Navy_CLEAN_PFAS_FOIA_request_covers.indd

NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 18-0559

Naval Air Station Jacksonville
Jacksonville, