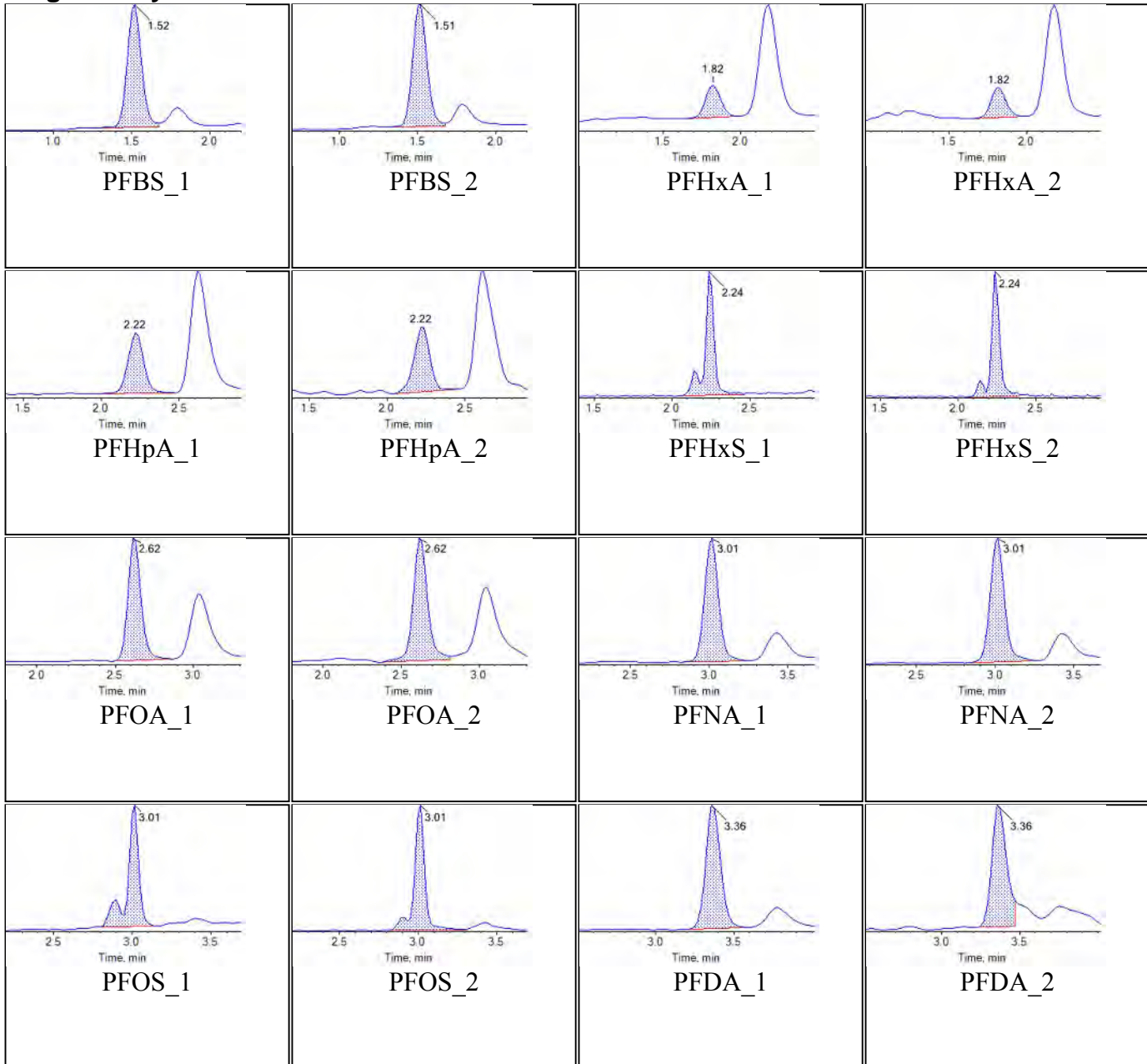
Internal Standards:

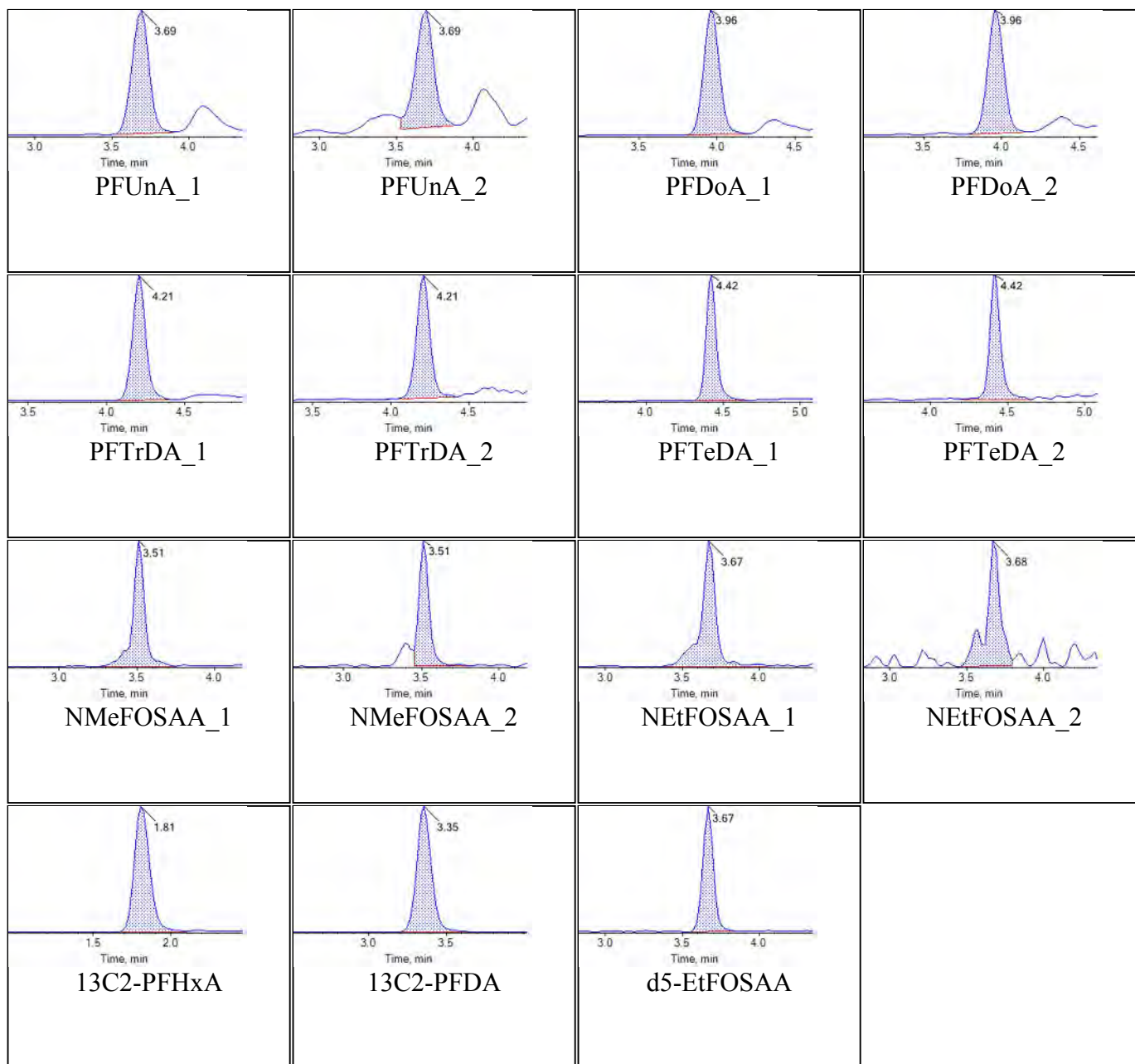
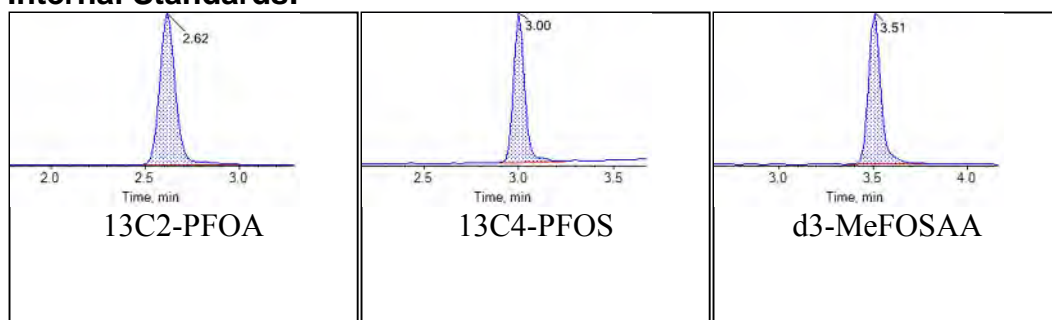


Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Chromatograms

Target Analytes:



**Internal Standards:**

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","307-24-4","PFHxA",".500000","ng/L","U",".22","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500",".50",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","375-85-9","PFHpA","1.000000","ng/L","U",".34","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","335-67-1","PFOA","1.000000","ng/L","U",".38","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","375-95-1","PFNA","1.000000","ng/L","U",".37","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","335-76-2","PFDA","1.000000","ng/L","U",".39","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","2058-94-8","PFUnA","1.000000","ng/L","U",".38","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","307-55-1","PFDaA","1.000000","ng/L","U",".42","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","72629-94-8","PFTrDA","1.000000","ng/L","U",".42","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","376-06-7","PFTeDA","1.500000","ng/L","U",".73","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.50",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","2355-31-9","NMeFOSAA","1.000000","ng/L","U",".42","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","2991-50-6","NEtFOSAA","1.000000","ng/L","U",".44","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","375-73-5","PFBS",".500000","ng/L","U",".21","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500",".50",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","1763-23-1","PFOS","1.000000","ng/L","U",".30","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","355-46-4","PFHxS","1.000000","ng/L","U",".34","MDL","","T","","","2.50","LOQ","YES","-99.000000","",".250000",".000500","1.00",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","BDO-2106","13C2-PFHxA",".400000","ng/L","","-99.00","NA","","SIS","100.00","","-99.00","NA","YES",".400000","",".250000",".000500",".50",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","BDO-2110","13C2-PFDA",".370000","ng/L","","-99.00","NA","","SIS","94.00","","-99.00","NA","YES",".400000","",".250000",".000500",".50",""

"CR649PB-FS","SOP 5-369","Initial","CR649PB-FS","BNO","BDO-1839","d5-EtFOSAA","1.370000","ng/L","","-99.00","NA","","SIS","86.00","","-99.00","NA","YES","1.600000","",".250000",".000500",".50",""

"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","307-24-4","PFHxA","20.110000","ng/L","",".22","MDL","","T","101.00","","2.50","LOQ","YES","20.000000","",".250000",".

000500",".50",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","375-85-9","PFHpA","20.480000","ng/L","",".34","MDL","","T","102.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","335-67-1","PFOA","19.960000","ng/L","",".38","MDL","","T","100.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","375-95-1","PFNA","20.110000","ng/L","",".37","MDL","","T","101.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","335-76-2","PFDA","19.460000","ng/L","",".39","MDL","","T","97.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","2058-94-8","PFUnA","18.770000","ng/L","",".38","MDL","","T","94.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","307-55-1","PFDaA","19.190000","ng/L","",".42","MDL","","T","96.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","72629-94-8","PFTTrDA","18.900000","ng/L","",".42","MDL","","T","95.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","376-06-7","PFTeDA","18.930000","ng/L","",".73","MDL","","T","95.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.50",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","2355-31-9","NMeFOSAA","24.600000","ng/L","",".42","MDL","","T","123.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","2991-50-6","NEtFOSAA","24.920000","ng/L","",".44","MDL","","T","125.00","","2.50","LOQ","YES","20.000000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","375-73-5","PFBS","17.710000","ng/L","",".21","MDL","","T","100.00","","2.50","LOQ","YES","17.700000","",".250000",".000500",".50",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","1763-23-1","PFOS","17.460000","ng/L","",".30","MDL","","T","91.00","","2.50","LOQ","YES","19.100000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","355-46-4","PFHxA","19.700000","ng/L","",".34","MDL","","T","104.00","","2.50","LOQ","YES","18.900000","",".250000",".000500","1.00",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","BDO-2106","13C2-PFHxA",".410000","ng/L","",".99.00","NA","","SIS","103.00","",".99.00","NA","YES",".400000","",".250000",".000500",".50",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","BDO-2110","13C2-PFDA",".350000","ng/L","",".99.00","NA","","SIS","87.00","",".99.00","NA","YES",".400000","",".250000",".000500",".50",""
"CR650LCS-FS","SOP 5-369","Initial","CR650LCS-FS","BNO","BDO-1839","d5-EtFOSAA","1.450000","ng/L","",".99.00","NA","","SIS","91.00","",".99.00","NA","YES","1.600000","",".250000",".000500",".50",""
"JAX-RES-08212018-0945-11","SOP 5-369","Initial","J7566-FS","BNO","307-24-4","PFHxA",".490000","ng/L","U",".22","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500",".49",""
"JAX-RES-08212018-0945-11","SOP 5-369","Initial","J7566-FS","BNO","375-85-9","PFHpA",".980000","ng/L","U",".33","MDL","","T","","","2.45","LOQ","YES","-99.000000","",".255000",".000500"

0", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "335-67-1", "PFOA", ".980000", "ng/L", "U", ".37", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "375-95-1", "PFNA", ".980000", "ng/L", "U", ".36", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "335-76-2", "PFDA", ".980000", "ng/L", "U", ".38", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "2058-94-8", "PFUnA", ".980000", "ng/L", "U", ".37", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "307-55-1", "PFDaA", ".980000", "ng/L", "U", ".41", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "72629-94-8", "PFTTrDA", ".980000", "ng/L", "U", ".41", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-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-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "2355-31-9", "NMeFOSAA", ".980000", "ng/L", "U", ".41", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "2991-50-6", "NEtFOSAA", ".980000", "ng/L", "U", ".43", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "375-73-5", "PFBS", ".490000", "ng/L", "U", ".21", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".49", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "1763-23-1", "PFOS", ".980000", "ng/L", "U", ".29", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "355-46-4", "PFHxS", ".980000", "ng/L", "U", ".33", "MDL", "", "T", "", "", "2.45", "LOQ", "YES", "-99.000000", "", ".255000", ".000500", ".98", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "BDO-2106", "13C2-PFHxA", ".420000", "ng/L", "", "-99.00", "NA", "", "SIS", "106.00", "", "-99.00", "NA", "YES", ".390000", "", ".255000", ".000500", ".50", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "BDO-2110", "13C2-PFDA", ".420000", "ng/L", "", "-99.00", "NA", "", "SIS", "107.00", "", "-99.00", "NA", "YES", ".390000", "", ".255000", ".000500", ".50", ""
"JAX-RES-08212018-0945-11", "SOP 5-369", "Initial", "J7566-FS", "BNO", "BDO-1839", "d5-EtFOSAA", "1.590000", "ng/L", "", "-99.00", "NA", "", "SIS", "101.00", "", "-99.00", "NA", "YES", "1.570000", "", ".255000", ".000500", ".50", ""
"JAX-RES-08212018-1130-10", "SOP 5-369", "Initial", "J7568-FS", "BNO", "307-24-4", "PFHxA", ".450000", "ng/L", "U", ".20", "MDL", "", "T", "", "", "2.23", "LOQ", "YES", "-99.000000", "", ".280000", ".000500", ".45", ""
"JAX-RES-08212018-1130-10", "SOP 5-369", "Initial", "J7568-FS", "BNO", "375-85-9", "PFHpA", ".890000", "ng/L", "U", ".30", "MDL", "", "T", "", "", "2.23", "LOQ", "YES", "-99.000000", "", ".280000", ".000500", ".89", ""
"JAX-RES-08212018-1130-10", "SOP 5-369", "Initial", "J7568-FS", "BNO", "335-67-1", "PFOA", ".890000", "ng/L", "U", ".34", "MDL", "", "T", "", "", "2.23", "LOQ", "YES", "-99.000000", "", ".280000", ".000500

",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","375-95-1","PFNA",".890000","ng/L","U",".33","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","335-76-2","PFDA",".890000","ng/L","U",".35","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","2058-94-8","PFUnA",".890000","ng/L","U",".34","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","307-55-1","PFDoA",".890000","ng/L","U",".38","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","72629-94-8","PFTTrDA",".890000","ng/L","U",".38","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","376-06-7","PFTeDA","1.340000","ng/L","U",".65","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500","1.34","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","2355-31-9","NMeFOSAA",".890000","ng/L","U",".38","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","2991-50-6","NEtFOSAA",".890000","ng/L","U",".39","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","375-73-5","PFBS",".450000","ng/L","U",".19","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".45","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","1763-23-1","PFOS",".890000","ng/L","U",".27","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","355-46-4","PFHxS",".890000","ng/L","U",".30","MDL","","T","","","2.23","LOQ","YES","-99.000000","",".280000",".000500",".89","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","BDO-2106","13C2-PFHxA",".440000","ng/L","","-99.00","NA","","SIS","123.00","","-99.00","NA","YES",".360000","",".280000",".000500",".50","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","BDO-2110","13C2-PFDA",".380000","ng/L","","-99.00","NA","","SIS","106.00","","-99.00","NA","YES",".360000","",".280000",".000500",".50","""
"JAX-RES-08212018-1130-10","SOP 5-369","Initial","J7568-FS","BNO","BDO-1839","d5-EtFOSAA","1.490000","ng/L","","-99.00","NA","","SIS","104.00","","-99.00","NA","YES","1.430000","",".280000",".000500",".50","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","307-24-4","PFHxA",".480000","ng/L","U",".21","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".48","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","375-85-9","PFHpA",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","335-67-1","PFOA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","375-95-1","PFNA",".960000","ng/L","U",".36","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500"

",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","335-76-2","PFDA",".960000","ng/L","U",".38","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","2058-94-8","PFUnA",".960000","ng/L","U",".37","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","307-55-1","PFDoA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","72629-94-8","PFTTrDA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-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-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","2355-31-9","NMeFOSAA",".960000","ng/L","U",".40","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","2991-50-6","NEtFOSAA",".960000","ng/L","U",".42","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","375-73-5","PFBS",".480000","ng/L","U",".20","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".48","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","1763-23-1","PFOS",".960000","ng/L","U",".29","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","355-46-4","PFHxS",".960000","ng/L","U",".33","MDL","","T","","","2.40","LOQ","YES","-99.000000","",".260000",".000500",".96","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","BDO-2106","13C2-PFHxA",".420000","ng/L","","-99.00","NA","","SIS","110.00","","-99.00","NA","YES",".380000","",".260000",".000500",".50","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","BDO-2110","13C2-PFDA",".330000","ng/L","","-99.00","NA","","SIS","87.00","","-99.00","NA","YES",".380000","",".260000",".000500",".50","""
"JAX-RES-08212018-1330-36","SOP 5-369","Initial","J7570-FS","BNO","BDO-1839","d5-EtFOSAA","1.430000","ng/L","","-99.00","NA","","SIS","93.00","","-99.00","NA","YES","1.540000","",".260000",".000500",".50","""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR649PB-FS","","WATER","CR649PB-FS","MB","","-99.000000","SOP 5-369","Gen Prep","Initial","08/23/2018 10:49","08/25/2018 15:53","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0523","18-0523","DP-18-0235","DP-18-0235","18-0523","08/23/2018 10:49","08/28/2018 08:26","""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR650LCS-FS","","WATER","CR650LCS-FS","LCS","","-99.000000","SOP 5-369","Gen Prep","Initial","08/23/2018 10:49","08/25/2018 16:02","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0523","18-0523","DP-18-0235","DP-18-0235","18-0523","08/23/2018 10:49","08/28/2018 08:26","""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08212018-0945-11","08/21/2018 09:45","W","J7566-FS","NM","SHP-180822-02","1.300000","SOP 5-369","Gen Prep","Initial","08/23/2018 10:49","08/25/2018 16:10","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0523","18-0523","DP-18-0235","DP-18-0235","18-0523","08/22/2018 11:00","08/28/2018 08:26","""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08212018-1130-10","08/21/2018 11:30","W","J7568-FS","NM","SHP-180822-02","1.300000","SOP 5-369","Gen Prep","Initial","08/23/2018 10:49","08/25/2018

16:19","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0523","18-0523","DP-18-0235","DP-18-0235","18-0523","08/22/2018 11:00","08/28/2018 08:26",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-RES-08212018-1330-36","08/21/2018 13:30","W","J7570-FS","NM","SHP-180822-02","1.300000","SOP 5-369","Gen Prep","Initial","08/23/2018 10:49","08/25/2018 16:28","BNO","COA","NA","T","1.000","NA","NA","","100.000000","18-0523","18-0523","DP-18-0235","DP-18-0235","18-0523","08/22/2018 11:00","08/28/2018 08:26",""

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 Field Reagent Blanks (FRBs) were not analyzed because the associated drinking water samples did not contain detections greater than the Limit of Quantitation (LOQ).

The buffering agent Trizma was added to all drinking water samples and FRBs.

Detected results reported below the Limit of Quantitation (LOQ) but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the MDL in the database.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: 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.



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



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 ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e. chromatography, interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

PROJ_NO: 08005-SE03 SDG: 18-0523 FRACTION: PFAS MEDIA: WATER	NSAMPLE	JAX-RES-08212018-0945-11			JAX-RES-08212018-1130-10			JAX-RES-08212018-1330-36		
	LAB_ID	J7566-FS			J7568-FS			J7570-FS		
	SAMP_DATE	8/21/2018			8/21/2018			8/21/2018		
	QC_TYPE	NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
N-ETHYLPERFLUOROOCCTANE SULFONAMIDOACETATE(NEFOSA)	0.43	U		0.39	U		0.42	U		
N-METHYLPERFLUOROOCCTANE SULFONAMIDOACETATE(NMFOSA)	0.41	U		0.38	U		0.4	U		
PENTADEC AFLUOROOCCTANOIC ACID (PFOA)	0.37	U		0.34	U		0.37	U		
PERFLUOROBUTANESULFONIC ACID (PFBS)	0.21	U		0.19	U		0.2	U		
PERFLUORODECANOIC ACID (PFDA)	0.38	U		0.35	U		0.38	U		
PERFLUORODODECANOIC ACID (PFDOA)	0.41	U		0.38	U		0.4	U		
PERFLUOROHEPTANOIC ACID (PFHPA)	0.33	U		0.3	U		0.33	U		
PERFLUOROHEXANESULFONIC ACID (PFHXS)	0.33	U		0.3	U		0.33	U		
PERFLUOROHEXANOIC ACID (PFHXA)	0.22	U		0.2	U		0.21	U		
PERFLUORONONANOIC ACID (PFNA)	0.36	U		0.33	U		0.36	U		
PERFLUOROOCCTANESULFONIC ACID (PFOS)	0.29	U		0.27	U		0.29	U		
PERFLUOROTETRADECANOIC ACID (PFTEA)	0.72	U		0.65	U		0.7	U		
PERFLUOROTRIDECANOIC ACID (PFTRIA)	0.41	U		0.38	U		0.4	U		
PERFLUOROUNDECANOIC ACID (PFUNA)	0.37	U		0.34	U		0.37	U		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY



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

Client ID JAX-RES-08212018-0945-11

Battelle ID J7566-FS
 Sample Type SA
 Collection Date 08/21/2018
 Extraction Date 08/23/2018
 Analysis Date 08/25/2018
 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

	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
PFDaA	0.98 U	0.41	0.98	2.45
PFTTrDA	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	106
13C2-PFDA	107
d5-EtFOSAA	101



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

Client ID JAX-RES-08212018-1130-10

Battelle ID J7568-FS
 Sample Type SA
 Collection Date 08/21/2018
 Extraction Date 08/23/2018
 Analysis Date 08/25/2018
 Analytical Instrument Sciex 5500 LC/MS/MS
 % Moisture NA
 Matrix W
 Sample Size 0.280
 Size Unit-Basis L
 Units ng/L MDL LOD LOQ

	ng/L	MDL	LOD	LOQ
PFHxA	0.45 U	0.20	0.45	2.23
PFHpA	0.89 U	0.30	0.89	2.23
PFOA	0.89 U	0.34	0.89	2.23
PFNA	0.89 U	0.33	0.89	2.23
PFDA	0.89 U	0.35	0.89	2.23
PFUnA	0.89 U	0.34	0.89	2.23
PFDaA	0.89 U	0.38	0.89	2.23
PFTTrDA	0.89 U	0.38	0.89	2.23
PFTeDA	1.34 U	0.65	1.34	2.23
NMeFOSAA	0.89 U	0.38	0.89	2.23
NEtFOSAA	0.89 U	0.39	0.89	2.23
PFBS	0.45 U	0.19	0.45	2.23
PFHxS	0.89 U	0.30	0.89	2.23
PFOS	0.89 U	0.27	0.89	2.23

Surrogate Recoveries (%)

13C2-PFHxA	123
13C2-PFDA	106
d5-EtFOSAA	104



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

Client ID JAX-RES-08212018-1330-36

Battelle ID J7570-FS
 Sample Type SA
 Collection Date 08/21/2018
 Extraction Date 08/23/2018
 Analysis Date 08/25/2018
 Analytical Instrument Sciex 5500 LC/MS/MS
 % Moisture NA
 Matrix W
 Sample Size 0.260
 Size Unit-Basis L
 Units ng/L MDL LOD LOQ

	ng/L	MDL	LOD	LOQ
PFHxA	0.48 U	0.21	0.48	2.40
PFHpA	0.96 U	0.33	0.96	2.40
PFOA	0.96 U	0.37	0.96	2.40
PFNA	0.96 U	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	0.48 U	0.20	0.48	2.40
PFHxS	0.96 U	0.33	0.96	2.40
PFOS	0.96 U	0.29	0.96	2.40

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	87
d5-EtFOSAA	93

APPENDIX C

SUPPORT DOCUMENTATION

NAS JACKSONVILLE
SDG 18-0523

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

Where:

PA	Area of target analyte/ area of internal standard
b	y Intercept from calibration curve
C _{IS}	Concentration of internal standard (ng/L)
m	Slope of calibration
DF	Dilution factor
S	Sample Size
PIV	Pre-injection volume (L)

Target Analyte	PFHxS
Sample ID	Laboratory Control Sample
Laboratory Sample ID	CR650LCS-FS(0)
Sample Size (L)	0.25
Dilution Factor	1
PIV (L)	0.001
PFHxS Area	1572501.22
IS Area	142750.61
IS Amount (ng/L)	287
Calibration Curve	y = 0.64046 x + 0.02580
Concentration (ng/L)	19.70

$$(((1572501.22/142750.61)-0.0258)/0.64046)*287*0.001*1/0.25$$

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	1404615.60	4426.547809	2181.2	false
PFBS_2	298.9 / 99.0	1.52	421961.23	4434.616001	883.0	false
PFHxA_1	313.0 / 269.0	1.82	1435524.78	5027.962349	152.8	false
PFHxA_2	313.0 / 119.0	1.82	113472.51	5142.744573	130.9	false
PFHpA_1	363.0 / 319.0	2.23	1350379.36	5119.528341	399.1	false
PFHpA_2	363.0 / 169.0	2.22	31780.92	5441.496313	310.5	false
PFHxS_1	399.0 / 80.0	2.25	1572501.22	4924.787120	645.7	false
PFHxS_2	399.0 / 99.0	2.25	447662.66	4716.444333	994.0	false
PFOA_1	413.0 / 369.0	2.63	1491212.93	4989.214193	549.6	false
PFOA_2	413.0 / 169.0	2.63	103802.72	5127.106204	537.2	false
PFNA_1	463.0 / 419.0	3.02	1354881.16	5028.061633	785.9	false
PFNA_2	463.0 / 219.0	3.02	428844.82	5105.019514	824.2	false
PFOS_1	499.0 / 80.0	3.02	2188658.99	4365.113489	788.4	false
PFOS_2	499.0 / 99.0	3.01	453458.98	4833.135091	1182.3	false
PFDA_1	513.0 / 469.0	3.37	1678219.60	4865.135214	715.2	false
PFDA_2	513.0 / 219.0	3.37	74573.84	5024.211736	538.2	false
PFUnA_1	563.0 / 519.0	3.69	1629915.55	4691.378863	833.4	false
PFUnA_2	563.0 / 269.0	3.69	76765.74	4635.062535	228.3	false
PFDoA_1	613.0 / 569.0	3.97	1762355.79	4798.377094	372.6	false
PFDoA_2	613.0 / 319.0	3.97	279504.94	4643.329085	349.4	false
PFTTrDA_1	663.0 / 619.0	4.21	1719286.23	4725.942761	633.9	false
PFTTrDA_2	663.0 / 169.0	4.21	108808.67	4685.071473	491.8	false
PFTeDA_1	713.0 / 669.0	4.43	1730064.99	4732.770598	1480.4	false
PFTeDA_2	713.0 / 169.0	4.43	85076.52	4892.225576	928.4	false
NMeFOSAA_1	570.0 / 419.0	3.52	308436.04	6149.656506	1206.4	false
NMeFOSAA_2	570.0 / 512.0	3.52	170894.07	5508.566370	608.6	false
NEtFOSAA_1	584.0 / 419.0	3.68	312029.76	6229.081964	1044.1	false
NEtFOSAA_2	584.0 / 483.0	3.68	19018.85	5291.055587	487.0	false
13C2-PFHxA	315.0 / 270.0	1.82	33136.85	102.633153	837.5	false
13C2-PFDA	515.0 / 470.0	3.36	33826.64	87.206554	591.1	false
d5-EtFOSAA	589.0 / 419.0	3.67	25523.55	362.932671	242.4	false

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			


Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHpA_1	363.0 / 319.0	2.23	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHpA_2	363.0 / 169.0	2.22	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFHxS_1	399.0 / 80.0	2.25	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFHxS_2	399.0 / 99.0	2.25	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFOA_1	413.0 / 369.0	2.63	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFOA_2	413.0 / 169.0	2.63	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFNA_1	463.0 / 419.0	3.02	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFNA_2	463.0 / 219.0	3.02	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFOS_1	499.0 / 80.0	3.02	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFOS_2	499.0 / 99.0	3.01	13C4-PFOS	503.0 / 80.0	142750.61	287.00
PFDA_1	513.0 / 469.0	3.37	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFDA_2	513.0 / 219.0	3.37	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFUnA_1	563.0 / 519.0	3.69	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFUnA_2	563.0 / 269.0	3.69	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTTrDA_1	663.0 / 619.0	4.21	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTTrDA_2	663.0 / 169.0	4.21	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFOA	415.0 / 370.0	32060.62	100.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFOA	415.0 / 370.0	32060.62	100.00
NMeFOSAA_1	570.0 / 419.0	3.52	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
NMeFOSAA_2	570.0 / 512.0	3.52	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
NEtFOSAA_1	584.0 / 419.0	3.68	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
NEtFOSAA_2	584.0 / 483.0	3.68	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	32060.62	100.00
13C2-PFDA	515.0 / 470.0	3.36	13C2-PFOA	415.0 / 370.0	32060.62	100.00
d5-EtFOSAA	589.0 / 419.0	3.67	d3-MeFOSAA	573.0 / 419.0	25486.25	400.00

NAS JACKSONVILLE
SDG 18-0523

LABORATORY CONTROL SAMPLE

	Result	Target	Calculation	Recovery	Reported Recovery
PFHxS	19.7 ng/L	18.9 ng/L	$19.7/18.9*100$	104	104

 It can be done		Chain-of-Custody					
<u>Client Contact Information</u> Tetra Tech		Project Manager: <u>Mark Peterson</u> Sampler Information (print name): <u>David Seifner</u> Phone: <u>904.334.7260</u> Email:		Sampling Site: <u>Residents</u>		Site Information: <u>Potable Wells</u>	
Project Name: <u>PFAS EVAL</u> Project No.: <u>112608005 - SEQ375</u>		Turnaround Time (TAT) Requested: Normal <input checked="" type="checkbox"/> Priority <input type="checkbox"/> RUSH <input type="checkbox"/>		Preservative: <u>TriZma</u>		COC # <u>045</u>	
Time Zone:		Analysis: <u>PFAS</u>		Page# <u>1 of 1</u>			
Sample Identification	2018 Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.		
J7564 JAX-RES-08212018-0945-11	8/21	0945	G	W	2	2	
J7567 JAX-RES-08212018-0945-11-FRB	8/21	0945	G	W	1	1	
J7568 JAX-RES-08212018-1130-10	8/21	1130	G	W	2	2	
J7569 JAX-RES-08212018-1130-10-FRB	8/21	1130	G	W	1	1	
J7570 JAX-RES-08212018-1330-36	8/21	1330	G	W	2	2	
J7571 JAX-RES-08212018-1330-36-FRB	8/21	1330	G	W	1	1	
Receipt Temperature: (°C)		Samples Intact: Yes - No		Samples on Ice: Yes - No		Receipt Comments:	
Relinquished by (Print/Sign): <u>David Seifner / dsl</u>		Company: <u>Tetra Tech</u>		Date/Time: <u>8-21-18 1430</u>		Received by (Print/Sign): <u>FCA Ex</u>	
Relinquished by (Print/Sign):		Company:		Date/Time:		Received by (Print/Sign): <u>ME</u>	
Relinquished by (Print/Sign):		Company:		Date/Time:		Received by (Print/Sign): <u>Battelle</u>	
Relinquished by (Print/Sign):		Company:		Date/Time:		Received by (Print/Sign): <u>8-22-18 1100</u>	
Comments: <u>All Potable water samples Cool 4°C</u>							

ShpNo SHP-180822-02

It can be done

Battelle Project No: _____

Sample Receipt Form

Approved: Authorized: Project Number: 112GO8005-SE075Client: Tetra TechReceived by: Schumitz, MattDate/Time Received: Wednesday, August 22, 2018 11:00 AMNo. of Shipping Containers: 1**SHIPMENT**Method of Delivery: Commercial CarrierTracking Number: 7824 0682 5520COC 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	7824 0682 5520	Custody Seal	Intact	Intact	Therm_1	1.3	6

Samples

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

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

Condition of Samples: Sample containers intact
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.3 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: J7566 - J7571

Samples logged in by: Schumitz, Matt Date/Time: 08/22/2018 11:00 AM

Approved By: _____ Approved On: _____

Authorized By: _____ Authorized On: _____



It can be done

ShpNo SHP-180822-02

Battelle Project No: _____

Sample Receipt Form Details

Approved: Authorized

Project Number: 112GO8005-SE075 Client: Tetra Tech

Received by: Schumitz, Matt Date/Time Received: Wednesday, August 22, 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:
J7566	JAX-RES-08212018-0945-11	08/21/18 9:45	08/22/18 13:28	2	W	1.3	NA	NA	NA	R0119 (NA)			
J7567	JAX-RES-08212018-0945-11-FRB	08/21/18 9:45	08/22/18 13:28	1	W	1.3	NA	NA	NA	R0119 (NA)			
J7568	JAX-RES-08212018-1130-10	08/21/18 11:30	08/22/18 13:28	2	W	1.3	NA	NA	NA	R0119 (NA)			
J7569	JAX-RES-08212018-1130-10-FRB	08/21/18 11:30	08/22/18 13:28	1	W	1.3	NA	NA	NA	R0119 (NA)			
J7570	JAX-RES-08212018-1330-36	08/21/18 13:30	08/22/18 13:28	2	W	1.3	NA	NA	NA	R0119 (NA)			
J7571	JAX-RES-08212018-1330-36-FRB	08/21/18 13:30	08/22/18 13:29	1	W	1.3	NA	NA	NA	R0119 (NA)			

Total Samples: 6

QA/QC Summary
Batch 18-0523

Project:	CTO-SE0375: Naval Air Station (NAS) Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	W
Data Set:	DP-18-0235
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
08/21/2018	08/22/2018	1.3

Corrective Actions	None.
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	The FRB samples associated with these field samples did not need to be extracted and analyzed. There are no other SDG associated with these samples.

METHOD SUMMARIES	
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	Sample JAX-RES-08212018-1130-10 (J7568-FS) had a sulfurous odor and JAX-RES-08212018-1330-36 (J7570-FS) was yellow in color.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500.

Holding Times	Extraction Date(s)	Analysis Date(s)
	8/23/2018	8/25/2018

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

QA/QC Summary
Batch 18-0523

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted. No comments.
Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted. No comments.
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICAL high and low points RPD \leq 20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted. No comments.
Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadratic curve fitting.
R 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.



Project Client: Tetra Tech
 Project Name: CTO-SE0375: Naval Air Station Jacksonville
 Project Number: 100119154-SE0375
 Preparation Batch: 18-0523
 Data Set: DP-18-0235
 Test Code: Master_371

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



It can be done

**BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM**

Project Title: CTO-SE0375: Naval Air Station Jackson **Data Set Number:** DP-18-0235
Project Number: 100119154-SE0375 **Prep Batch Number:** 18-0523
Entered By: Denise Schumitz **Entered On:** 08/27/2018
Test Code (Matrix Type): Master_371(L)

Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
DMS 8/27/2018

Task Leader Approval:

Supervisor Approval:

Digitally signed by Jonathan Thorn
Date: 2018.08.27 11:46:49 -04'00'

PM Approval:



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 highest concentration level in the calibration
H	Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
J	Analyte detected below the Limit of Quantitation (LOQ)
ME	Significant Matrix Interference - Estimated value.
MI	Significant Matrix Interference - value could not be determined.
n	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets secondary criteria
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Method detection limit (MDL) value, Limit of Detection (LOD) reported



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

Client ID	KA08 IB			
Battelle ID	KA08 IB_08/25/2018			
Sample Type	IB			
Collection Date	NA			
Extraction Date	NA			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	NA			
Sample Size	0.250			
Size Unit-Basis	NA			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDaA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	96
13C2-PFDA	102
d5-EtFOSAA	100



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

Client ID	Procedural Blank			
Battelle ID	CR649PB-FS			
Sample Type	PB			
Collection Date	08/23/2018			
Extraction Date	08/23/2018			
Analysis Date	08/25/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 U	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDaA	1.00 U	0.42	1.00	2.50
PFTTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	100
13C2-PFDA	94
d5-EtFOSAA	86



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

Client ID	Laboratory Control Sample					
Battelle ID	CR650LCS-FS					
Sample Type	LCS					
Collection Date	08/23/2018					
Extraction Date	08/23/2018					
Analysis Date	08/25/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L					
Units	ng/L	Target	Recovery	Qual	Control Limits	
					Lower	Upper
PFHxA	20.11	20.00	101		70	130
PFHpA	20.48	20.00	102		70	130
PFOA	19.96	20.00	100		70	130
PFNA	20.11	20.00	101		70	130
PFDA	19.46	20.00	97		70	130
PFUnA	18.77	20.00	94		70	130
PFDoA	19.19	20.00	96		70	130
PFTTrDA	18.90	20.00	95		70	130
PFTeDA	18.93	20.00	95		70	130
NMeFOSAA	24.60	20.00	123		70	130
NEtFOSAA	24.92	20.00	125		70	130
PFBS	17.71	17.70	100		70	130
PFHxS	19.70	18.90	104		70	130
PFOS	17.46	19.10	91		70	130

Surrogate Recoveries (%)

13C2-PFHxA	103
13C2-PFDA	87
d5-EtFOSAA	91



Example Calculation for PFAS

Calculation of final concentration from area:

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

Where:

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

Sample ID: CR650LCS-FS(0)
 Client Sample ID: Laboratory Control Sample
 Sample Size: 0.25
 Units: L
 Dilution Factor: 1.000
 PIV (L): 0.001
 Target Analyte: PFUnA
 MRM Transition: 563.0 / 519.0
 Data file: 18-0523_18-0524.wiff
 Result table: 18-0523_18-0524_DW
 Area: 1,629,915.55
 IS Name: 13C2-PFOA
 IS Area: 32,060.62
 IS Amount (ng/L): 100
 y-intercept: 0.3129
 slope: 1.07699

$$\text{Concentration} = \frac{[(1629915.55/32060.62) - 0.3129]}{1.07699} * 100 * 0.001 * 1 / 0.25$$

$$\text{ng/L} = 18.77$$



Project Client: Tetra Tech
 Project Name: CTO-SE0375: Naval Air Station Jacksonville
 Project No.: 100119154-SE0375
 Preparation Batch: 18-0523
 Data Set: DP-18-0235

	CR649PB-FS (Procedural Blank)	CR650LCS-FS (Laboratory Control Sample)	J7566-FS (JAX-RES-08212018-0945-11)	J7568-FS (JAX-RES-08212018-1130-10)	J7570-FS (JAX-RES-08212018-1330-36)
PFHxA	-	L	-	-	-
PFHpA	-	L	-	-	-
PFOA	-	L	-	-	-
PFNA	-	L	-	-	-
PFDA	-	L	-	-	-
PFUnA	-	L	-	-	-
PFDoA	-	L	-	-	-
PFTTrDA	-	L	-	-	-
PFTeDA	-	L	-	-	-
NMeFOSAA	-	L	-	-	-
NEtFOSAA	-	L	-	-	-
PFBS	-	L	-	-	-
PFHxS	-	L	-	-	-
PFOS	-	L	-	-	-

"L" :Linear

"Br": branched

"L/Br": Linear/Branched

"-": Not detected

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



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)
JZ80	L3	8/25/18 14:23	13C4-PFOS	169,780.16	-
JZ81	L4	8/25/18 14:32	13C4-PFOS	148,146.63	-
JZ82	L5	8/25/18 14:41	13C4-PFOS	157,723.01	-
JZ83	L6	8/25/18 14:50	13C4-PFOS	151,202.26	-
JZ84	L7	8/25/18 14:59	13C4-PFOS	164,251.66	-
JZ85	L8	8/25/18 15:08	13C4-PFOS	153,582.54	-
JZ86	L9	8/25/18 15:17	13C4-PFOS	147,602.88	14.0

PASS

Average 156,041.31 Lower 78,020.66 Upper 234,061.97

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	13C4-PFOS	169,780.16	78,020.66	234,061.97		110,406.11	220,812.21	
JZ81	L4	8/25/18 14:32	13C4-PFOS	148,146.63	78,020.66	234,061.97		110,406.11	220,812.21	
JZ82	L5	8/25/18 14:41	13C4-PFOS	157,723.01	78,020.66	234,061.97		110,406.11	220,812.21	
JZ83	L6	8/25/18 14:50	13C4-PFOS	151,202.26	78,020.66	234,061.97		110,406.11	220,812.21	
JZ84	L7	8/25/18 14:59	13C4-PFOS	164,251.66	78,020.66	234,061.97		110,406.11	220,812.21	
JZ85	L8	8/25/18 15:08	13C4-PFOS	153,582.54	78,020.66	234,061.97		110,406.11	220,812.21	
JZ86	L9	8/25/18 15:17	13C4-PFOS	147,602.88	78,020.66	234,061.97		110,406.11	220,812.21	
KZ08 IB	Instrument Blank	8/25/18 15:26	13C4-PFOS	161,003.39	78,020.66	234,061.97		110,406.11	220,812.21	
JZ77 ICC	ICC	8/25/18 15:35	13C4-PFOS	157,328.87	78,020.66	234,061.97		110,406.11	220,812.21	
CR649PB-FS(0)	Procedural Blank	8/25/18 15:53	13C4-PFOS	158,842.54	78,020.66	234,061.97		110,406.11	220,812.21	
CR650LCS-FS(0)	Laboratory Control Sample	8/25/18 16:02	13C4-PFOS	142,750.61	78,020.66	234,061.97		110,406.11	220,812.21	
J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/18 16:10	13C4-PFOS	156,120.75	78,020.66	234,061.97		110,406.11	220,812.21	
J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/18 16:19	13C4-PFOS	134,513.66	78,020.66	234,061.97		110,406.11	220,812.21	
J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/18 16:28	13C4-PFOS	131,635.78	78,020.66	234,061.97		110,406.11	220,812.21	
JZ81 CCV	CCV	8/25/18 16:37	13C4-PFOS	160,328.42	78,020.66	234,061.97		110,406.11	220,812.21	

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



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)
JZ80	L3	8/25/18 14:23	13C2-PFOA	35,541.15	-
JZ81	L4	8/25/18 14:32	13C2-PFOA	30,983.03	-
JZ82	L5	8/25/18 14:41	13C2-PFOA	34,802.67	-
JZ83	L6	8/25/18 14:50	13C2-PFOA	32,321.64	-
JZ84	L7	8/25/18 14:59	13C2-PFOA	33,771.70	-
JZ85	L8	8/25/18 15:08	13C2-PFOA	32,297.56	-
JZ86	L9	8/25/18 15:17	13C2-PFOA	34,064.70	4.2

PASS

Average 33,397.49 Lower 16,698.75 Upper 50,096.24

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	13C2-PFOA	35,541.15	16,698.75	50,096.24		24,361.87	48,723.74	
JZ81	L4	8/25/18 14:32	13C2-PFOA	30,983.03	16,698.75	50,096.24		24,361.87	48,723.74	
JZ82	L5	8/25/18 14:41	13C2-PFOA	34,802.67	16,698.75	50,096.24		24,361.87	48,723.74	
JZ83	L6	8/25/18 14:50	13C2-PFOA	32,321.64	16,698.75	50,096.24		24,361.87	48,723.74	
JZ84	L7	8/25/18 14:59	13C2-PFOA	33,771.70	16,698.75	50,096.24		24,361.87	48,723.74	
JZ85	L8	8/25/18 15:08	13C2-PFOA	32,297.56	16,698.75	50,096.24		24,361.87	48,723.74	
JZ86	L9	8/25/18 15:17	13C2-PFOA	34,064.70	16,698.75	50,096.24		24,361.87	48,723.74	
KZ08 IB	Instrument Blank	8/25/18 15:26	13C2-PFOA	32,500.03	16,698.75	50,096.24		24,361.87	48,723.74	
JZ77 ICC	ICC	8/25/18 15:35	13C2-PFOA	33,842.69	16,698.75	50,096.24		24,361.87	48,723.74	
CR649PB-FS(0)	Procedural Blank	8/25/18 15:53	13C2-PFOA	31,951.71	16,698.75	50,096.24		24,361.87	48,723.74	
CR650LCS-FS(0)	Laboratory Control Sample	8/25/18 16:02	13C2-PFOA	32,060.62	16,698.75	50,096.24		24,361.87	48,723.74	
J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/18 16:10	13C2-PFOA	31,166.54	16,698.75	50,096.24		24,361.87	48,723.74	
J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/18 16:19	13C2-PFOA	29,108.54	16,698.75	50,096.24		24,361.87	48,723.74	
J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/18 16:28	13C2-PFOA	31,385.39	16,698.75	50,096.24		24,361.87	48,723.74	
JZ81 CCV	CCV	8/25/18 16:37	13C2-PFOA	33,793.20	16,698.75	50,096.24		24,361.87	48,723.74	

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



Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)
JZ80	L3	8/25/18 14:23	d3-MeFOSAA	27,025.54	-
JZ81	L4	8/25/18 14:32	d3-MeFOSAA	28,504.56	-
JZ82	L5	8/25/18 14:41	d3-MeFOSAA	28,900.15	-
JZ83	L6	8/25/18 14:50	d3-MeFOSAA	27,273.57	-
JZ84	L7	8/25/18 14:59	d3-MeFOSAA	28,212.68	-
JZ85	L8	8/25/18 15:08	d3-MeFOSAA	29,670.74	-
JZ86	L9	8/25/18 15:17	d3-MeFOSAA	31,059.53	13.9

PASS

Average Lower Upper
 28,663.82 14,331.91 42,995.73

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JZ80	L3	8/25/18 14:23	d3-MeFOSAA	27,025.54	14,331.91	42,995.73		20,230.11	40,460.21	
JZ81	L4	8/25/18 14:32	d3-MeFOSAA	28,504.56	14,331.91	42,995.73		20,230.11	40,460.21	
JZ82	L5	8/25/18 14:41	d3-MeFOSAA	28,900.15	14,331.91	42,995.73		20,230.11	40,460.21	
JZ83	L6	8/25/18 14:50	d3-MeFOSAA	27,273.57	14,331.91	42,995.73		20,230.11	40,460.21	
JZ84	L7	8/25/18 14:59	d3-MeFOSAA	28,212.68	14,331.91	42,995.73		20,230.11	40,460.21	
JZ85	L8	8/25/18 15:08	d3-MeFOSAA	29,670.74	14,331.91	42,995.73		20,230.11	40,460.21	
JZ86	L9	8/25/18 15:17	d3-MeFOSAA	31,059.53	14,331.91	42,995.73		20,230.11	40,460.21	
KZ08 IB	Instrument Blank	8/25/18 15:26	d3-MeFOSAA	27,868.55	14,331.91	42,995.73		20,230.11	40,460.21	
JZ77 ICC	ICC	8/25/18 15:35	d3-MeFOSAA	26,480.50	14,331.91	42,995.73		20,230.11	40,460.21	
CR649PB-FS(0)	Procedural Blank	8/25/18 15:53	d3-MeFOSAA	27,761.75	14,331.91	42,995.73		20,230.11	40,460.21	
CR650LCS-FS(0)	Laboratory Control Sample	8/25/18 16:02	d3-MeFOSAA	25,486.25	14,331.91	42,995.73		20,230.11	40,460.21	
J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/18 16:10	d3-MeFOSAA	27,254.47	14,331.91	42,995.73		20,230.11	40,460.21	
J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/18 16:19	d3-MeFOSAA	24,571.28	14,331.91	42,995.73		20,230.11	40,460.21	
J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/18 16:28	d3-MeFOSAA	24,215.43	14,331.91	42,995.73		20,230.11	40,460.21	
JZ81 CCV	CCV	8/25/18 16:37	d3-MeFOSAA	28,332.68	14,331.91	42,995.73		20,230.11	40,460.21	

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 2:59:30 PM	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.52	1.19	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.82	1.24	0.8 – 1.5

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 2:59:30 PM	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.52	36	>10
PFBS_2	298.9 / 99.0	1.52	28	>10
PFHxA_1	313.0 / 269.0	1.82	23	>10
PFHxA_2	313.0 / 119.0	1.82	22	>10
PFHpA_1	363.0 / 319.0	2.23	27	>10
PFHpA_2	363.0 / 169.0	2.23	26	>10
PFHxS_1	399.0 / 80.0	2.25	34	>10
PFHxS_2	399.0 / 99.0	2.25	43	>10
PFOA_1	413.0 / 369.0	2.63	29	>10
PFOA_2	413.0 / 169.0	2.63	32	>10
PFNA_1	463.0 / 419.0	3.02	28	>10
PFNA_2	463.0 / 219.0	3.02	27	>10
PFOS_1	499.0 / 80.0	3.02	37	>10
PFOS_2	499.0 / 99.0	3.02	36	>10
PFDA_1	513.0 / 469.0	3.37	26	>10
PFDA_2	513.0 / 219.0	3.37	29	>10
PFUnA_1	563.0 / 519.0	3.70	23	>10
PFUnA_2	563.0 / 269.0	3.70	29	>10
PFDaA_1	613.0 / 569.0	3.97	26	>10
PFDaA_2	613.0 / 319.0	3.97	26	>10
PFTrDA_1	663.0 / 619.0	4.22	33	>10
PFTrDA_2	663.0 / 169.0	4.22	38	>10
PFTeDA_1	713.0 / 669.0	4.43	55	>10
PFTeDA_2	713.0 / 169.0	4.43	52	>10
NMeFOSAA_1	570.0 / 419.0	3.52	42	>10
NMeFOSAA_2	570.0 / 512.0	3.52	27	>10
NEtFOSAA_1	584.0 / 419.0	3.69	35	>10
NEtFOSAA_2	584.0 / 483.0	3.69	41	>10
13C2-PFHxA	315.0 / 270.0	1.81	50	>10
13C2-PFDA	515.0 / 470.0	3.36	37	>10
d5-EtFOSAA	589.0 / 419.0	3.67	25	>10



Precision and Bias at the LOQ for PFAS in Drinking Water

Analyte	CAS No.	Average (ng/L)	ST DEV	3 Sigma	n
PFHxA	307-24-4	10.41	1.25	3.75	19
PFHpA	375-85-9	10.59	1.42	4.26	19
PFOA	335-67-1	10.45	1.47	4.41	19
PFNA	375-95-1	10.49	1.28	3.84	19
PFDA	335-76-2	10.39	1.57	4.71	19
PFUnA	2058-94-8	10.05	1.71	5.13	19
PFDoA	307-55-1	9.99	1.63	4.89	19
PFTTrDA	72629-94-8	10.09	1.79	5.37	19
PFTeDA	376-06-7	11.27	2.41	7.23	19
NMeFOSAA	2355-31-9	10.60	1.12	3.36	19
NEtFOSAA	2991-50-6	10.17	1.29	3.87	19
PFBS	375-73-5	8.64	1.26	3.78	19
PFHxS	355-46-4	9.73	1.49	4.47	19
PFOS	1763-23-1	9.32	1.52	4.56	19

BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

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

Analyte	CAS No.	MDL (ng/L)	LOD (ng/L)	LOQ (ng/L)	MRL (ng/L)
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
PFTTrDA	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

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
PFTTrDA	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
¹³C₂-PFOA	NA	IS	415.0 / 270.0	NA
¹³C₄-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



Zef Scientific Inc.

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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:** _____

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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
<input checked="" type="checkbox"/> CAD 0	0.5	0.4 to 1.1 x10 ⁻⁵ Torr
<input checked="" type="checkbox"/> CAD Low	1.9	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.4	Read Only
<input checked="" type="checkbox"/> CAD High	3.4	Read Only
<input checked="" type="checkbox"/> CAD 12	3.4	2.4 to 4.5 x10 ⁻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

Zef Scientific Inc.

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

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

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

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

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

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

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

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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
<input checked="" type="checkbox"/> CAD 0	0.8	0.4 to 1.1 x10 ⁻⁵ Torr
<input checked="" type="checkbox"/> CAD Low	2.1	Read Only
<input checked="" type="checkbox"/> CAD Medium	2.6	Read Only
<input checked="" type="checkbox"/> CAD High	3.7	Read Only
<input checked="" type="checkbox"/> CAD 12	3.7	2.4 to 4.5 x10 ⁻⁵ Torr

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

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

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

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

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

Transmission Efficiency: 16.93% (≥ 10.0%)

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

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

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

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

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

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

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

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

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

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

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

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

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

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

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

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.



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS**

<u>Project Title(s)</u>	<u>Project No.(s)</u>
CTO-SE0375: Naval Air Station Jacksonville	100119154- SE0375
18-0523	
CTO-SE0375: Drinking Water Analysis	
W	
SOP Numbers (see workplan for modifications)	
VOASOP No.	5-371

This Batch Contains The Following Samples:
CR649PB-FS CR650LCS-FS J7566-FS J7568-FS J7570-FS

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	08/27/2018	DMS



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE**

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)

100119154-
SE0375

18-0523

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description
CR649PB-FS	Procedural Blank
CR650LCS-FS	Laboratory Control Sample
J7566-FS	JAX-RES-08212018-0945-11
J7568-FS	JAX-RES-08212018-1130-10
J7570-FS	JAX-RES-08212018-1330-36

Samples Assigned By:

Jonathan Thorn

Date : August 22, 2018

Comments:



It can be done

BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM

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

Project No.(s)
100119154-
SE0375

18-0523

CTO-SE0375: Drinking Water Analysis

W

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR649PB-FS	Procedural Blank	250.0	NA	--	08/23/18 SAS
CR650LCS-FS	Laboratory Control Sample	250.0	NA	--	08/23/18 SAS
J7566-FS	JAX-RES-08212018-0945-11	255.0	1	C	08/23/18 SAS
J7568-FS	JAX-RES-08212018-1130-10	280.0	1	C	08/23/18 SAS
J7570-FS	JAX-RES-08212018-1330-36	260.0	1	C	08/23/18 SAS

Comments:

Sample ID:	Comments:
CR649PB-FS	1.23g Trizma(180502-01) weighed on BAL-009
CR650LCS-FS	1.24g Trizma(180502-01) weighed on BAL-009

Samples Assigned By

Jonathan Thorn

Date : August 22, 2018

* - "C" = Sample is Consumed



It can be done

BATTELLE - NORWELL OPERATIONS SURROGATE SPIKE FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR649PB-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
CR650LCS-FS	JZ28	LCS/MS	1	100	08/23/18 SAS	LMG	NA
CR650LCS-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
J7566-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
J7568-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA
J7570-FS	JZ90	SIS	1	50	08/23/18 SAS	LMG	NA

Syringes/Pipettes Used:

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



It can be done

BATTELLE - NORWELL OPERATIONS INTERNAL STANDARD SPIKING FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****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
CR649PB-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
CR650LCS-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
J7566-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
J7568-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG
J7570-FS(0)	950	50	JZ87	50	1	1000	1.000	08/24/18 SAS	LMG

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JZ87	Pipette	B814659662

Extract Id:	Comments:
CR649PB-FS	Samples reconstituted in 96/4 Methanol/Milli-q water

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

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



It can be done

BATTELLE - NORWELL OPERATIONS PREPARATION EXTRACT SPLIT FORM

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR649PB-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
CR650LCS-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
J7566-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
J7568-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS
J7570-FS	0	--	8/23/2018 10:49:00 AM	NA		NA	NA	1.000	1.000	08/23/18 SAS

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

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

* - "C" = Extract is Consumed



It can be done

BATTELLE - NORWELL OPERATIONS EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Purpose: LC-MS/MS TRANSFER		Last Activity: Prep->Inst			
Relinquished On/By: Aug 25 2018 8:10AM DMS		Received On/By: Aug 25 2018 12:10PM 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	CR649PB-FS(0)	1000	1	Intact	NA
2	CR650LCS-FS(0)	1000	1	Intact	NA
3	J7566-FS(0)	1000	1	Intact	NA
4	J7568-FS(0)	1000	1	Intact	NA
5	J7570-FS(0)	1000	1	Intact	NA
Total Extracts:		5			



It can be done

BATTELLE - NORWELL OPERATIONS SAMPLE SPECIFIC COMMENTS

Project Title(s)

CTO-SE0375: Naval Air Station Jacksonville

Project No.(s)100119154-
SE0375**18-0523****CTO-SE0375: Drinking Water Analysis****W**

Sample ID:	Comment:	Date/Initials:
CR649PB-FS	Extraction for all samples began at 10:49am	08/23/18 SAS
CR649PB-FS	Sample extraction ended at 11:16am	08/23/18 SAS
CR650LCS-FS	Sample extraction ended at 11:15am	08/23/18 SAS
J7566-FS	Sample extraction ended at 11:21am	08/23/18 SAS
J7568-FS	Sample had a sulfurous odor	08/23/18 SAS
J7568-FS	Sample extraction ended at 11:18am	08/23/18 SAS
J7570-FS	Sample was yellow in color.	08/23/18 SAS
J7570-FS	Sample extraction ended at 11:20am	08/23/18 SAS

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
4	MeOH		8/25/2018 1:56:55 PM	5-0371.dam	18-0523_18-0524.wiff
7	JZ80	L3	8/25/2018 2:23:46 PM	5-0371.dam	18-0523_18-0524.wiff
8	JZ81	L4	8/25/2018 2:32:41 PM	5-0371.dam	18-0523_18-0524.wiff
9	JZ82	L5	8/25/2018 2:41:37 PM	5-0371.dam	18-0523_18-0524.wiff
10	JZ83	L6	8/25/2018 2:50:33 PM	5-0371.dam	18-0523_18-0524.wiff
11	JZ84	L7	8/25/2018 2:59:30 PM	5-0371.dam	18-0523_18-0524.wiff
12	JZ85	L8	8/25/2018 3:08:27 PM	5-0371.dam	18-0523_18-0524.wiff
13	JZ86	L9	8/25/2018 3:17:23 PM	5-0371.dam	18-0523_18-0524.wiff
14	KZ08 IB	Instrument Blank	8/25/2018 3:26:21 PM	5-0371.dam	18-0523_18-0524.wiff
15	JZ77 ICC	ICC	8/25/2018 3:35:16 PM	5-0371.dam	18-0523_18-0524.wiff
16	MeOH		8/25/2018 3:44:13 PM	5-0371.dam	18-0523_18-0524.wiff
17	CR649PB-FS(0)	Procedural Blank	8/25/2018 3:53:09 PM	5-0371.dam	18-0523_18-0524.wiff
18	CR650LCS-FS(0)	Laboratory Control Sample	8/25/2018 4:02:04 PM	5-0371.dam	18-0523_18-0524.wiff
19	J7566-FS(0)	JAX-RES-08212018-0945-11	8/25/2018 4:10:59 PM	5-0371.dam	18-0523_18-0524.wiff
20	J7568-FS(0)	JAX-RES-08212018-1130-10	8/25/2018 4:19:57 PM	5-0371.dam	18-0523_18-0524.wiff
21	J7570-FS(0)	JAX-RES-08212018-1330-36	8/25/2018 4:28:54 PM	5-0371.dam	18-0523_18-0524.wiff
22	JZ81 CCV	CCV	8/25/2018 4:37:51 PM	5-0371.dam	18-0523_18-0524.wiff
16	MeOH		8/25/2018 4:46:47 PM	5-0371.dam	18-0523_18-0524.wiff
23	CR651PB-FS(0)	Procedural Blank	8/25/2018 4:55:43 PM	5-0371.dam	18-0523_18-0524.wiff
24	CR652LCS-FS(0)	Laboratory Control Sample	8/25/2018 5:04:39 PM	5-0371.dam	18-0523_18-0524.wiff
25	J7561-FS(0)	JAX-RES-08202018-1100-26-FRB	8/25/2018 5:13:36 PM	5-0371.dam	18-0523_18-0524.wiff
26	J7563-FS(0)	JAX-RES-08202018-1310-28-FRB	8/25/2018 5:22:32 PM	5-0371.dam	18-0523_18-0524.wiff
27	JZ82-CCV	CCV	8/25/2018 5:31:27 PM	5-0371.dam	18-0523_18-0524.wiff

1 ↓

1 Sample reported with another batch. DMS 8/27/2018



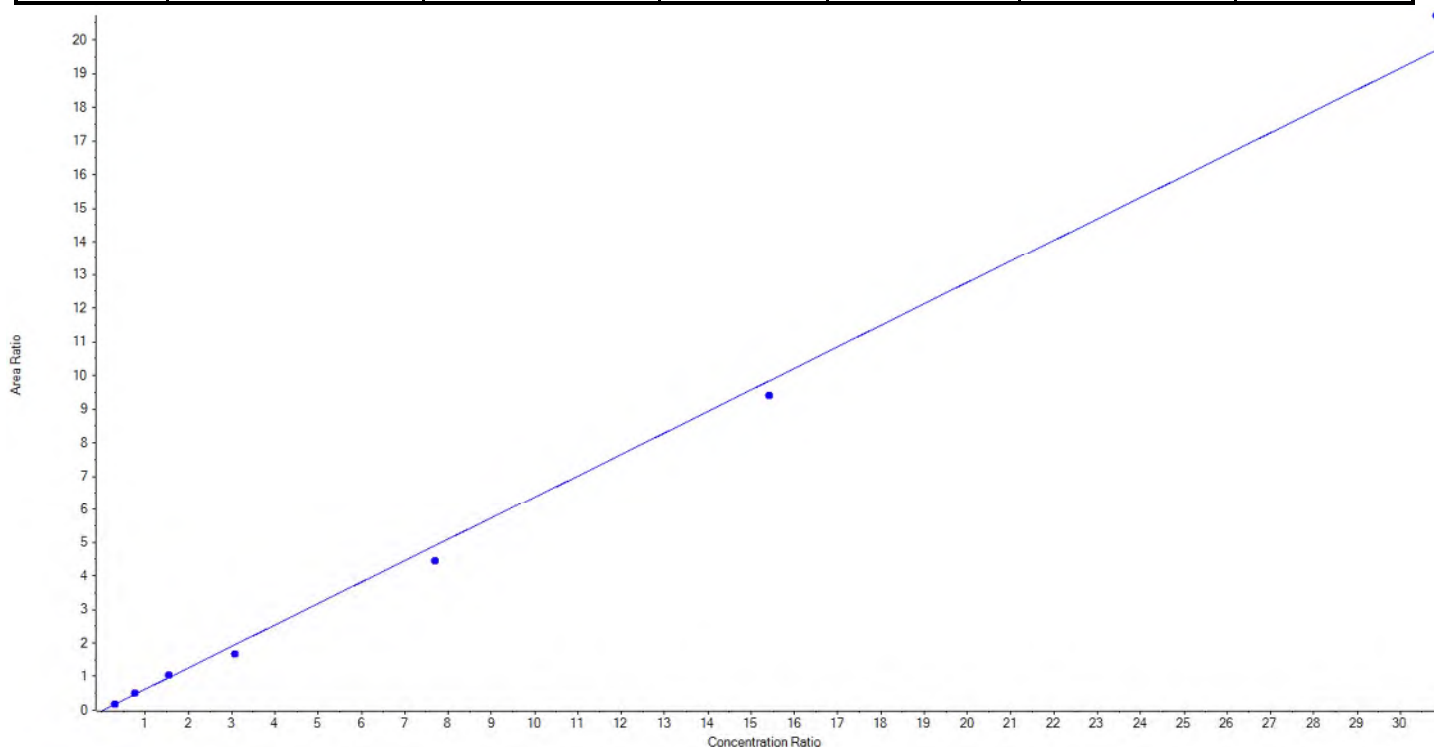
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFBS_1	Data File	18-0523_18-0524.wiff
MRM Transition	298.9 / 80.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.63929x + -0.02044$ ($r = 0.99745$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	88.60	92.623416	104.5
8	JZ81	L4	True	221.50	242.779569	109.6
9	JZ82	L5	True	443.00	481.387037	108.7
10	JZ83	L6	True	885.00	757.513782	85.6
11	JZ84	L7	True	2212.50	2006.637947	90.7
12	JZ85	L8	True	4425.00	4234.668378	95.7
13	JZ86	L9	True	8850.00	9309.989871	105.2





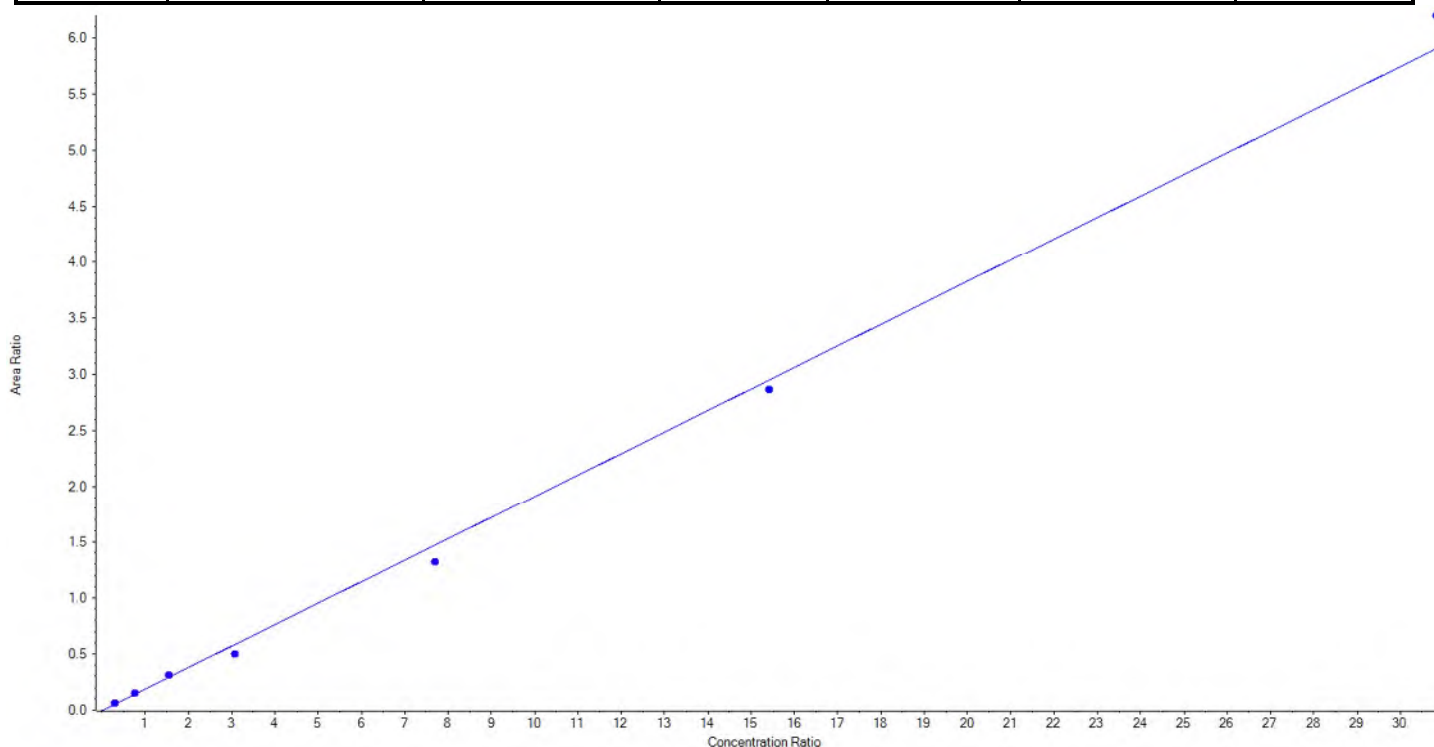
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFBS_2	Data File	18-0523_18-0524.wiff
MRM Transition	298.9 / 99.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.19159x + -0.00443$ ($r = 0.99751$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	88.60	99.813968	112.7
8	JZ81	L4	True	221.50	229.053645	103.4
9	JZ82	L5	True	443.00	475.566098	107.4
10	JZ83	L6	True	885.00	750.913541	84.9
11	JZ84	L7	True	2212.50	1982.617976	89.6
12	JZ85	L8	True	4425.00	4300.235188	97.2
13	JZ86	L9	True	8850.00	9287.399584	104.9





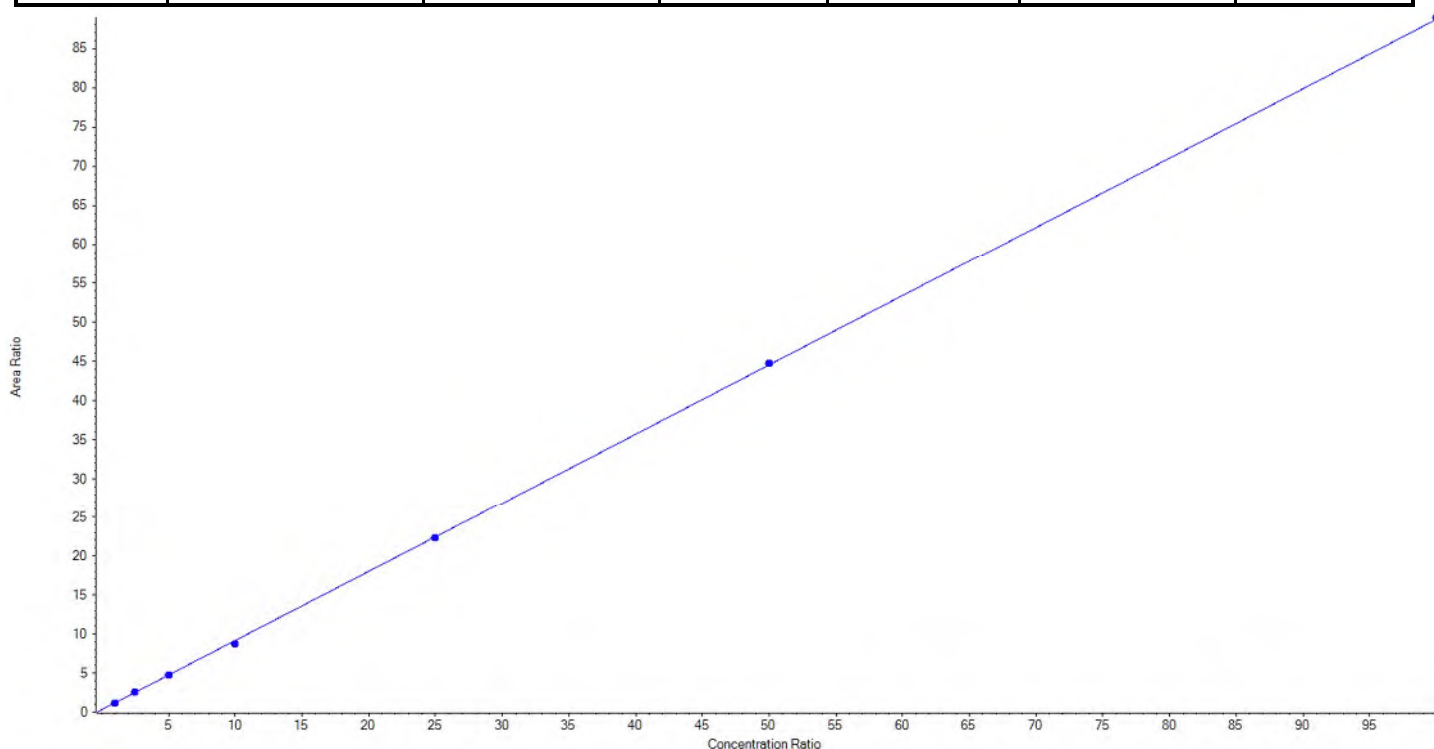
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxA_1	Data File	18-0523_18-0524.wiff
MRM Transition	313.0 / 269.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.88409x + 0.32379$ ($r = 0.99988$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	100.860031	100.9
8	JZ81	L4	True	250.00	258.019492	103.2
9	JZ82	L5	True	500.00	506.144130	101.2
10	JZ83	L6	True	1000.00	942.865717	94.3
11	JZ84	L7	True	2500.00	2490.992575	99.6
12	JZ85	L8	True	5000.00	5026.589126	100.5
13	JZ86	L9	True	10000.00	10024.528929	100.3





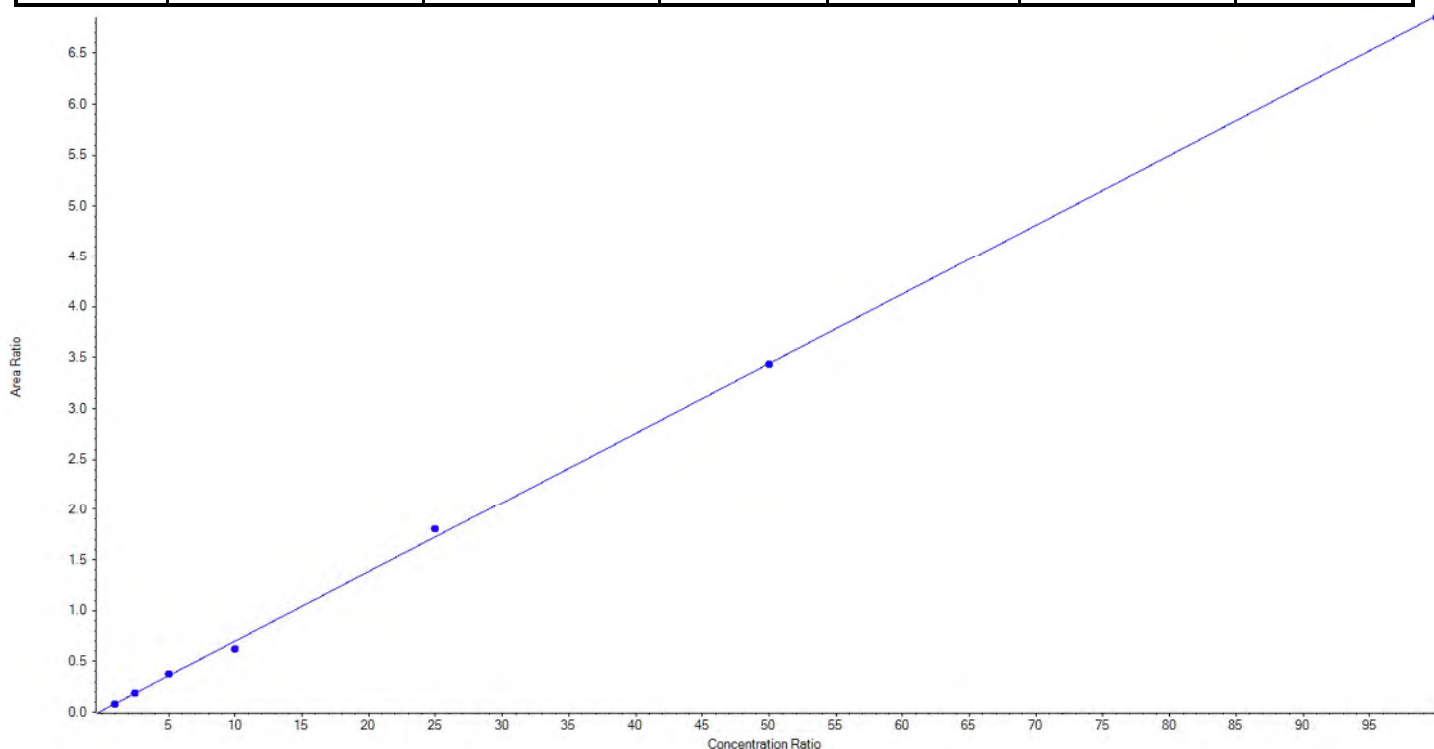
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxA_2	Data File	18-0523_18-0524.wiff
MRM Transition	313.0 / 119.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.06854 x + 0.01472$ (r = 0.99938) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	99.493988	99.5
8	JZ81	L4	True	250.00	254.937433	102.0
9	JZ82	L5	True	500.00	529.185395	105.8
10	JZ83	L6	True	1000.00	884.440354	88.4
11	JZ84	L7	True	2500.00	2616.806311	104.7
12	JZ85	L8	True	5000.00	4992.630645	99.9
13	JZ86	L9	True	10000.00	9972.505873	99.7





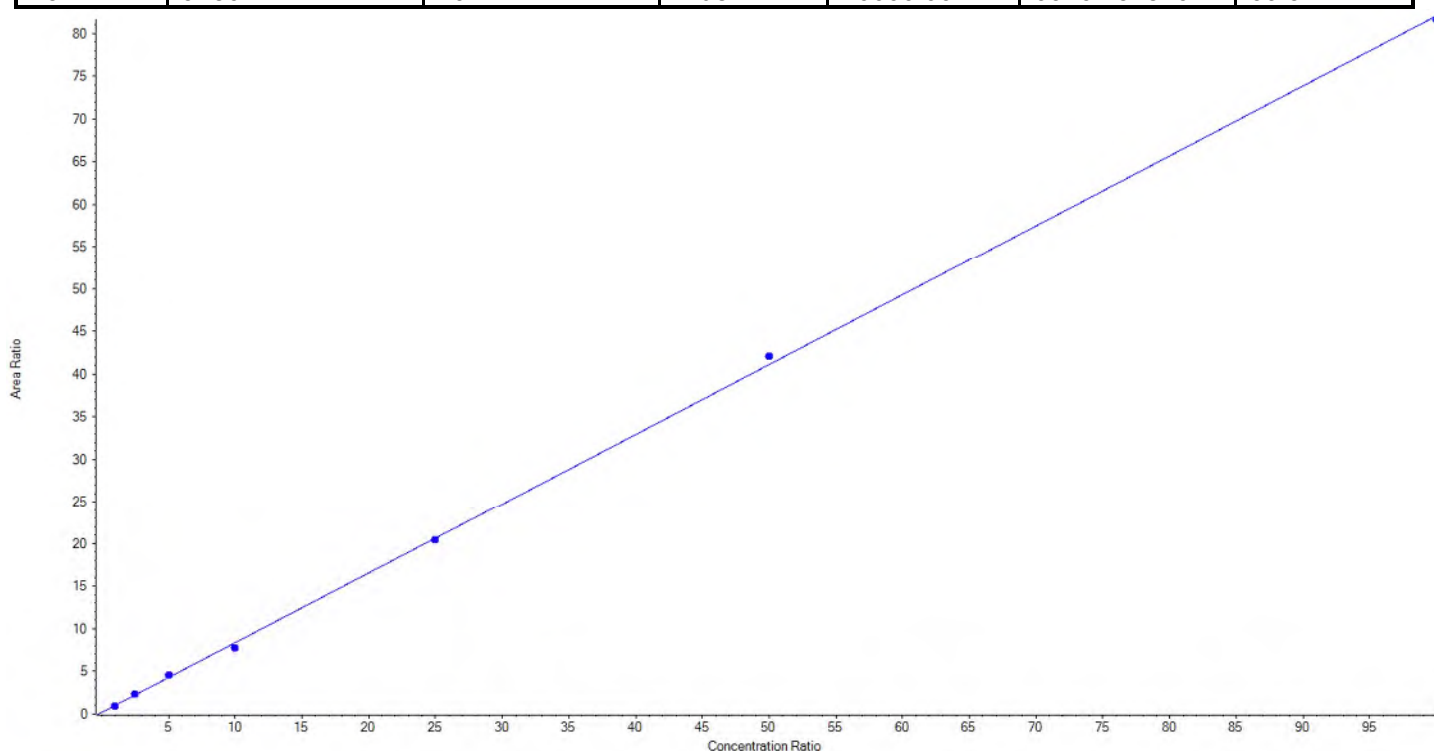
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHpA_1	Data File	18-0523_18-0524.wiff
MRM Transition	363.0 / 319.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.81878x + 0.20212$ ($r = 0.99957$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.591072	92.6
8	JZ81	L4	True	250.00	267.133284	106.9
9	JZ82	L5	True	500.00	539.413778	107.9
10	JZ83	L6	True	1000.00	921.928726	92.2
11	JZ84	L7	True	2500.00	2468.282056	98.7
12	JZ85	L8	True	5000.00	5114.219257	102.3
13	JZ86	L9	True	10000.00	9946.431826	99.5





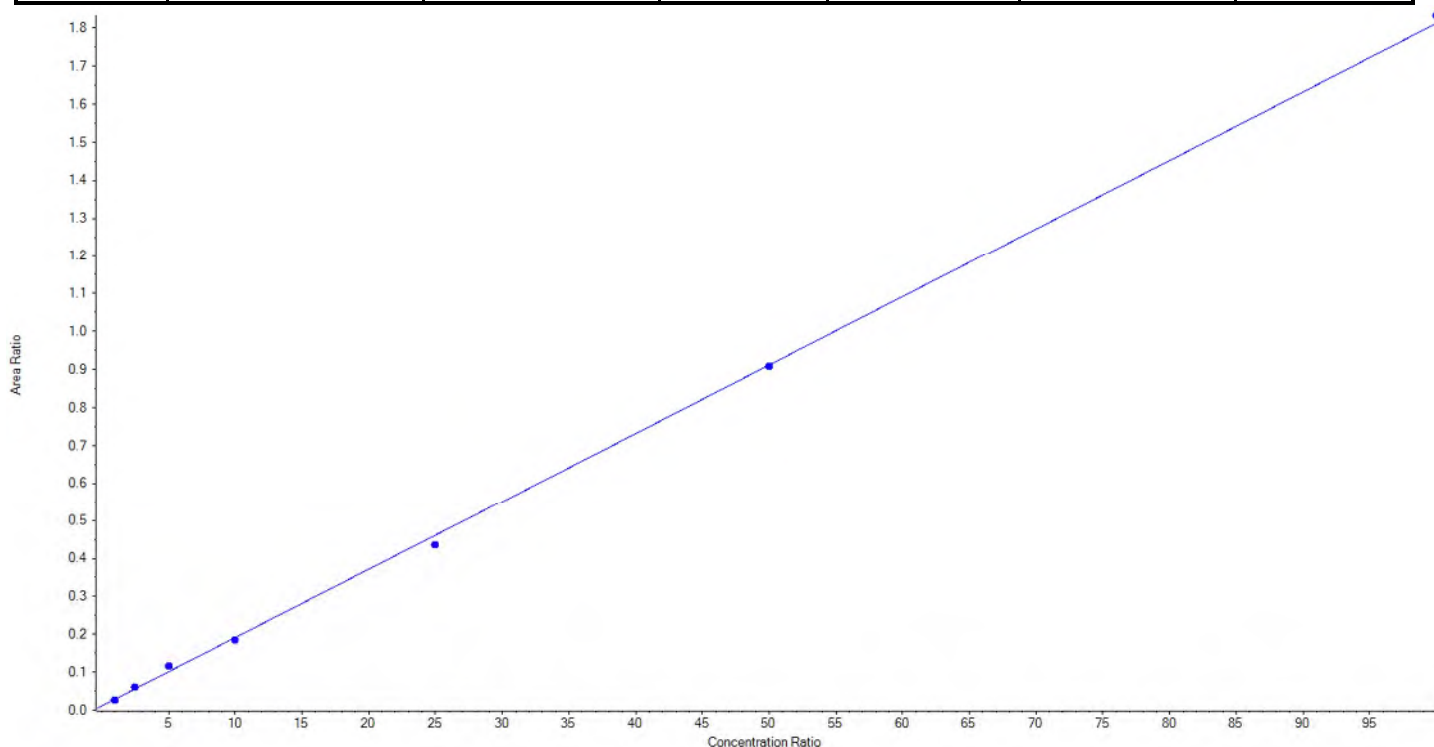
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHpA_2	Data File	18-0523_18-0524.wiff
MRM Transition	363.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.01801 x + 0.01107$ ($r = 0.99914$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	83.599970	83.6
8	JZ81	L4	True	250.00	271.716540	108.7
9	JZ82	L5	True	500.00	581.392877	116.3
10	JZ83	L6	True	1000.00	964.147793	96.4
11	JZ84	L7	True	2500.00	2357.667898	94.3
12	JZ85	L8	True	5000.00	4979.859362	99.6
13	JZ86	L9	True	10000.00	10111.615559	101.1





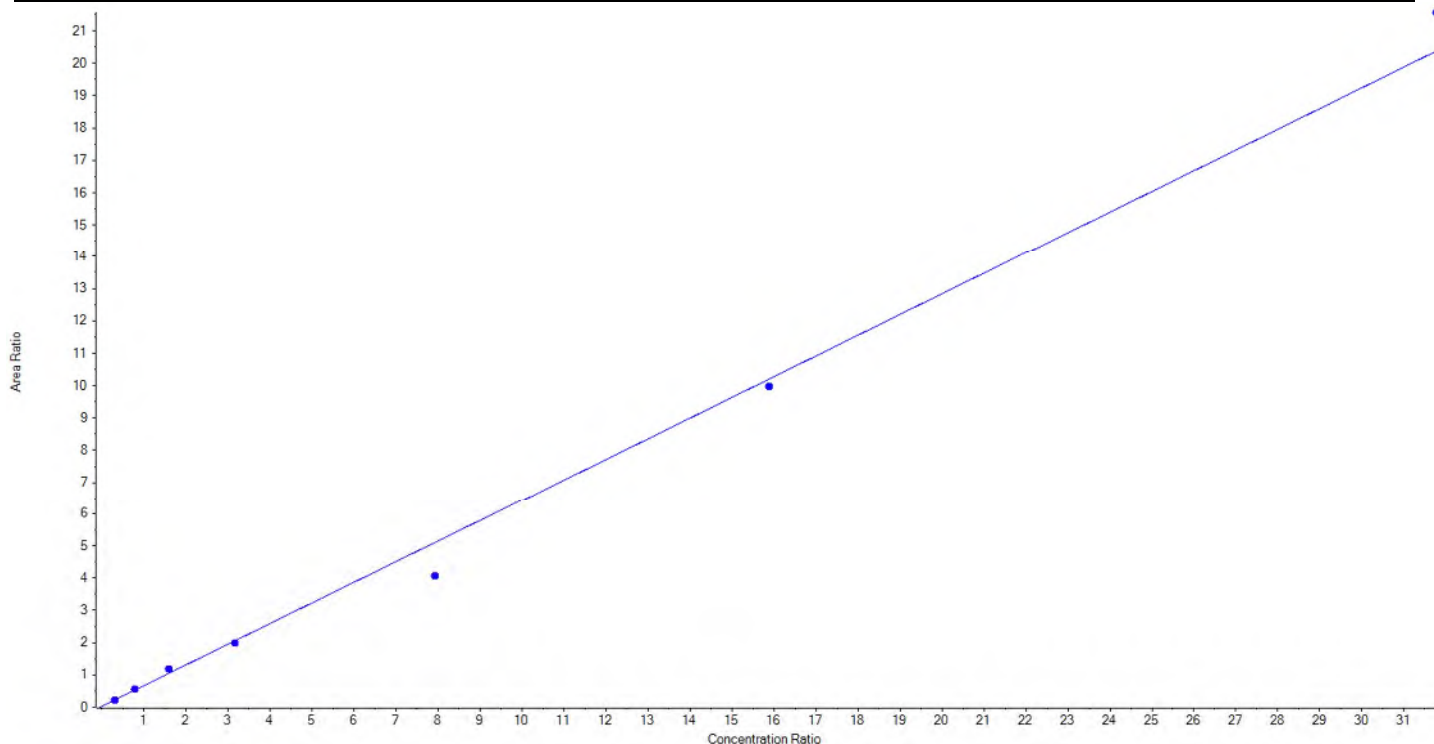
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxS_1	Data File	18-0523_18-0524.wiff
MRM Transition	399.0 / 80.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.64046 x + 0.02580$ ($r = 0.99537$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	91.20	91.932243	100.8
8	JZ81	L4	True	228.00	244.692862	107.3
9	JZ82	L5	True	456.00	514.827115	112.9
10	JZ83	L6	True	912.00	875.796194	96.0
11	JZ84	L7	True	2280.00	1807.484503	79.3
12	JZ85	L8	True	4560.00	4462.151829	97.9
13	JZ86	L9	True	9120.00	9650.315253	105.8





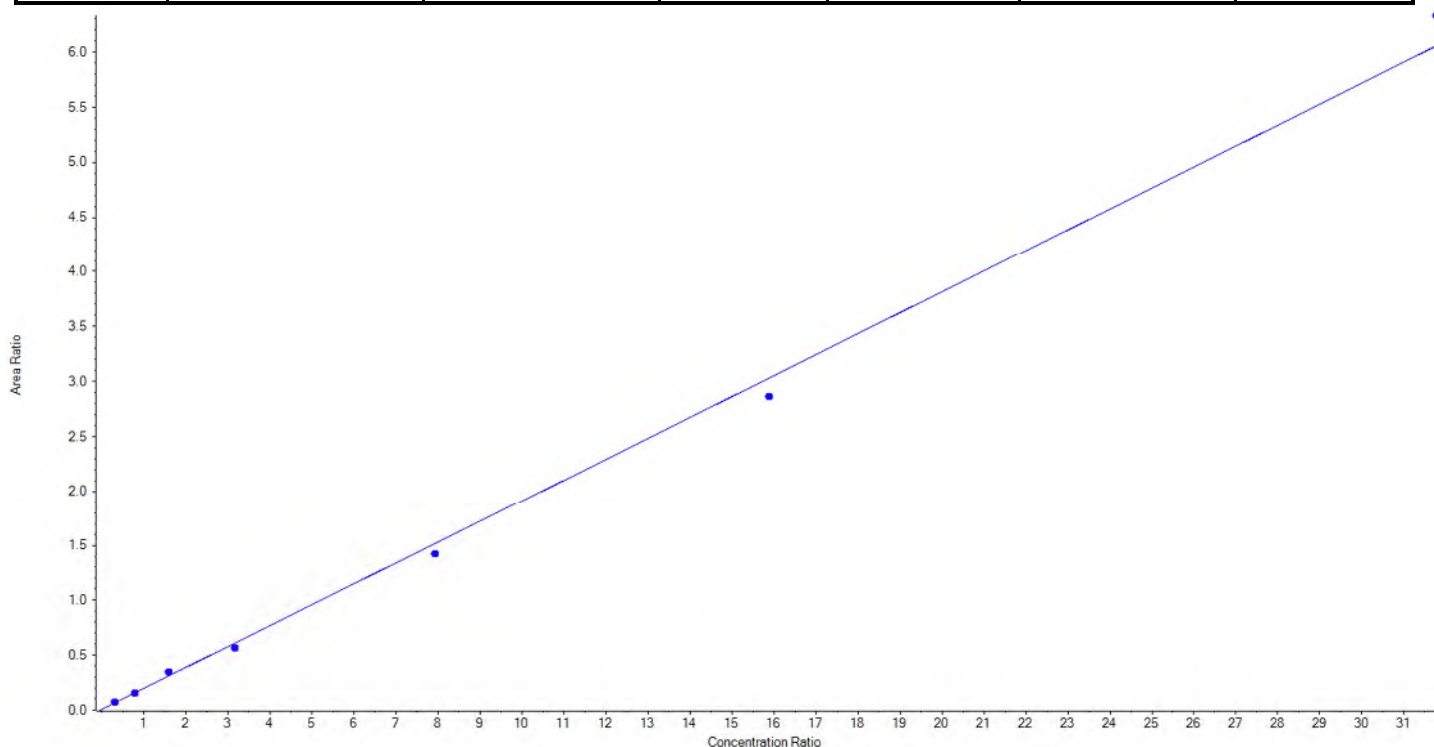
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFHxS_2	Data File	18-0523_18-0524.wiff
MRM Transition	399.0 / 99.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.19038x + 0.00736$ ($r = 0.99827$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	91.20	95.733820	105.0
8	JZ81	L4	True	228.00	225.396190	98.9
9	JZ82	L5	True	456.00	505.854625	110.9
10	JZ83	L6	True	912.00	843.569800	92.5
11	JZ84	L7	True	2280.00	2138.549468	93.8
12	JZ85	L8	True	4560.00	4305.685887	94.4
13	JZ86	L9	True	9120.00	9532.410210	104.5





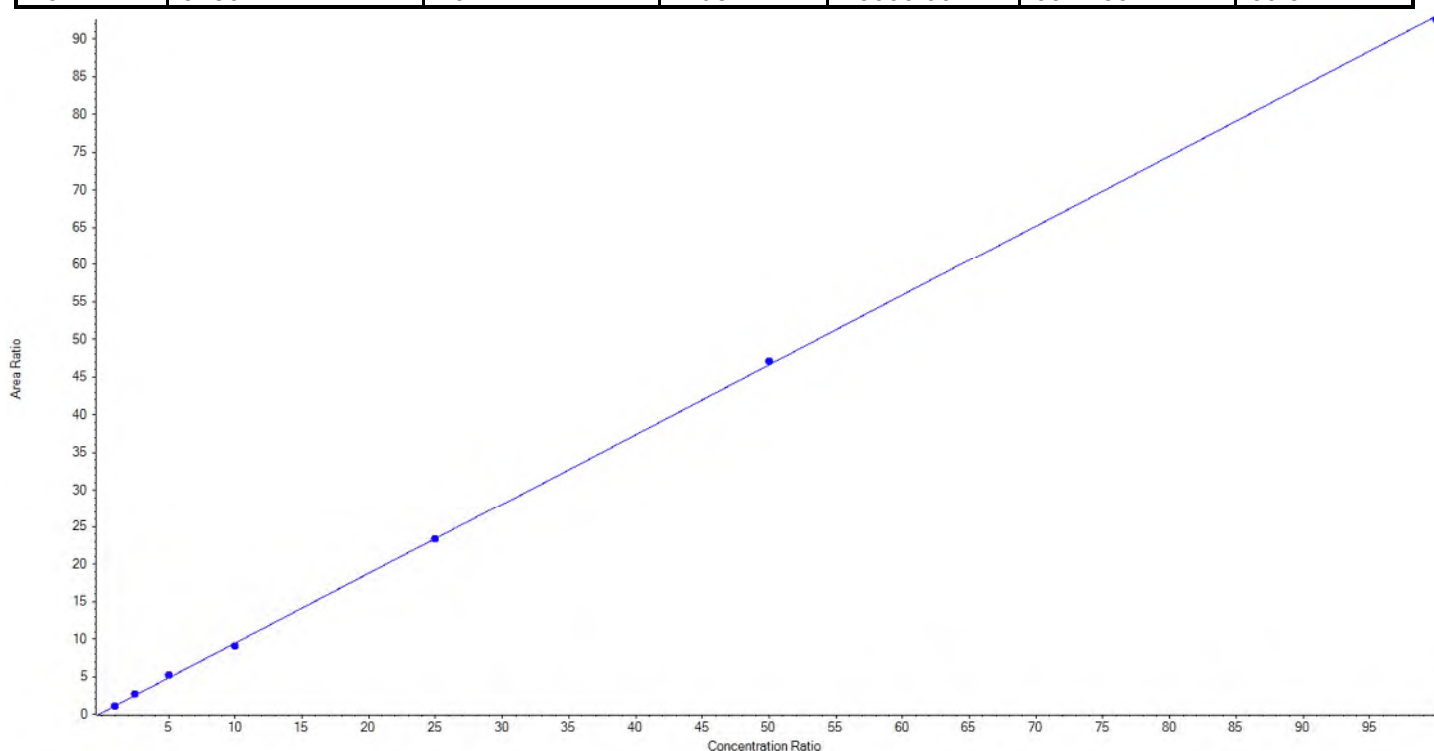
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOA_1	Data File	18-0523_18-0524.wiff
MRM Transition	413.0 / 369.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.92874 x + 0.17528$ ($r = 0.99978$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	90.419829	90.4
8	JZ81	L4	True	250.00	265.217814	106.1
9	JZ82	L5	True	500.00	536.200392	107.2
10	JZ83	L6	True	1000.00	956.983740	95.7
11	JZ84	L7	True	2500.00	2500.350046	100.0
12	JZ85	L8	True	5000.00	5053.230955	101.1
13	JZ86	L9	True	10000.00	9947.597224	99.5





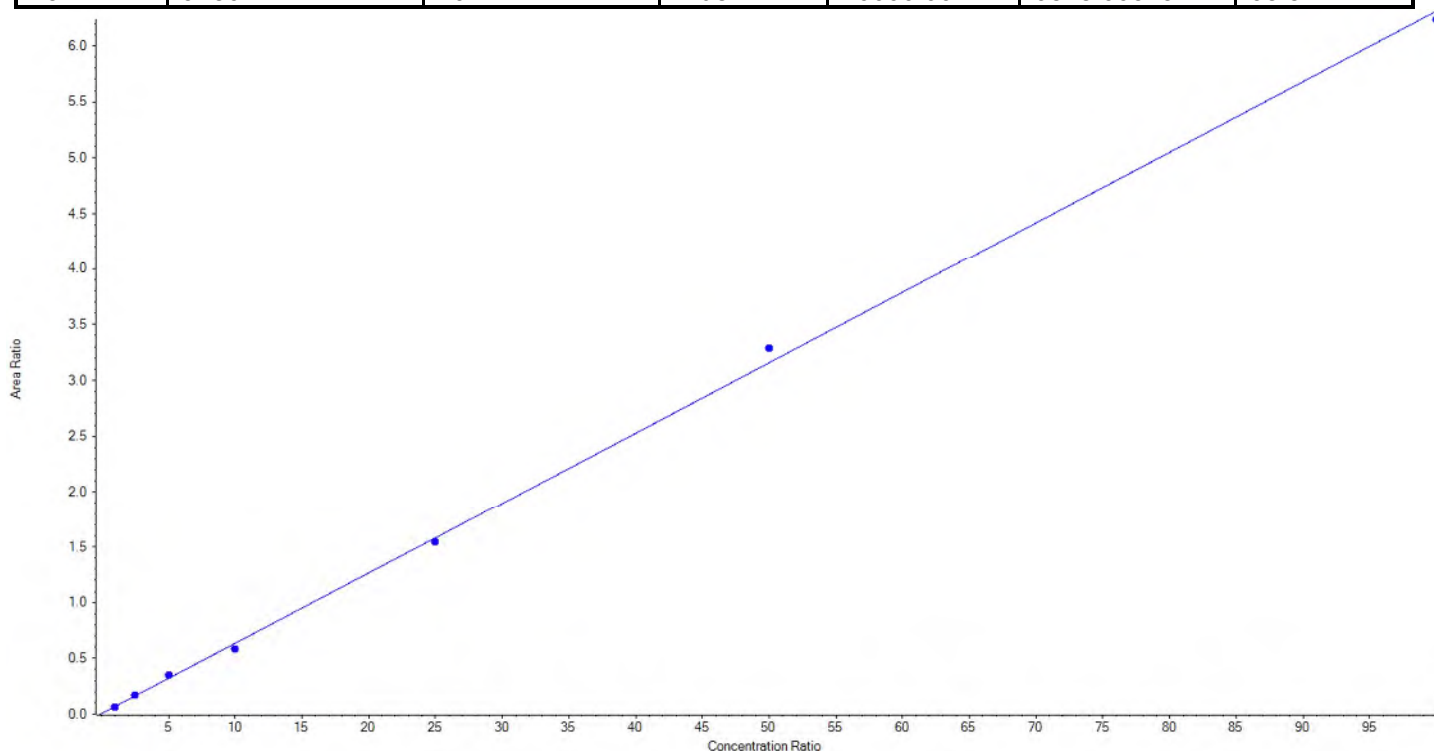
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOA_2	Data File	18-0523_18-0524.wiff
MRM Transition	413.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.06305 x + 0.00510$ ($r = 0.99923$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	91.488891	91.5
8	JZ81	L4	True	250.00	263.853603	105.5
9	JZ82	L5	True	500.00	554.473217	110.9
10	JZ83	L6	True	1000.00	914.495818	91.5
11	JZ84	L7	True	2500.00	2444.886244	97.8
12	JZ85	L8	True	5000.00	5202.197074	104.0
13	JZ86	L9	True	10000.00	9878.605154	98.8





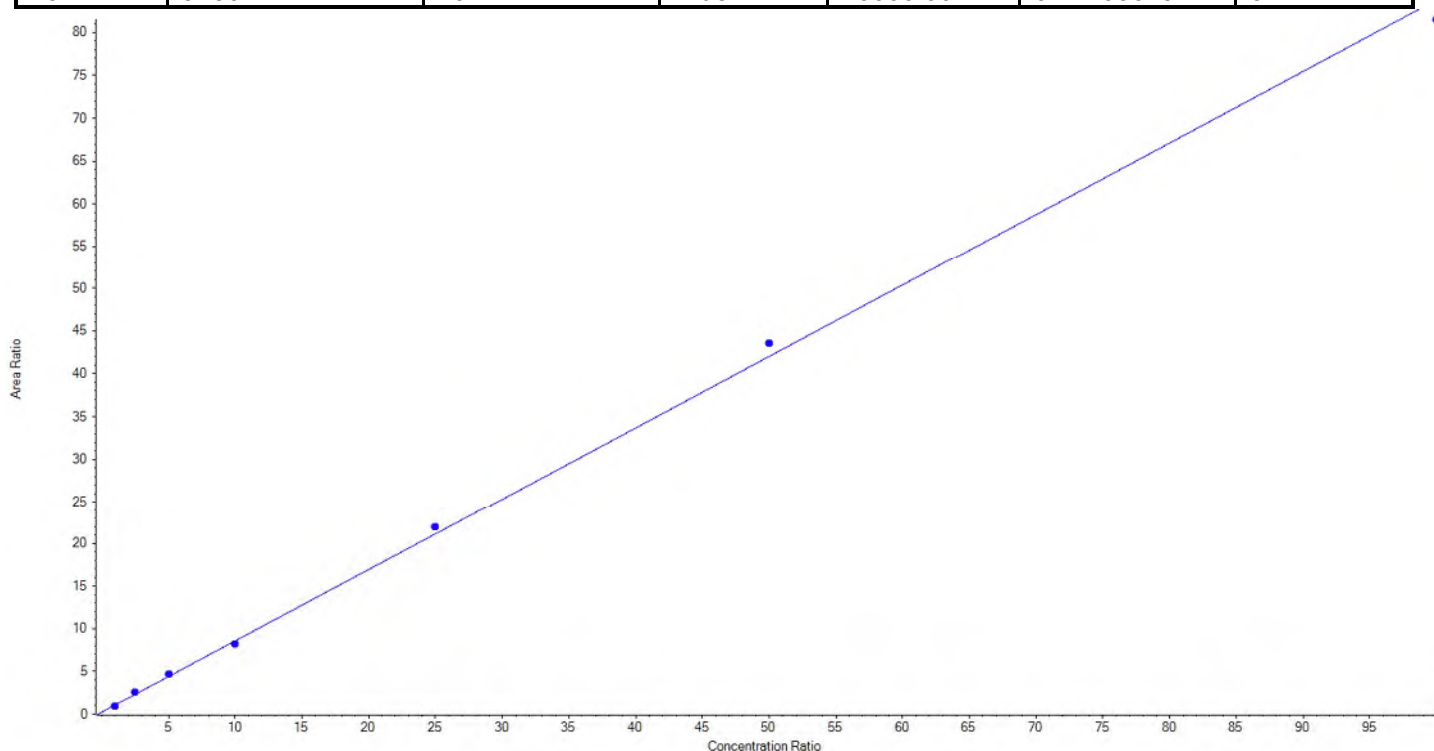
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFNA_1	Data File	18-0523_18-0524.wiff
MRM Transition	463.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.83580x + 0.23553$ ($r = 0.99913$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	82.476112	82.5
8	JZ81	L4	True	250.00	278.245015	111.3
9	JZ82	L5	True	500.00	531.668423	106.3
10	JZ83	L6	True	1000.00	951.587519	95.2
11	JZ84	L7	True	2500.00	2592.677432	103.7
12	JZ85	L8	True	5000.00	5189.289362	103.8
13	JZ86	L9	True	10000.00	9724.056137	97.2





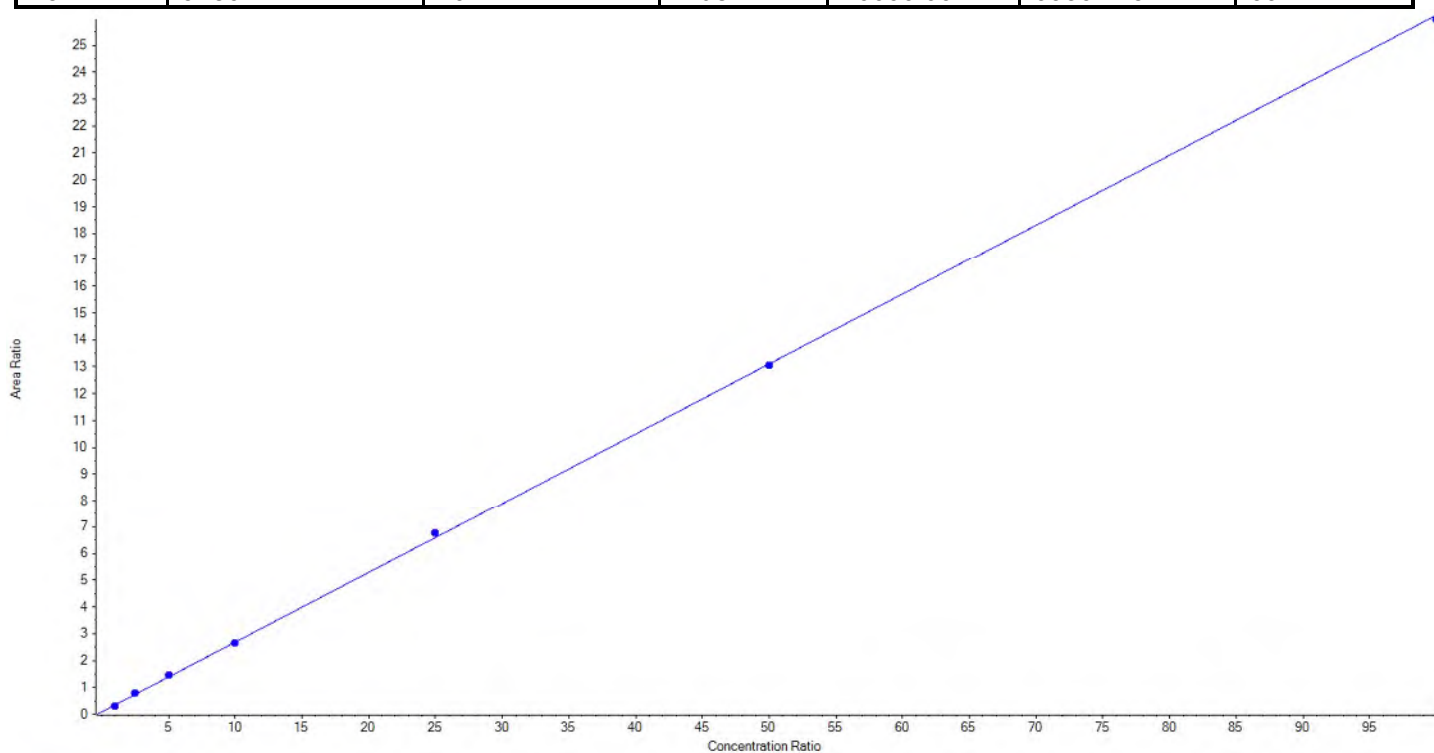
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFNA_2	Data File	18-0523_18-0524.wiff
MRM Transition	463.0 / 219.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.26038x + 0.08356$ ($r = 0.99978$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	86.279636	86.3
8	JZ81	L4	True	250.00	273.929049	109.6
9	JZ82	L5	True	500.00	520.946615	104.2
10	JZ83	L6	True	1000.00	983.697300	98.4
11	JZ84	L7	True	2500.00	2562.408880	102.5
12	JZ85	L8	True	5000.00	4986.595092	99.7
13	JZ86	L9	True	10000.00	9936.143427	99.4





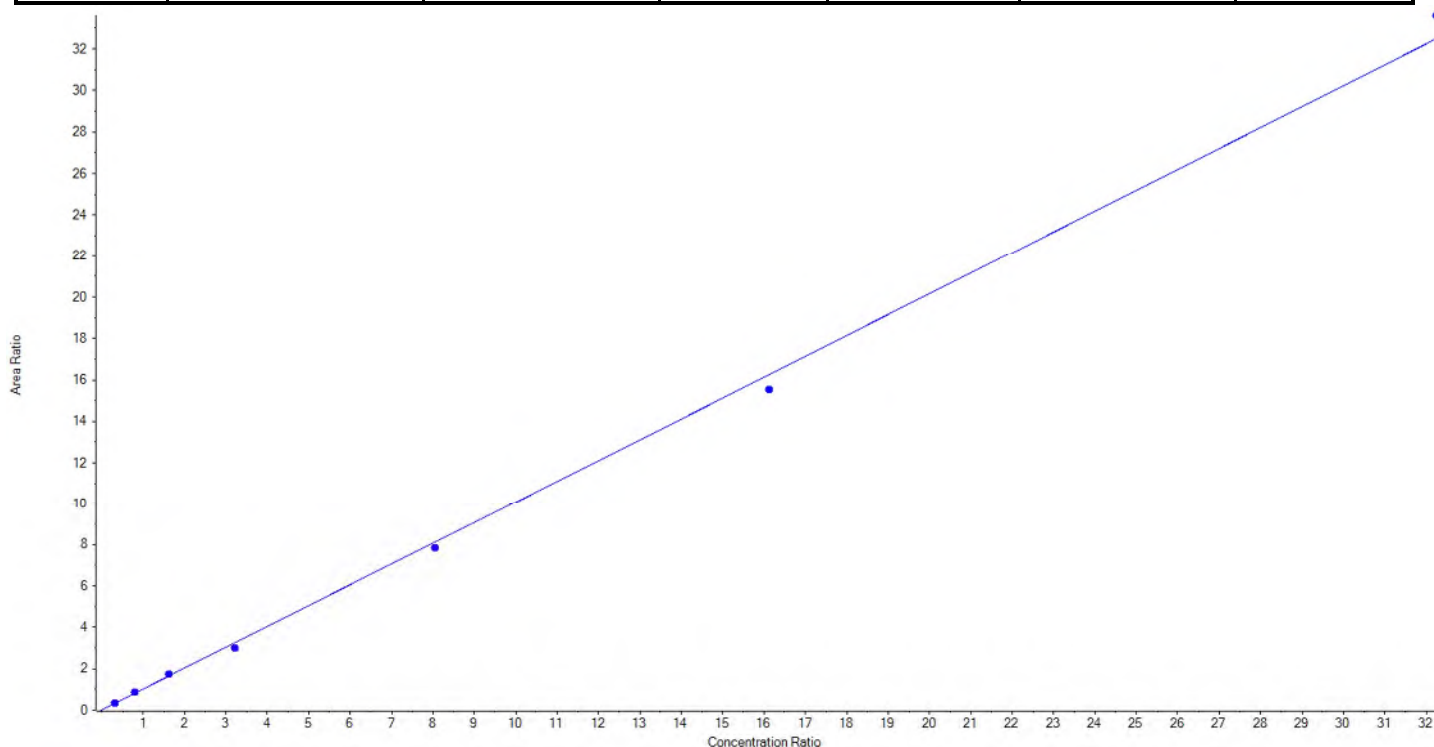
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOS_1	Data File	18-0523_18-0524.wiff
MRM Transition	499.0 / 80.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.00691x + 0.01749$ ($r = 0.99894$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	92.60	92.053366	99.4
8	JZ81	L4	True	231.50	245.760890	106.2
9	JZ82	L5	True	463.00	496.934120	107.3
10	JZ83	L6	True	925.60	848.869547	91.7
11	JZ84	L7	True	2314.00	2229.662049	96.4
12	JZ85	L8	True	4628.00	4425.297687	95.6
13	JZ86	L9	True	9256.00	9572.122341	103.4





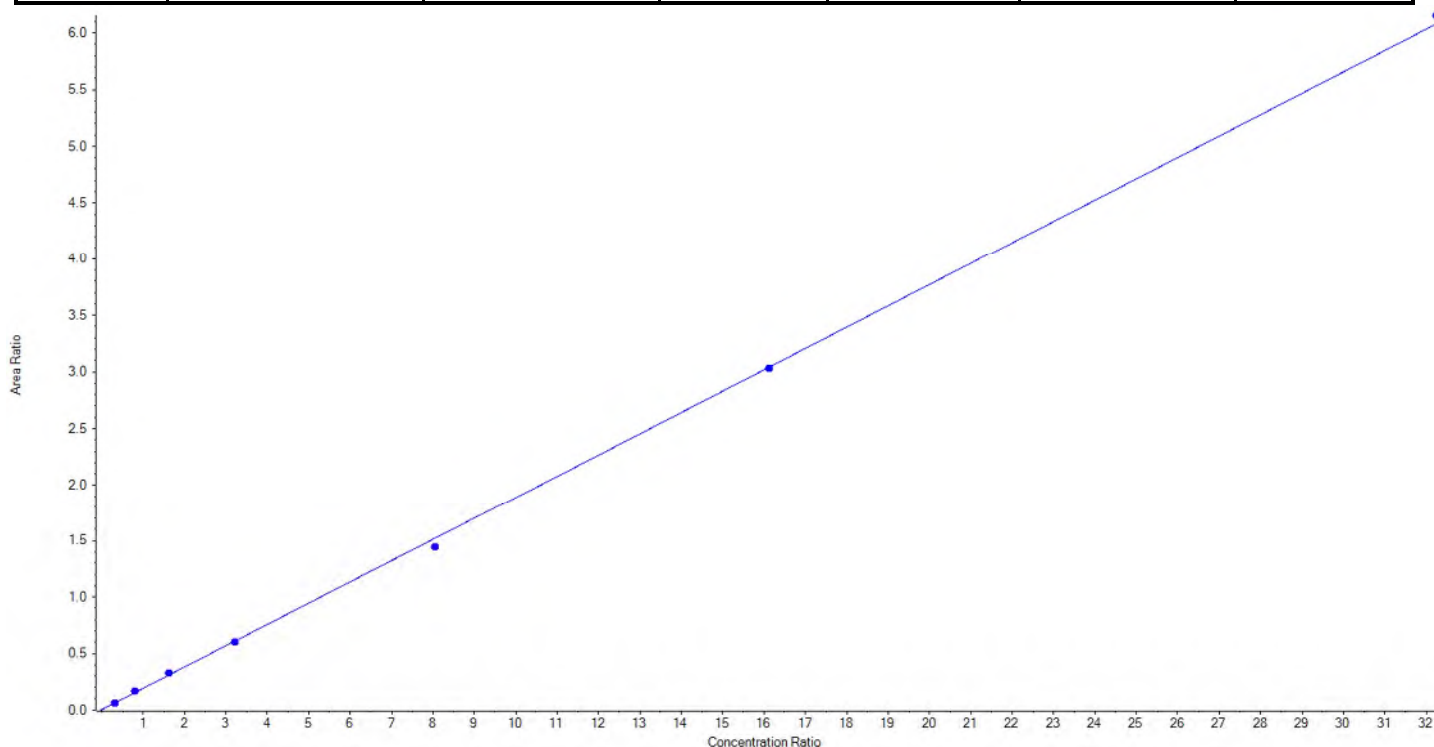
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFOS_2	Data File	18-0523_18-0524.wiff
MRM Transition	499.0 / 99.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.18836 x + 0.00460$ ($r = 0.99959$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	92.60	84.589764	91.4
8	JZ81	L4	True	231.50	249.900249	108.0
9	JZ82	L5	True	463.00	493.823007	106.7
10	JZ83	L6	True	925.60	912.177512	98.6
11	JZ84	L7	True	2314.00	2188.533435	94.6
12	JZ85	L8	True	4628.00	4615.206815	99.7
13	JZ86	L9	True	9256.00	9366.469218	101.2





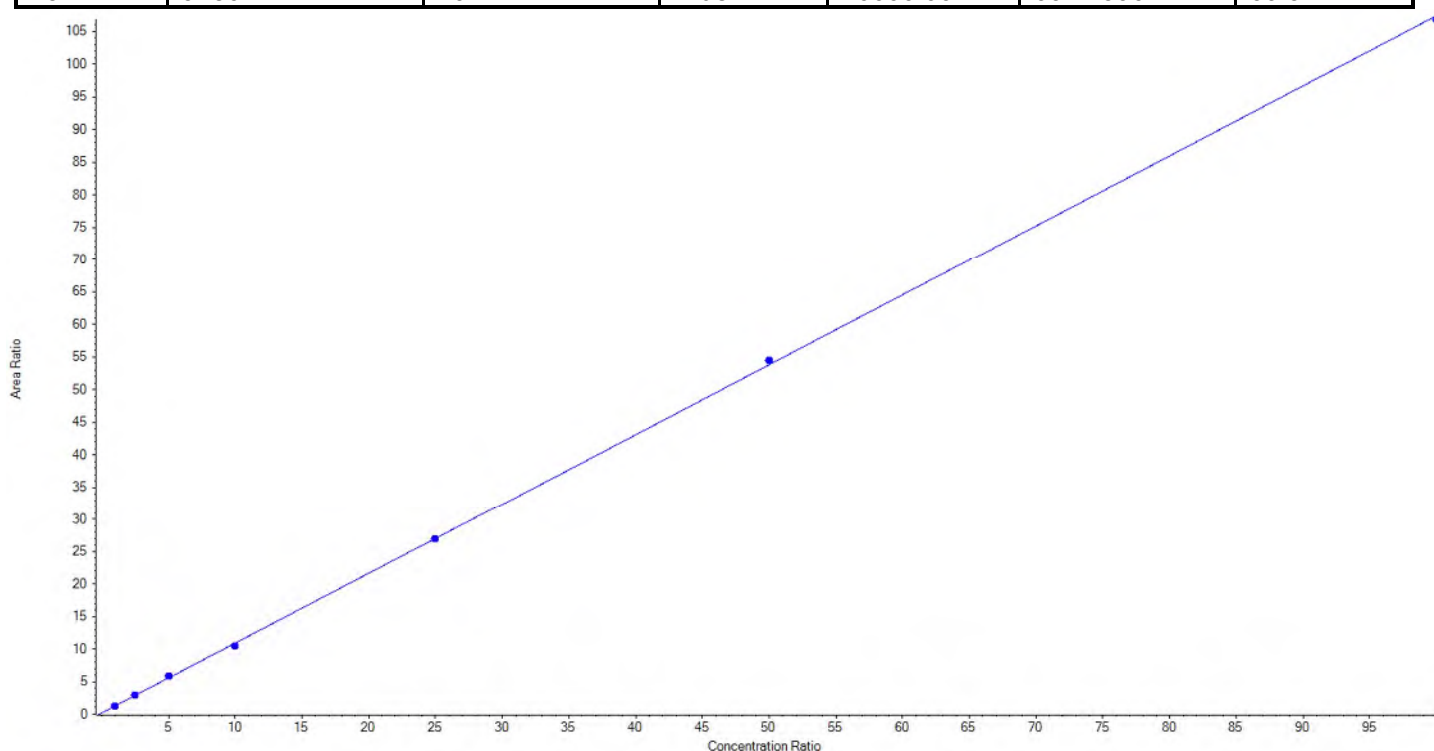
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFDA_1	Data File	18-0523_18-0524.wiff
MRM Transition	513.0 / 469.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.07195x + 0.19352$ ($r = 0.99985$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	93.455449	93.5
8	JZ81	L4	True	250.00	260.370572	104.2
9	JZ82	L5	True	500.00	527.458555	105.5
10	JZ83	L6	True	1000.00	961.920584	96.2
11	JZ84	L7	True	2500.00	2501.130905	100.1
12	JZ85	L8	True	5000.00	5061.067717	101.2
13	JZ86	L9	True	10000.00	9944.596217	99.5





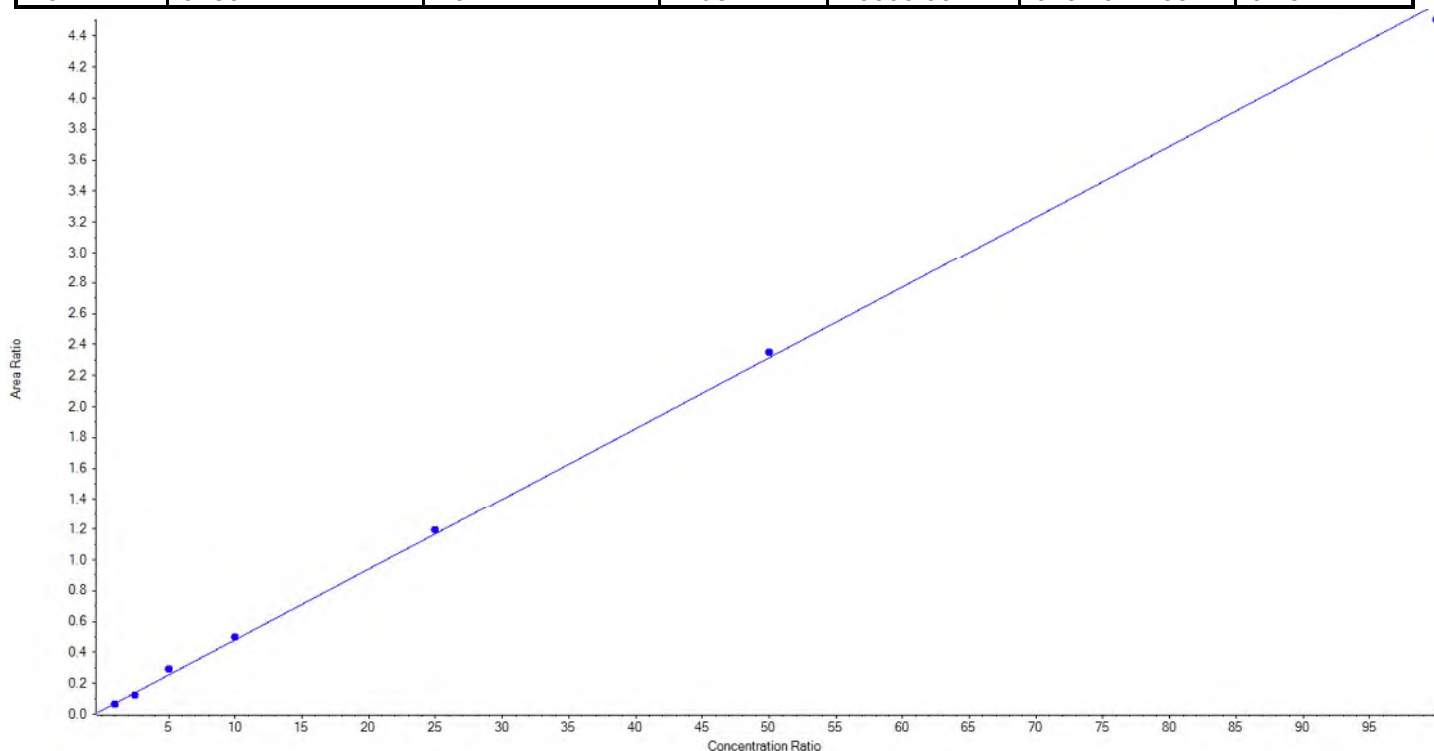
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFDA_2	Data File	18-0523_18-0524.wiff
MRM Transition	513.0 / 219.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.04582x + 0.02416$ ($r = 0.99907$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	91.140280	91.1
8	JZ81	L4	True	250.00	213.880578	85.6
9	JZ82	L5	True	500.00	590.959868	118.2
10	JZ83	L6	True	1000.00	1035.220526	103.5
11	JZ84	L7	True	2500.00	2552.909954	102.1
12	JZ85	L8	True	5000.00	5081.817658	101.6
13	JZ86	L9	True	10000.00	9784.071135	97.8





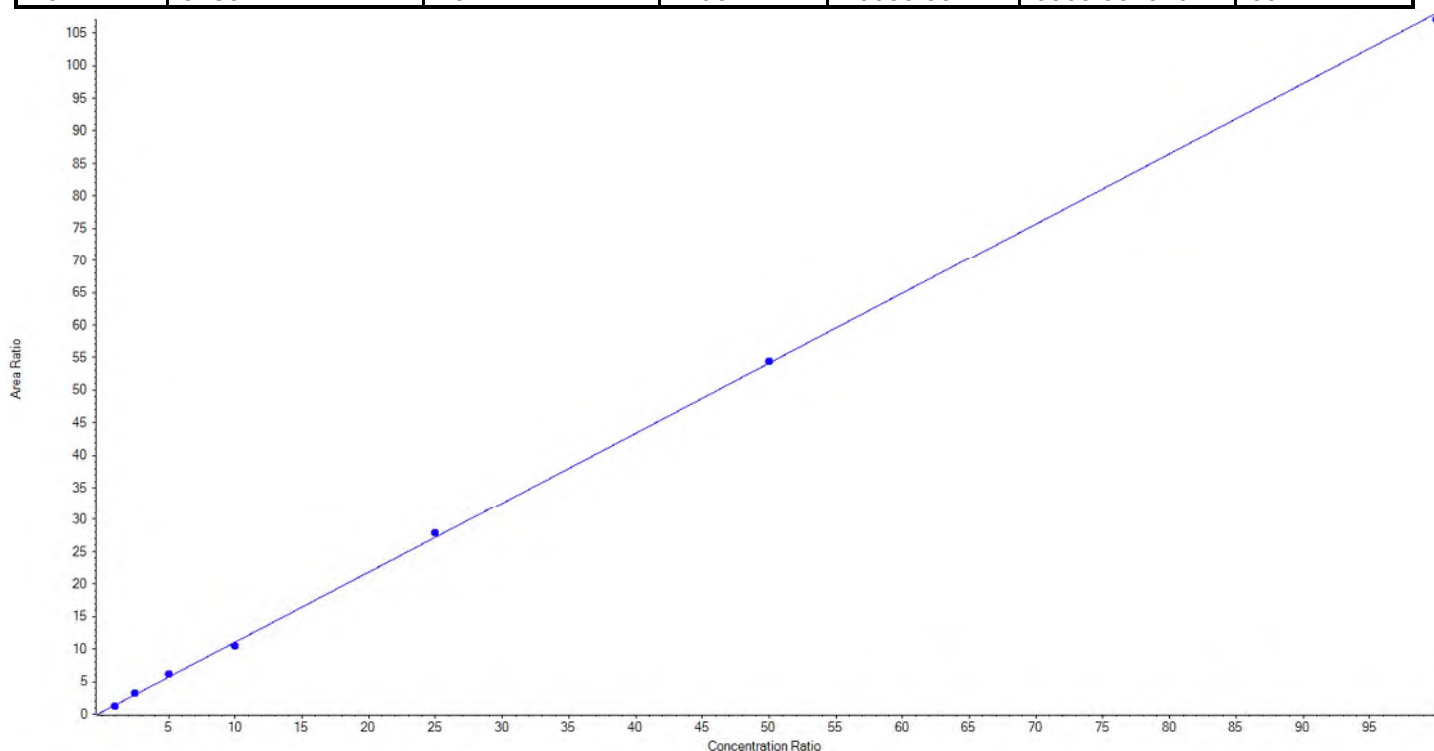
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFUnA_1	Data File	18-0523_18-0524.wiff
MRM Transition	563.0 / 519.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.07699x + 0.31290$ ($r = 0.99959$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	85.922956	85.9
8	JZ81	L4	True	250.00	268.407545	107.4
9	JZ82	L5	True	500.00	549.872129	110.0
10	JZ83	L6	True	1000.00	946.560479	94.7
11	JZ84	L7	True	2500.00	2559.717863	102.4
12	JZ85	L8	True	5000.00	5029.964712	100.6
13	JZ86	L9	True	10000.00	9909.554316	99.1





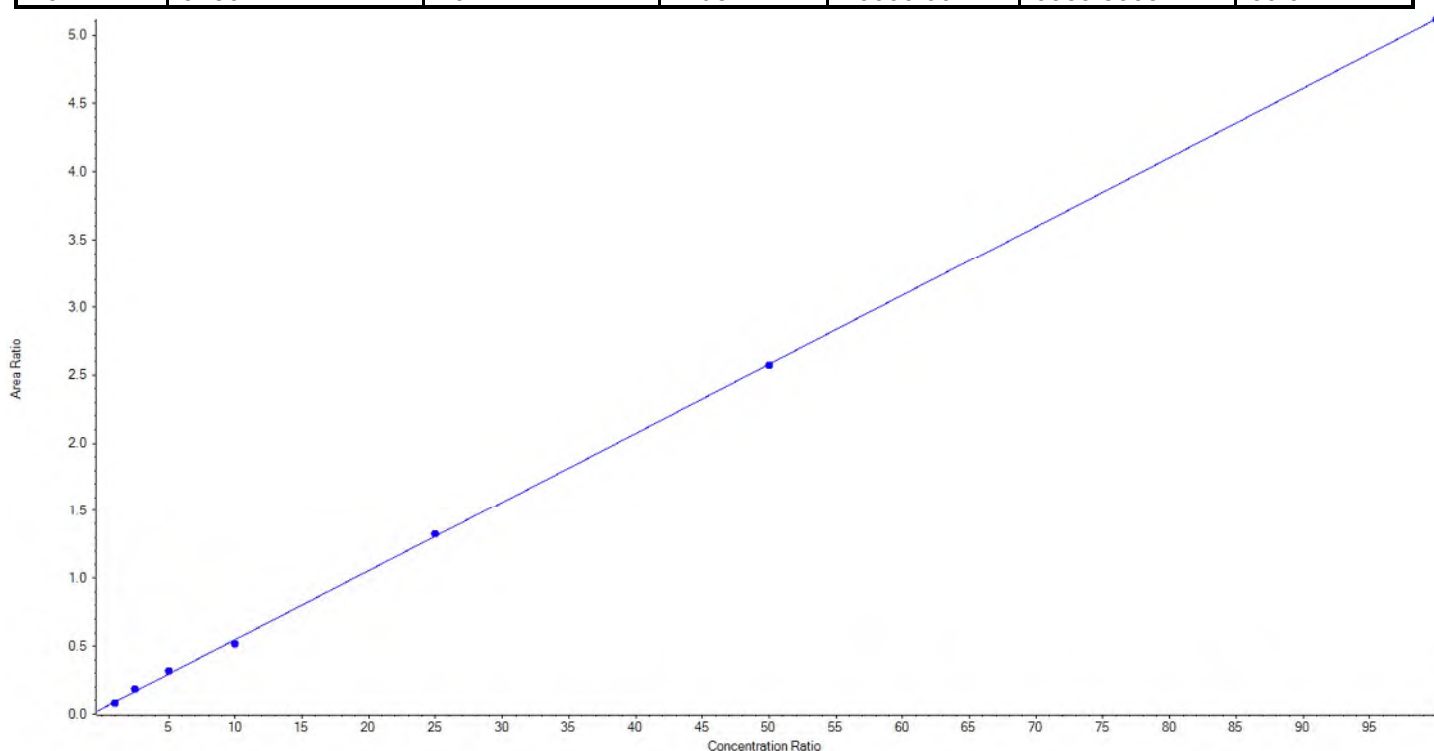
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFUnA_2	Data File	18-0523_18-0524.wiff
MRM Transition	563.0 / 269.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.05079x + 0.04003$ ($r = 0.99957$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	84.767359	84.8
8	JZ81	L4	True	250.00	281.972160	112.8
9	JZ82	L5	True	500.00	541.060573	108.2
10	JZ83	L6	True	1000.00	934.412077	93.4
11	JZ84	L7	True	2500.00	2526.652698	101.1
12	JZ85	L8	True	5000.00	4991.299563	99.8
13	JZ86	L9	True	10000.00	9989.835571	99.9





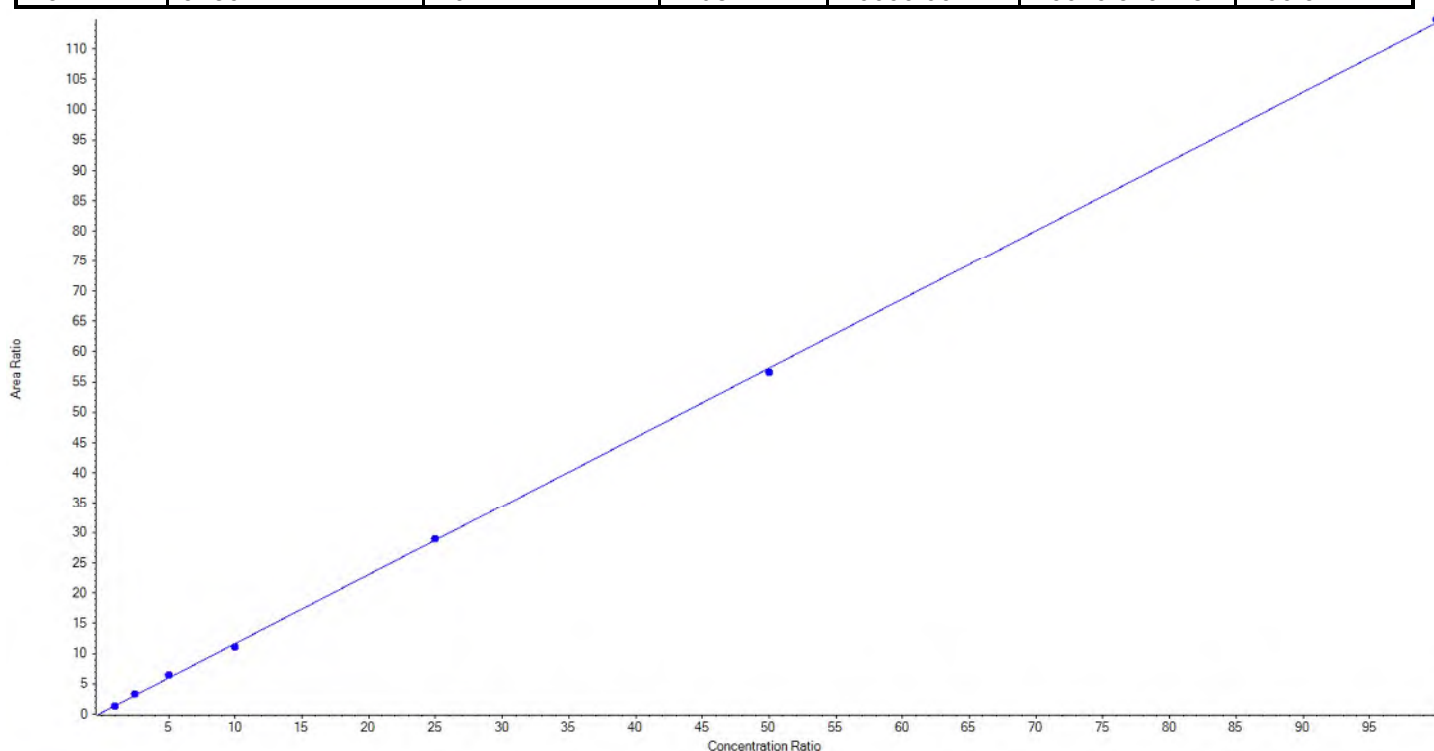
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFD _o A_1	Data File	18-0523_18-0524.wiff
MRM Transition	613.0 / 569.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C ₂ -PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.14042x + 0.24800$ ($r = 0.99965$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	89.319676	89.3
8	JZ81	L4	True	250.00	266.201717	106.5
9	JZ82	L5	True	500.00	549.580243	109.9
10	JZ83	L6	True	1000.00	943.232037	94.3
11	JZ84	L7	True	2500.00	2519.527484	100.8
12	JZ85	L8	True	5000.00	4935.789694	98.7
13	JZ86	L9	True	10000.00	10046.349148	100.5





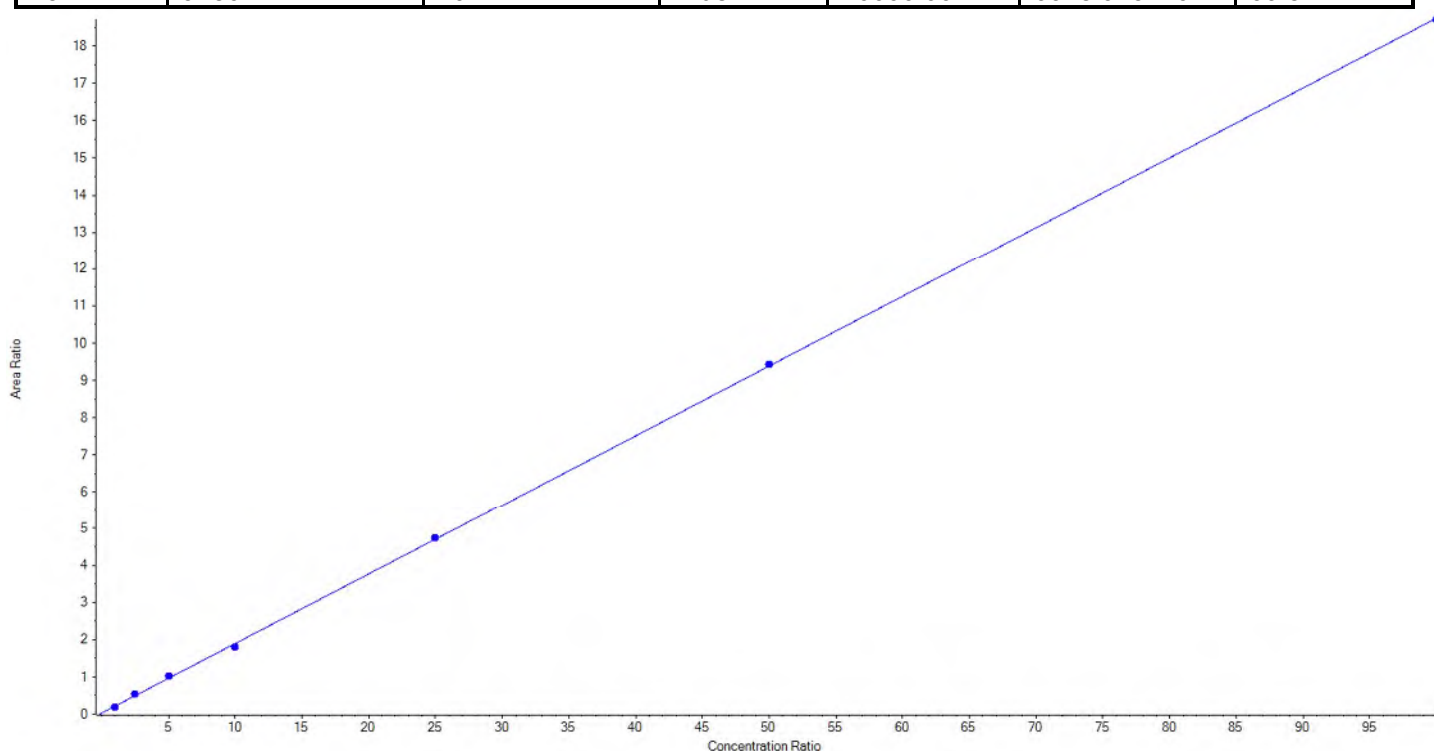
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFD _o A_2	Data File	18-0523_18-0524.wiff
MRM Transition	613.0 / 319.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.18715x + 0.02825$ ($r = 0.99976$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	90.125534	90.1
8	JZ81	L4	True	250.00	269.682655	107.9
9	JZ82	L5	True	500.00	534.102042	106.8
10	JZ83	L6	True	1000.00	944.935981	94.5
11	JZ84	L7	True	2500.00	2512.673691	100.5
12	JZ85	L8	True	5000.00	5019.564881	100.4
13	JZ86	L9	True	10000.00	9978.915216	99.8





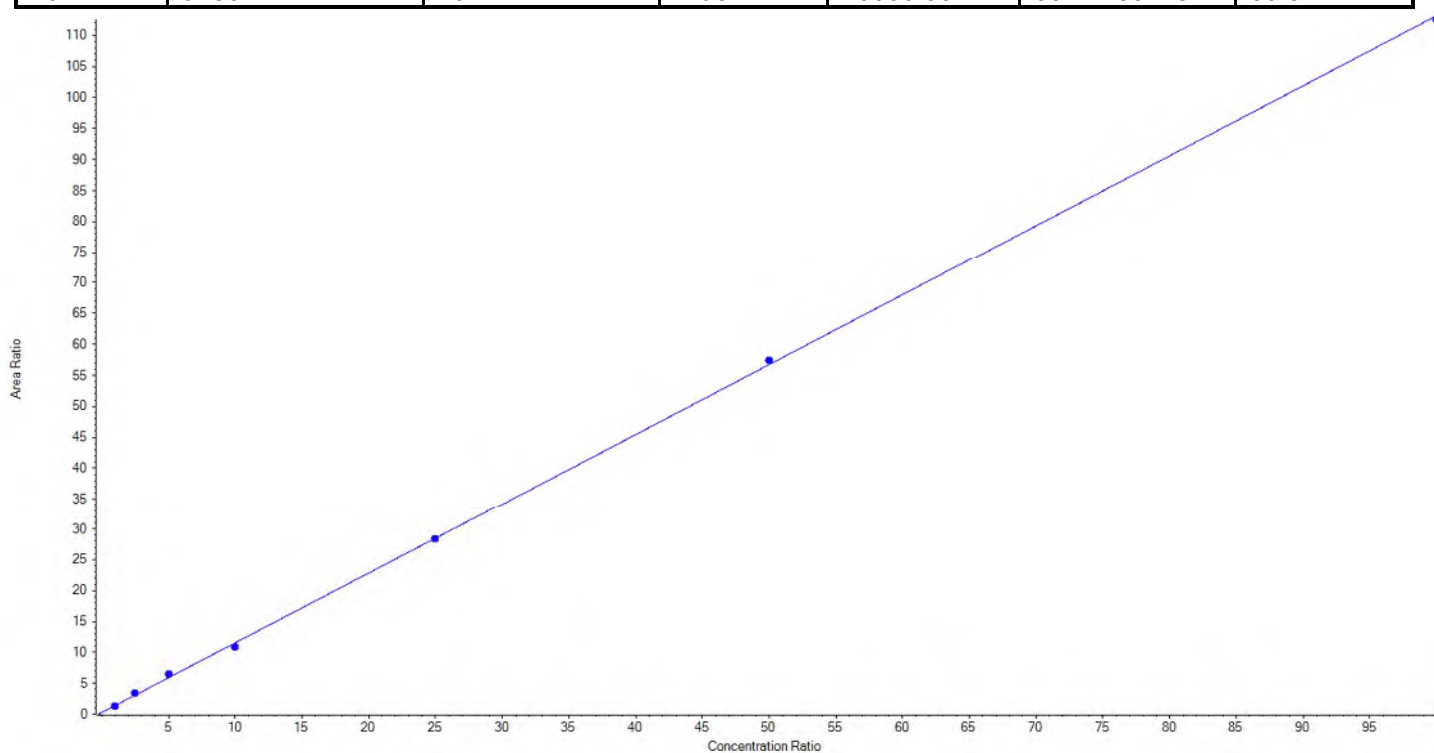
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTTrDA_1	Data File	18-0523_18-0524.wiff
MRM Transition	663.0 / 619.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.12933x + 0.25468$ ($r = 0.99956$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	86.003197	86.0
8	JZ81	L4	True	250.00	273.527871	109.4
9	JZ82	L5	True	500.00	552.118199	110.4
10	JZ83	L6	True	1000.00	937.995187	93.8
11	JZ84	L7	True	2500.00	2490.163845	99.6
12	JZ85	L8	True	5000.00	5065.402477	101.3
13	JZ86	L9	True	10000.00	9944.789223	99.5





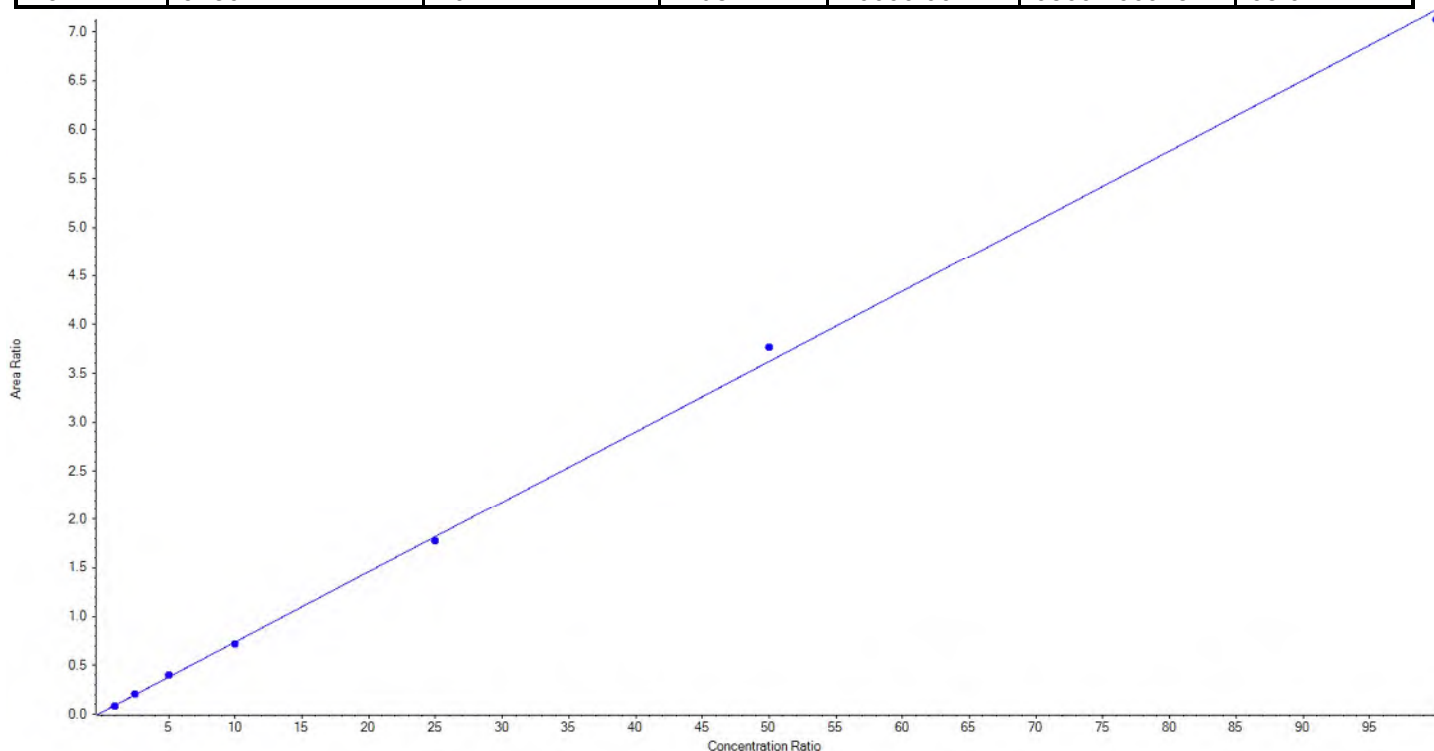
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTTrDA_2	Data File	18-0523_18-0524.wiff
MRM Transition	663.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.07204 x + 0.01868$ ($r = 0.99955$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.966029	93.0
8	JZ81	L4	True	250.00	258.583619	103.4
9	JZ82	L5	True	500.00	530.996022	106.2
10	JZ83	L6	True	1000.00	974.563742	97.5
11	JZ84	L7	True	2500.00	2434.490111	97.4
12	JZ85	L8	True	5000.00	5198.133527	104.0
13	JZ86	L9	True	10000.00	9860.266948	98.6





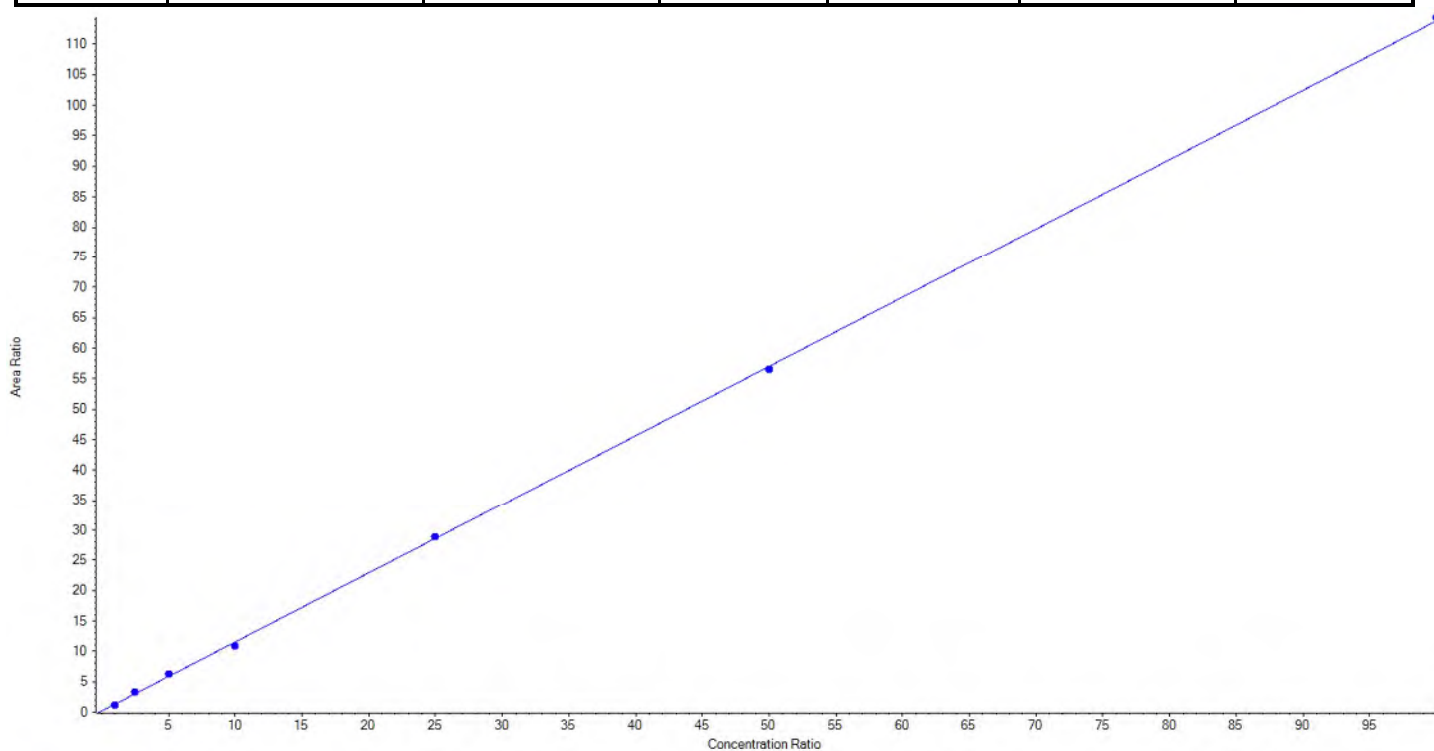
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTeDA_1	Data File	18-0523_18-0524.wiff
MRM Transition	713.0 / 669.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.13640x + 0.17890$ ($r = 0.99973$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	92.355066	92.4
8	JZ81	L4	True	250.00	269.371525	107.8
9	JZ82	L5	True	500.00	530.325680	106.1
10	JZ83	L6	True	1000.00	934.624759	93.5
11	JZ84	L7	True	2500.00	2518.800863	100.8
12	JZ85	L8	True	5000.00	4957.145646	99.1
13	JZ86	L9	True	10000.00	10047.376461	100.5





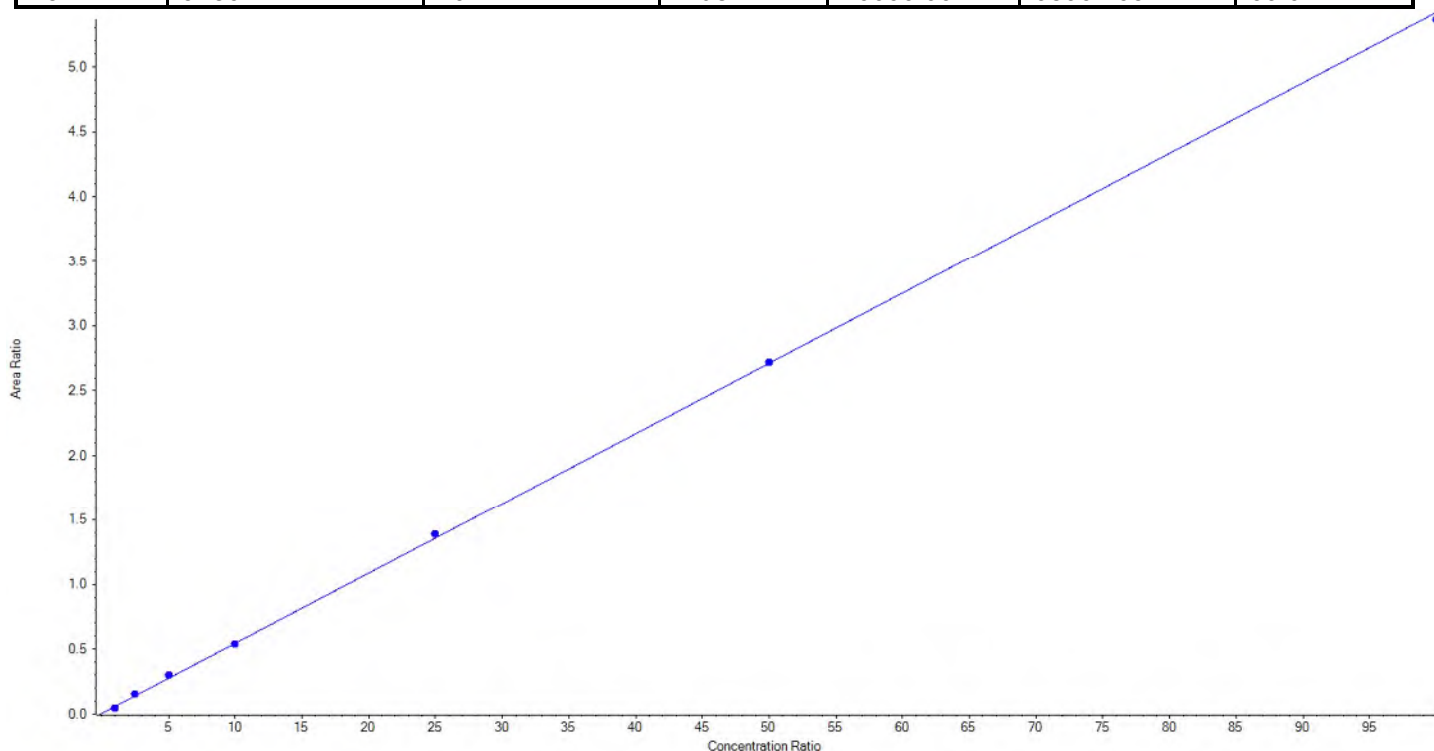
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	PFTeDA_2	Data File	18-0523_18-0524.wiff
MRM Transition	713.0 / 169.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.05414 x + 0.00509$ ($r = 0.99959$) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	79.975639	80.0
8	JZ81	L4	True	250.00	279.709523	111.9
9	JZ82	L5	True	500.00	541.889380	108.4
10	JZ83	L6	True	1000.00	983.544860	98.4
11	JZ84	L7	True	2500.00	2553.610487	102.1
12	JZ85	L8	True	5000.00	5015.106890	100.3
13	JZ86	L9	True	10000.00	9896.163222	99.0





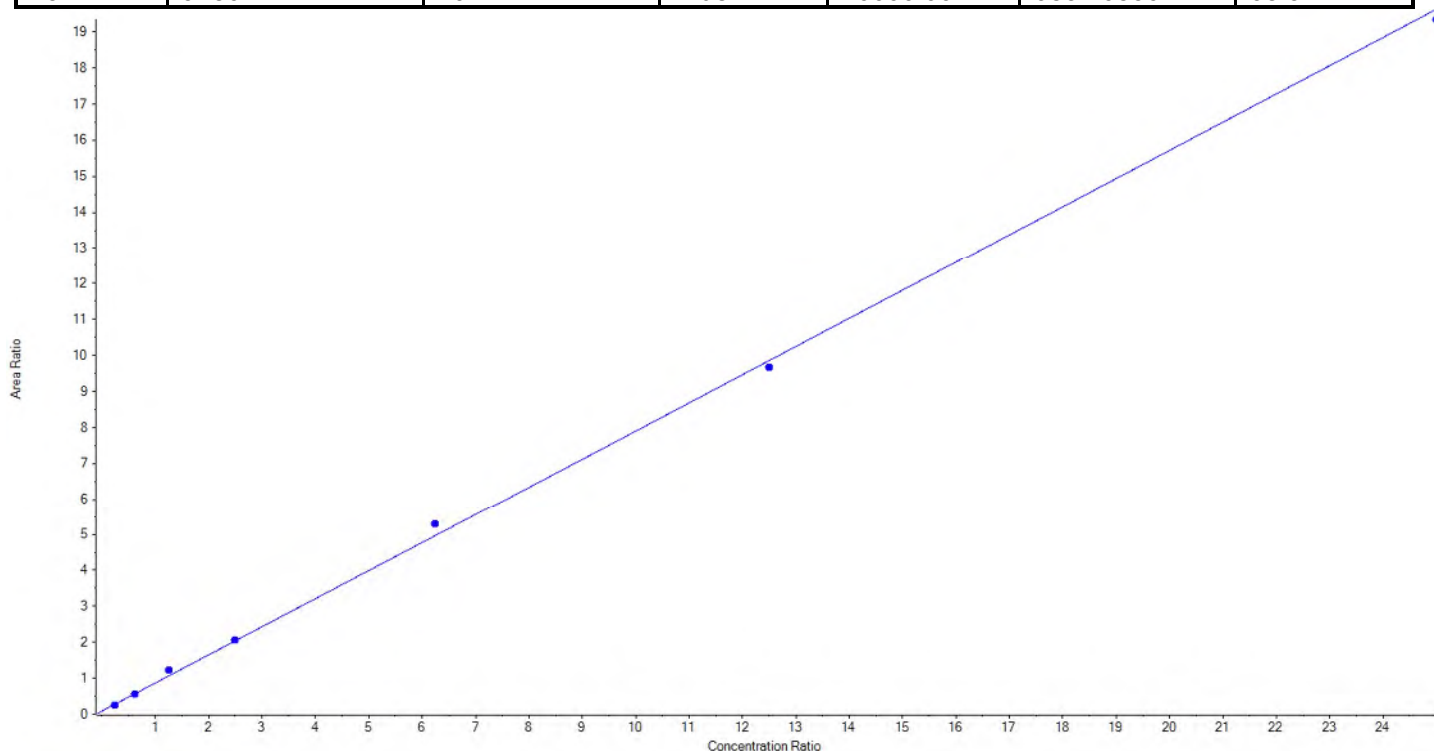
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NMeFOSAA_1	Data File	18-0523_18-0524.wiff
MRM Transition	570.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.78176 x + 0.08322$ (r = 0.99894) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	80.154543	80.2
8	JZ81	L4	True	250.00	243.751348	97.5
9	JZ82	L5	True	500.00	589.038442	117.8
10	JZ83	L6	True	1000.00	1012.438421	101.2
11	JZ84	L7	True	2500.00	2666.393934	106.7
12	JZ85	L8	True	5000.00	4905.539694	98.1
13	JZ86	L9	True	10000.00	9852.683617	98.5





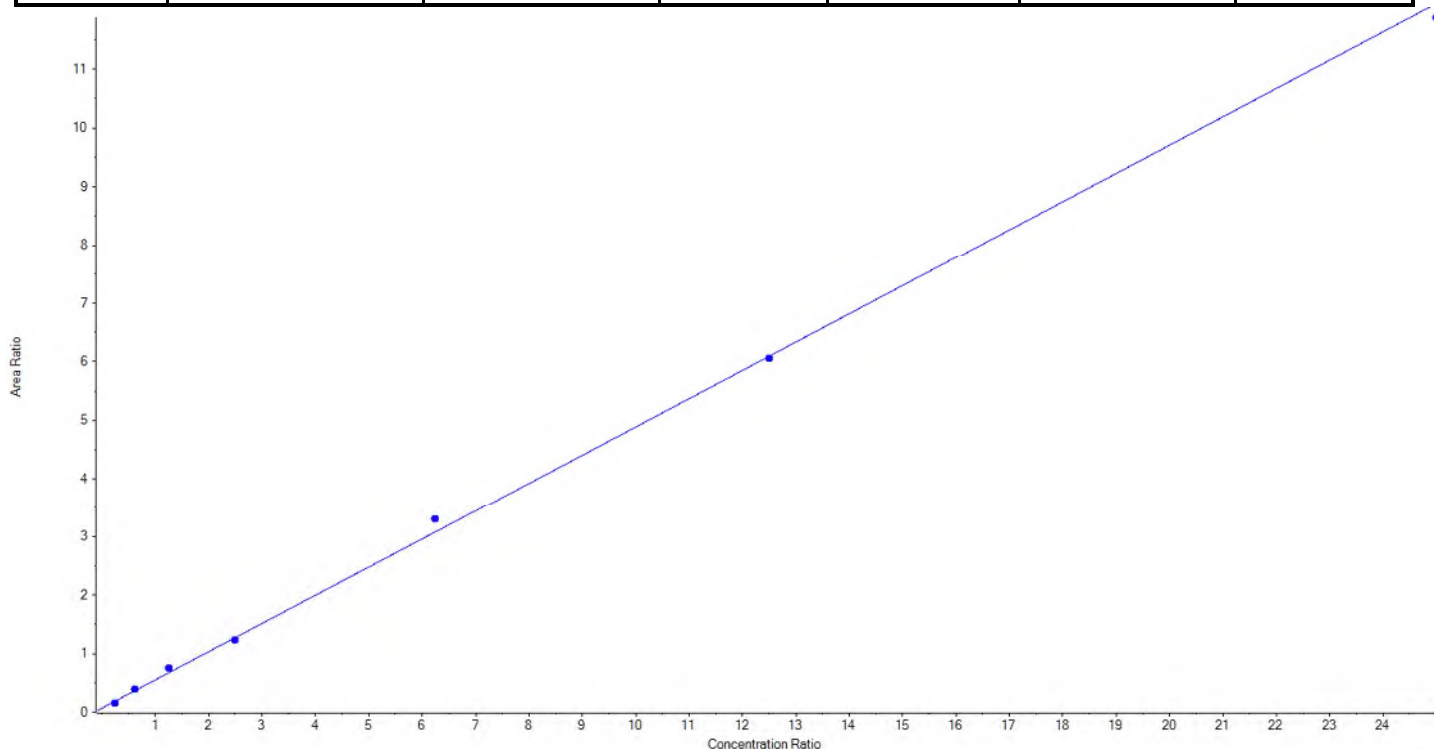
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NMeFOSAA_2	Data File	18-0523_18-0524.wiff
MRM Transition	570.0 / 512.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.48199x + 0.06767$ ($r = 0.99897$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	78.385205	78.4
8	JZ81	L4	True	250.00	263.534247	105.4
9	JZ82	L5	True	500.00	568.791985	113.8
10	JZ83	L6	True	1000.00	972.921249	97.3
11	JZ84	L7	True	2500.00	2691.056234	107.6
12	JZ85	L8	True	5000.00	4975.521389	99.5
13	JZ86	L9	True	10000.00	9799.789690	98.0





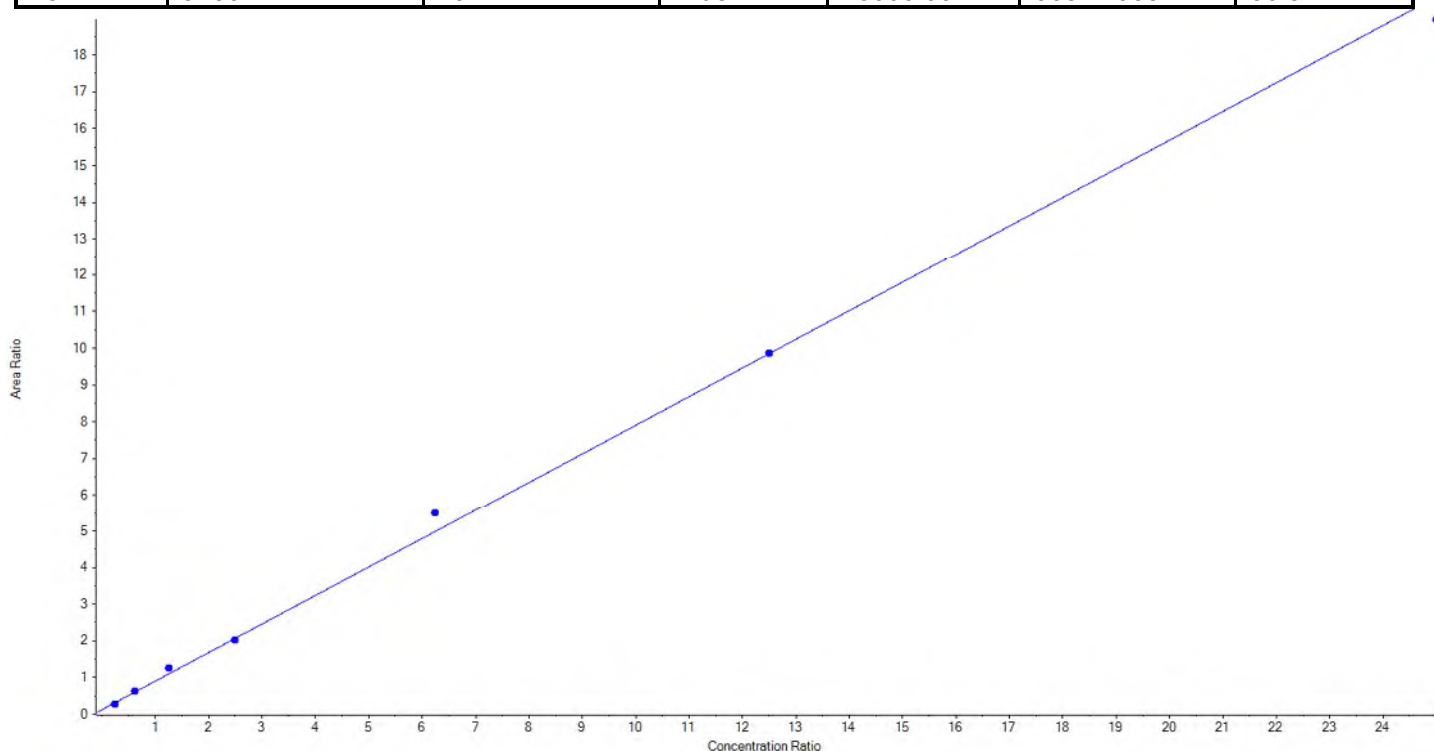
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NEtFOSAA_1	Data File	18-0523_18-0524.wiff
MRM Transition	584.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.77845x + 0.12055$ ($r = 0.99824$) (weighting: $1/x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	74.556536	74.6
8	JZ81	L4	True	250.00	256.120459	102.5
9	JZ82	L5	True	500.00	586.592707	117.3
10	JZ83	L6	True	1000.00	983.685035	98.4
11	JZ84	L7	True	2500.00	2757.013442	110.3
12	JZ85	L8	True	5000.00	5010.737947	100.2
13	JZ86	L9	True	10000.00	9681.293874	96.8





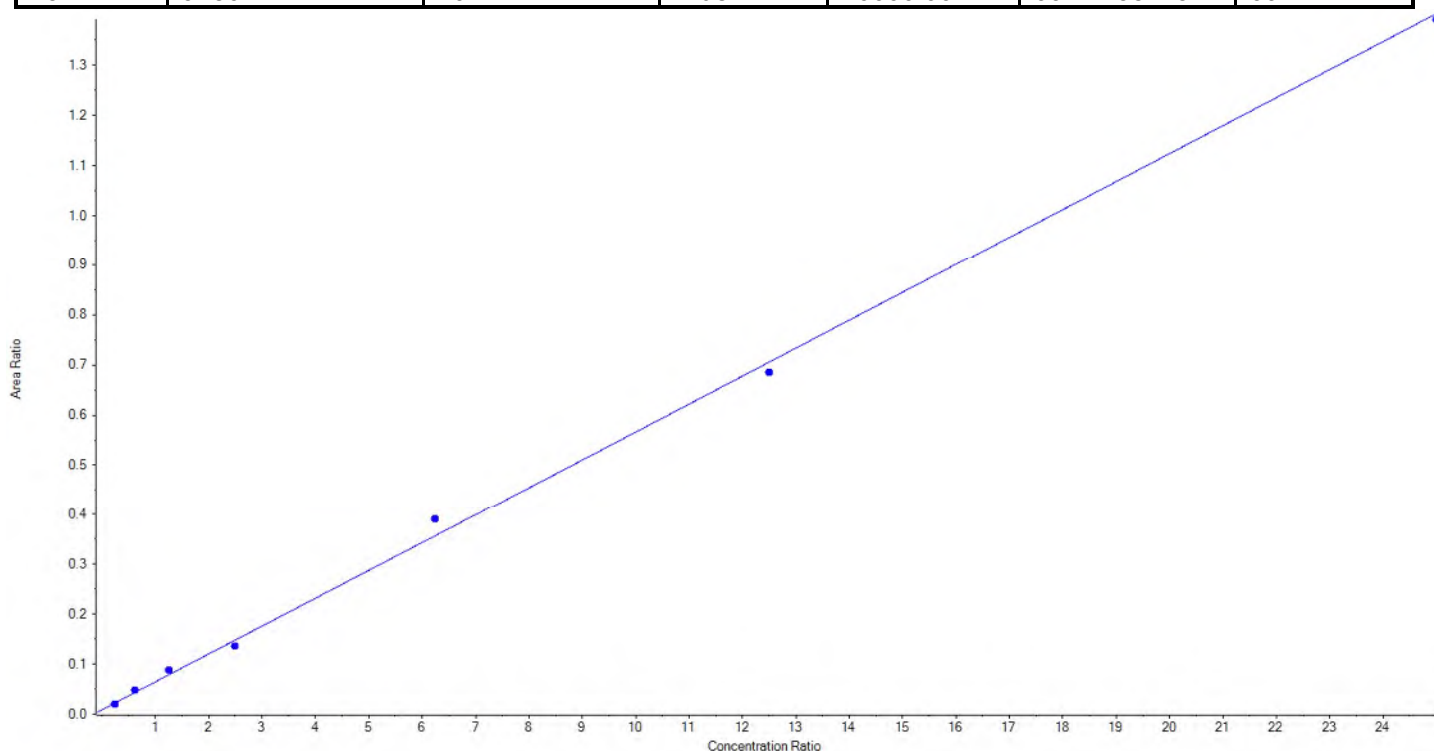
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	NEtFOSAA_2	Data File	18-0523_18-0524.wiff
MRM Transition	584.0 / 483.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 0.05576 x + 0.00866$ ($r = 0.99838$) (weighting: $1 / x$)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	77.938829	77.9
8	JZ81	L4	True	250.00	275.764969	110.3
9	JZ82	L5	True	500.00	570.352431	114.1
10	JZ83	L6	True	1000.00	917.201935	91.7
11	JZ84	L7	True	2500.00	2746.562540	109.9
12	JZ85	L8	True	5000.00	4848.020883	97.0
13	JZ86	L9	True	10000.00	9914.158413	99.1





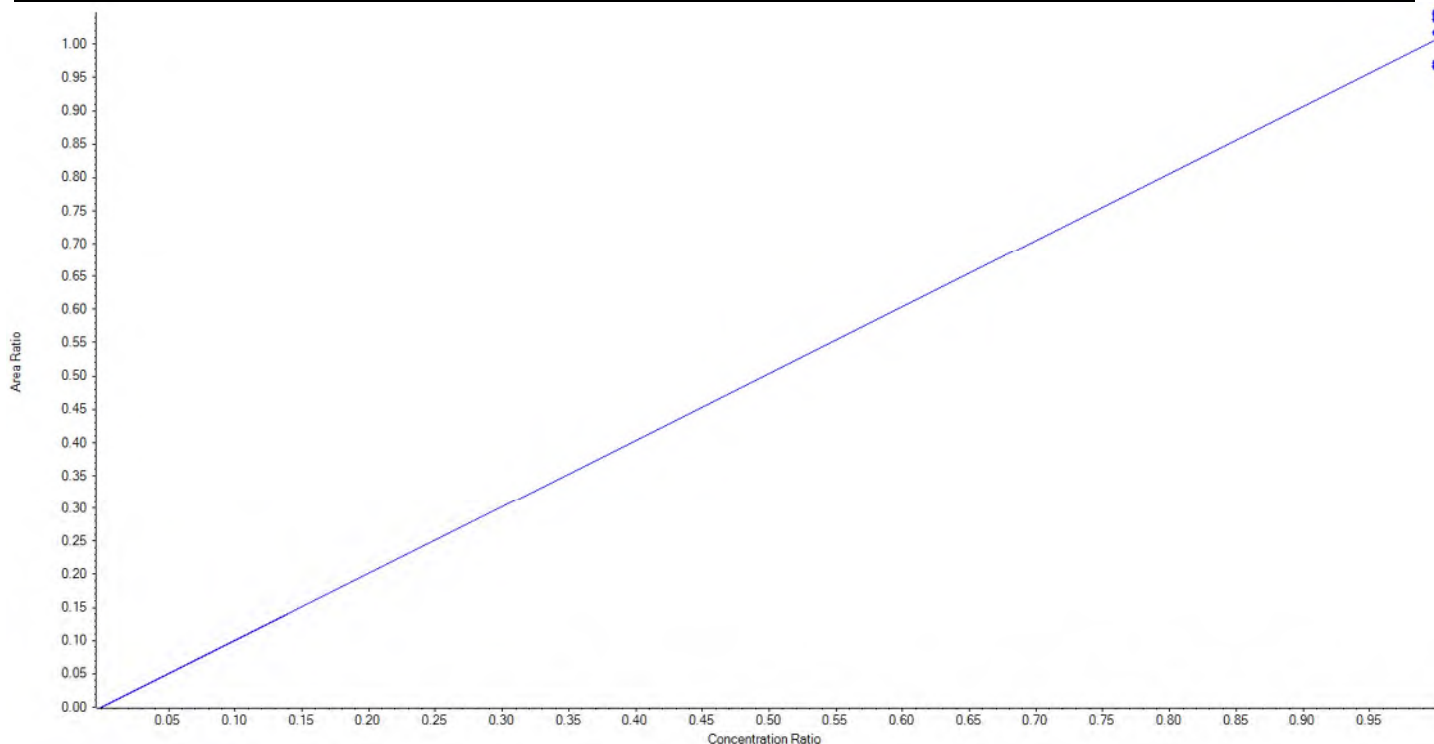
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	13C2-PFHxA	Data File	18-0523_18-0524.wiff
MRM Transition	315.0 / 270.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.00705 x$ (std. dev. = 0.03756) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	96.013933	96.0
8	JZ81	L4	True	100.00	103.627002	103.6
9	JZ82	L5	True	100.00	96.514953	96.5
10	JZ83	L6	True	100.00	100.958881	101.0
11	JZ84	L7	True	100.00	102.978900	103.0
12	JZ85	L8	True	100.00	103.982015	104.0
13	JZ86	L9	True	100.00	95.924316	95.9





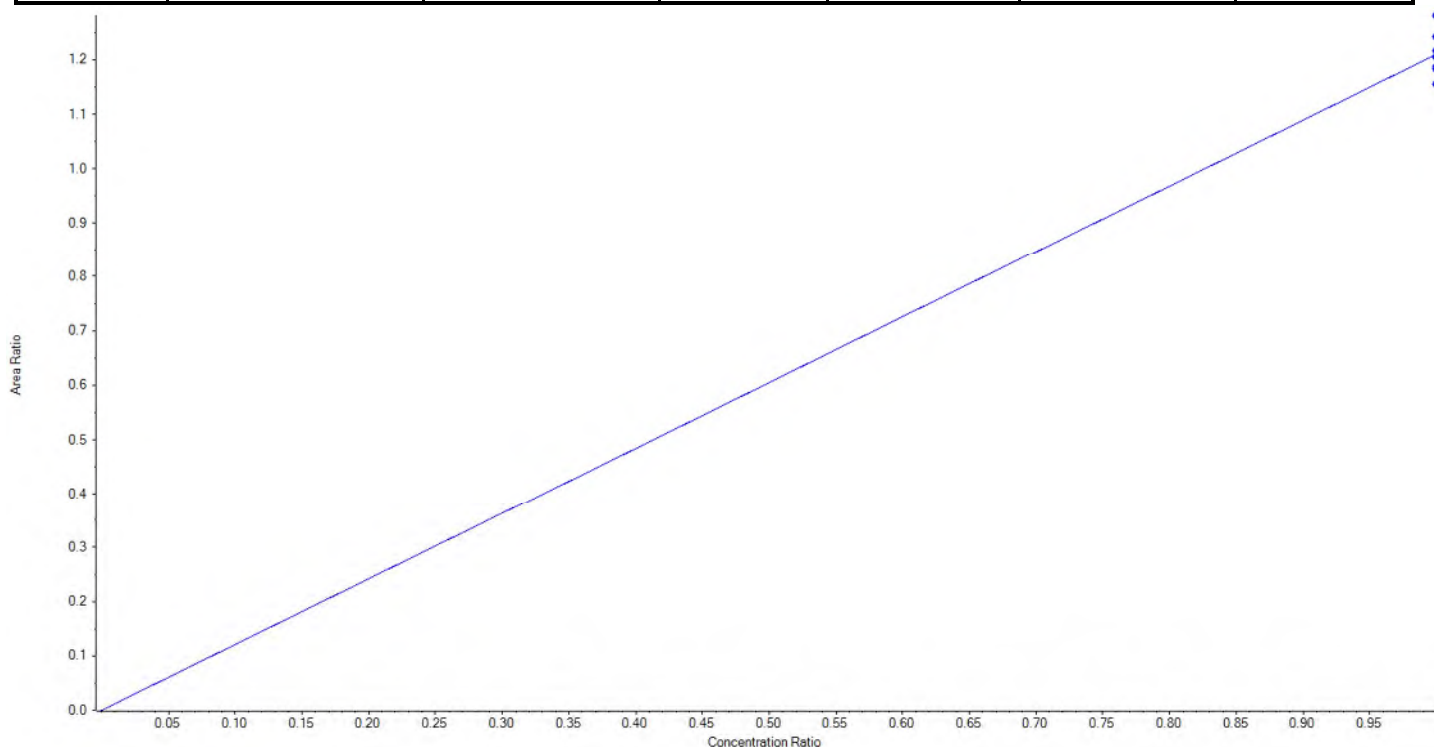
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	13C2-PFDA	Data File	18-0523_18-0524.wiff
MRM Transition	515.0 / 470.0	Result Table	18-0523_18-0524_DW
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.20987 x$ (std. dev. = 0.04118) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	100.00	95.538909	95.5
8	JZ81	L4	True	100.00	99.521034	99.5
9	JZ82	L5	True	100.00	98.118355	98.1
10	JZ83	L6	True	100.00	100.549473	100.6
11	JZ84	L7	True	100.00	97.842212	97.8
12	JZ85	L8	True	100.00	105.849909	105.9
13	JZ86	L9	True	100.00	102.580107	102.6





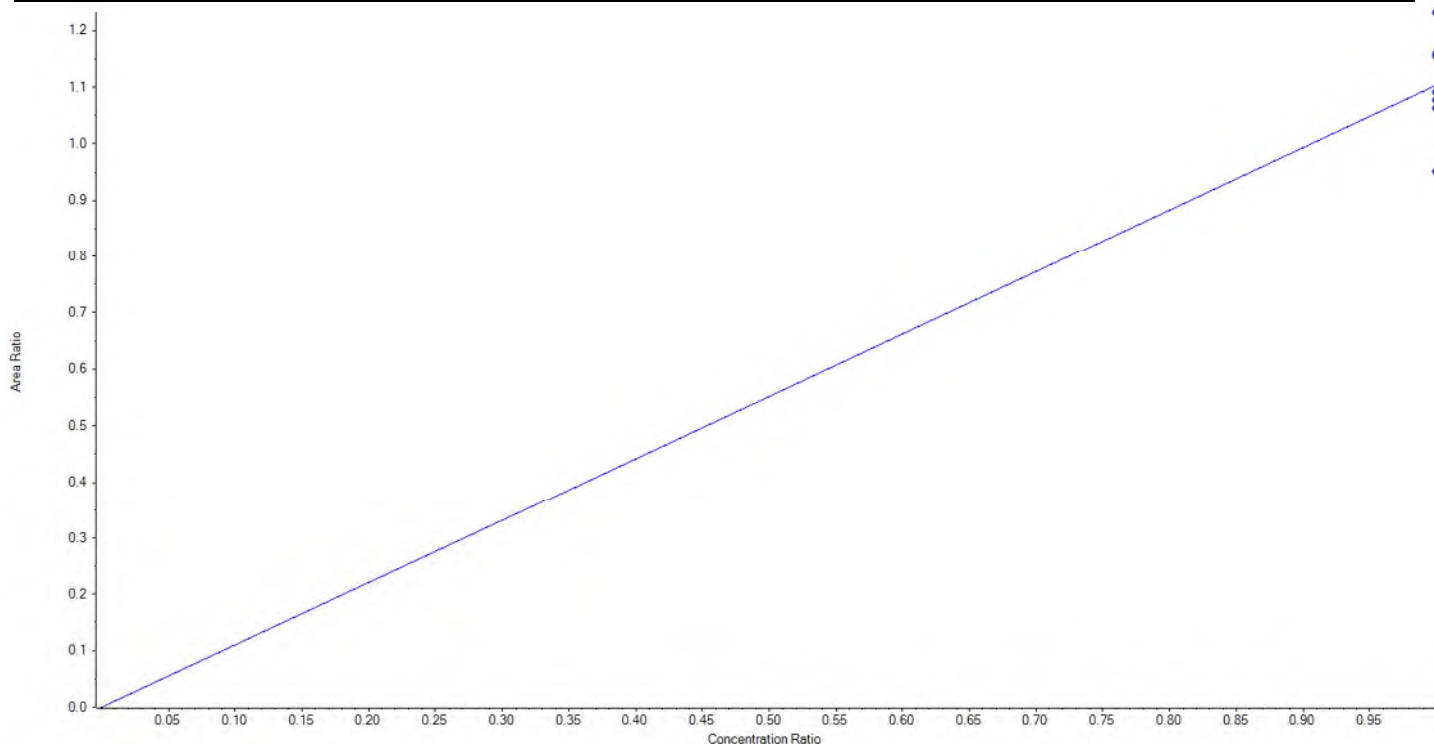
Calibration Summary Report

Created with Analyst Reporter
Printed: 27/08/2018 9:29:53 AM

Analyte Name	d5-EtFOSAA	Data File	18-0523_18-0524.wiff
MRM Transition	589.0 / 419.0	Result Table	18-0523_18-0524_DW
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	8/25/2018 1:56:55 PM	Acquisition Method	5-0371.dam

Regression Equation: $y = 1.10375 x$ (std. dev. = 0.08941) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
7	JZ80	L3	True	400.00	446.271648	111.6
8	JZ81	L4	True	400.00	390.483250	97.6
9	JZ82	L5	True	400.00	420.220929	105.1
10	JZ83	L6	True	400.00	418.323334	104.6
11	JZ84	L7	True	400.00	384.880668	96.2
12	JZ85	L8	True	400.00	395.250915	98.8
13	JZ86	L9	True	400.00	344.569256	86.1



Sample Name	JZ80	Injection Vial	7
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:23:46	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.335	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.068	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.027	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.307	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.062	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.333	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.177	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.055	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.067	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.156	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.039	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.676	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.70	NEtFOSAA	0.074	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ81	Injection Vial	8
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:32:41	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.285	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.274	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.065	0.066	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.311	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.192	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.041	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.057	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.162	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.061	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.688	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.076	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.37		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ82	Injection Vial	9
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:41:37	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.079	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.292	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.069	0.066	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.308	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.187	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.051	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.158	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.062	0.064	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.610	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.37		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ83	Injection Vial	10
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:50:33	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.072	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.024	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.286	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.064	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.323	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.201	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.049	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.601	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.067	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ84	Injection Vial	11
Sample ID	L7	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T14:59:30	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.297	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.081	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.021	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.351	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.066	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.308	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.184	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.048	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.625	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.071	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ85	Injection Vial	12
Sample ID	L8	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:08:27	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.305	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.077	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.022	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.287	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.300	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.195	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.047	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.167	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.066	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.627	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.069	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	JZ86	Injection Vial	13
Sample ID	L9	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:17:23	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.299	0.302	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.077	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.022	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.294	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.067	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.318	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.183	0.188	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.048	0.052	ü
PFDaA_1	613.0 / 569.0	3.98	PFDaA			
PFDaA_2	613.0 / 319.0	3.98	PFDaA	0.163	0.162	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.047	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.614	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.073	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.68		N/A	N/A	ü

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	797.074022	885.00	90.06
PFBS_2	298.9 / 99.0	1.51	793.065794	885.00	89.61
PFHxA_1	313.0 / 269.0	1.82	940.533648	1000.00	94.05
PFHxA_2	313.0 / 119.0	1.82	966.033599	1000.00	96.60
PFHpA_1	363.0 / 319.0	2.22	959.600146	1000.00	95.96
PFHpA_2	363.0 / 169.0	2.22	870.420290	1000.00	87.04
PFHxS_1	399.0 / 80.0	2.24	884.427438	912.00	96.98
PFHxS_2	399.0 / 99.0	2.24	841.940832	912.00	92.32
PFOA_1	413.0 / 369.0	2.62	952.372855	1000.00	95.24
PFOA_2	413.0 / 169.0	2.62	994.458678	1000.00	99.45
PFNA_1	463.0 / 419.0	3.01	945.616371	1000.00	94.56
PFNA_2	463.0 / 219.0	3.01	955.308722	1000.00	95.53
PFOS_1	499.0 / 80.0	3.01	824.131581	925.60	89.04
PFOS_2	499.0 / 99.0	3.01	975.327902	925.60	105.37
PFDA_1	513.0 / 469.0	3.36	987.499696	1000.00	98.75
PFDA_2	513.0 / 219.0	3.36	1066.460729	1000.00	106.65
PFUnA_1	563.0 / 519.0	3.69	934.093198	1000.00	93.41
PFUnA_2	563.0 / 269.0	3.68	977.131579	1000.00	97.71
PFDoA_1	613.0 / 569.0	3.96	947.037930	1000.00	94.70
PFDoA_2	613.0 / 319.0	3.96	903.988681	1000.00	90.40
PFTTrDA_1	663.0 / 619.0	4.21	904.880875	1000.00	90.49
PFTTrDA_2	663.0 / 169.0	4.21	964.673110	1000.00	96.47
PFTeDA_1	713.0 / 669.0	4.42	915.532982	1000.00	91.55
PFTeDA_2	713.0 / 169.0	4.42	927.497543	1000.00	92.75
NMeFOSAA_1	570.0 / 419.0	3.51	1261.665907	1000.00	126.17
NMeFOSAA_2	570.0 / 512.0	3.51	1165.317395	1000.00	116.53
NEtFOSAA_1	584.0 / 419.0	3.67	1256.811186	1000.00	125.68
NEtFOSAA_2	584.0 / 483.0	3.67	1070.510408	1000.00	107.05
13C2-PFHxA	315.0 / 270.0	1.81	96.761315	100.00	96.76
13C2-PFDA	515.0 / 470.0	3.35	96.636437	100.00	96.64
d5-EtFOSAA	589.0 / 419.0	3.66	417.604484	400.00	104.40

Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	239.950241	221.50	108.33
PFBS_2	298.9 / 99.0	1.51	233.621345	221.50	105.47
PFHxA_1	313.0 / 269.0	1.82	251.646105	250.00	100.66
PFHxA_2	313.0 / 119.0	1.82	242.558748	250.00	97.02
PFHpA_1	363.0 / 319.0	2.22	268.139624	250.00	107.26
PFHpA_2	363.0 / 169.0	2.22	267.930538	250.00	107.17
PFHxS_1	399.0 / 80.0	2.24	243.758596	228.00	106.91
PFHxS_2	399.0 / 99.0	2.24	255.166749	228.00	111.92
PFOA_1	413.0 / 369.0	2.62	270.327682	250.00	108.13
PFOA_2	413.0 / 169.0	2.62	307.836766	250.00	123.13
PFNA_1	463.0 / 419.0	3.01	270.767595	250.00	108.31
PFNA_2	463.0 / 219.0	3.01	279.989383	250.00	112.00
PFOS_1	499.0 / 80.0	3.01	236.999632	231.50	102.38
PFOS_2	499.0 / 99.0	3.01	279.663105	231.50	120.80
PFDA_1	513.0 / 469.0	3.36	274.318272	250.00	109.73
PFDA_2	513.0 / 219.0	3.36	303.504280	250.00	121.40
PFUnA_1	563.0 / 519.0	3.69	261.203998	250.00	104.48
PFUnA_2	563.0 / 269.0	3.69	249.881604	250.00	99.95
PFDoA_1	613.0 / 569.0	3.96	279.847560	250.00	111.94
PFDoA_2	613.0 / 319.0	3.96	270.149649	250.00	108.06
PFTTrDA_1	663.0 / 619.0	4.21	256.739036	250.00	102.70
PFTTrDA_2	663.0 / 169.0	4.21	252.336198	250.00	100.93
PFTeDA_1	713.0 / 669.0	4.42	262.282369	250.00	104.91
PFTeDA_2	713.0 / 169.0	4.42	300.630209	250.00	120.25
NMeFOSAA_1	570.0 / 419.0	3.51	266.708769	250.00	106.68
NMeFOSAA_2	570.0 / 512.0	3.51	191.120599	250.00	76.45
NEtFOSAA_1	584.0 / 419.0	3.67	227.831121	250.00	91.13
NEtFOSAA_2	584.0 / 483.0	3.68	301.995474	250.00	120.80
13C2-PFHxA	315.0 / 270.0	1.81	98.472326	100.00	98.47
13C2-PFDA	515.0 / 470.0	3.35	104.098126	100.00	104.10
d5-EtFOSAA	589.0 / 419.0	3.67	387.803773	400.00	96.95

Sample Name	JZ77 ICC	Injection Vial	15
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:35:16	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.299	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.078	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.021	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.283	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.316	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.222	0.188	ü
PFDA_1	513.0 / 469.0	3.36	PFDA			
PFDA_2	513.0 / 219.0	3.36	PFDA	0.048	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.68	PFUnA	0.052	0.052	ü
PFDaA_1	613.0 / 569.0	3.96	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.156	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.068	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.048	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.51	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.577	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.67	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.67	NEtFOSAA	0.062	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.66		N/A	N/A	ü

Sample Name	JZ81 CCV	Injection Vial	22
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:37:51	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.295	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.071	0.075	ü
PFHpA_1	363.0 / 319.0	2.22	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.025	0.024	ü
PFHxS_1	399.0 / 80.0	2.24	PFHxS			
PFHxS_2	399.0 / 99.0	2.24	PFHxS	0.310	0.299	ü
PFOA_1	413.0 / 369.0	2.62	PFOA			
PFOA_2	413.0 / 169.0	2.62	PFOA	0.074	0.066	ü
PFNA_1	463.0 / 419.0	3.01	PFNA			
PFNA_2	463.0 / 219.0	3.01	PFNA	0.325	0.315	ü
PFOS_1	499.0 / 80.0	3.01	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.222	0.188	ü
PFDA_1	513.0 / 469.0	3.36	PFDA			
PFDA_2	513.0 / 219.0	3.36	PFDA	0.052	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.053	0.052	ü
PFDaA_1	613.0 / 569.0	3.96	PFDaA			
PFDaA_2	613.0 / 319.0	3.96	PFDaA	0.155	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.064	0.064	ü
PFTeDA_1	713.0 / 669.0	4.42	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.42	PFTeDA	0.053	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.51	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.51	NMeFOSAA	0.493	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.67	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.090	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.35		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	KZ08 IB	Injection Vial	14
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:26:21	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	CR649PB-FS(0)	Injection Vial	17
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T15:53:09	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	CR650LCS-FS(0)	Injection Vial	18
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:02:04	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.300	0.302	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.079	0.075	ü
PFHpA_1	363.0 / 319.0	2.23	PFHpA			
PFHpA_2	363.0 / 169.0	2.22	PFHpA	0.024	0.024	ü
PFHxS_1	399.0 / 80.0	2.25	PFHxS			
PFHxS_2	399.0 / 99.0	2.25	PFHxS	0.285	0.299	ü
PFOA_1	413.0 / 369.0	2.63	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.066	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.317	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.207	0.188	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.047	0.052	ü
PFDaA_1	613.0 / 569.0	3.97	PFDaA			
PFDaA_2	613.0 / 319.0	3.97	PFDaA	0.159	0.162	ü
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.063	0.064	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.049	0.047	ü
NMeFOSAA_1	570.0 / 419.0	3.52	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.52	NMeFOSAA	0.554	0.635	ü
NEtFOSAA_1	584.0 / 419.0	3.68	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.061	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	J7566-FS(0)	Injection Vial	19
Sample ID	JAX-RES-08212018-0945-11	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:10:59	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTTrDA_1	663.0 / 619.0	N/A	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	PFTTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	J7568-FS(0)	Injection Vial	20
Sample ID	JAX-RES-08212018-1130-10	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:19:57	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

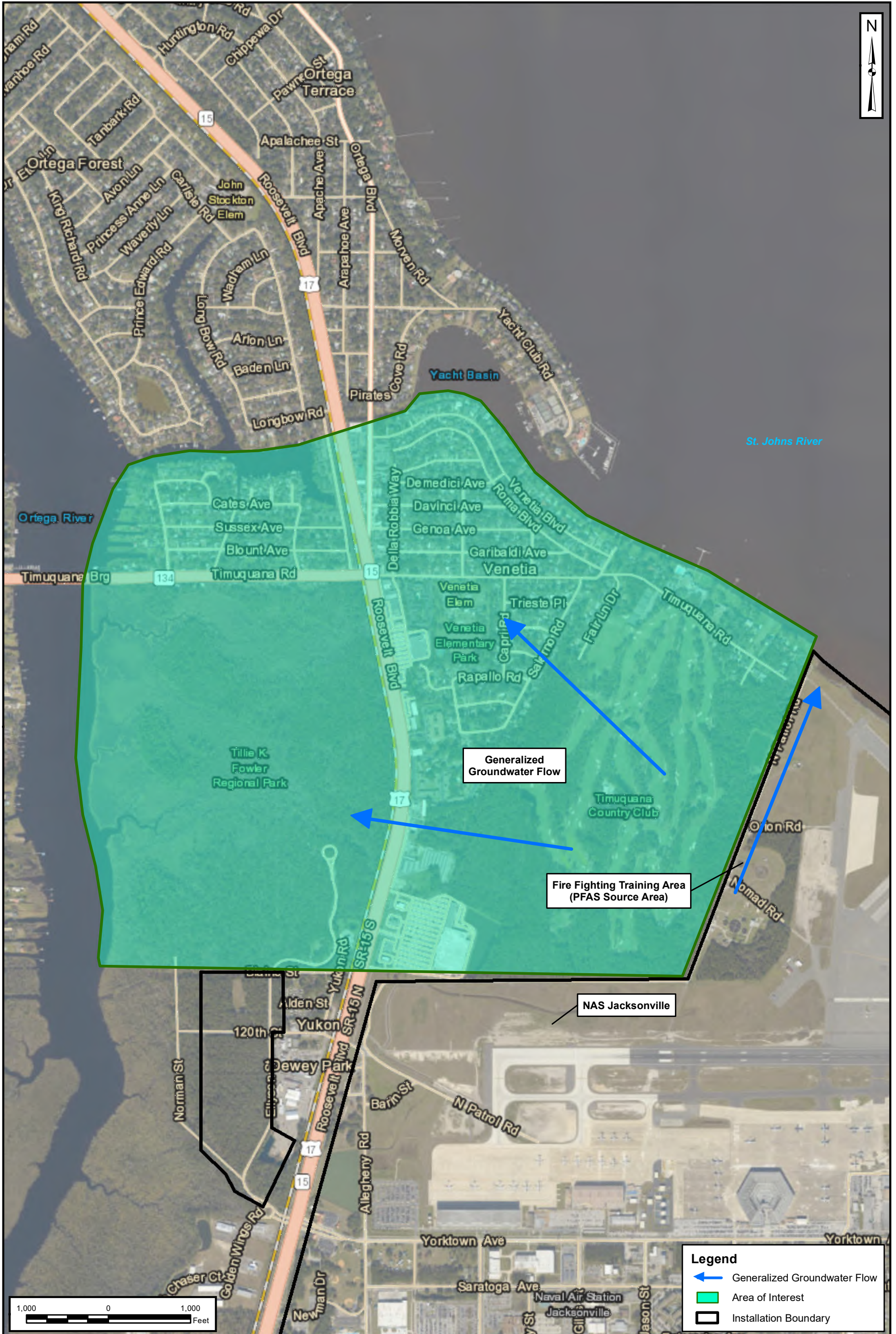
Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.01	PFOS	0.207	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü

Sample Name	J7570-FS(0)	Injection Vial	21
Sample ID	JAX-RES-08212018-1330-36	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	2018-08-25T16:28:54	Data File	18-0523_18-0524.wiff
Acquisition Method	5-0371.dam	Result Table	18-0523_18-0524_DW
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	PFBS			
PFBS_2	298.9 / 99.0	N/A	PFBS	N/A	0.302	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.075	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.024	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.299	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.066	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.315	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.271	0.188	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.052	ü
PFDaA_1	613.0 / 569.0	N/A	PFDaA			
PFDaA_2	613.0 / 319.0	N/A	PFDaA	N/A	0.162	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.064	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.047	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.635	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.072	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.36		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.67		N/A	N/A	ü



Legend	
	Generalized Groundwater Flow
	Area of Interest
	Installation Boundary



AREA OF INTEREST FOR PUBLIC/PRIVATE SHALLOW DRINKING WATER WELL SAMPLING
 NAS JACKSONVILLE & SURROUNDING AREA
 JACKSONVILLE, FLORIDA

CTO	
DRAWN BY	DATE
J.MADDEN	01/16/19
CHECKED BY	DATE
M.GRZEGOREK	01/16/19
FIGURE NUMBER	
1-4	

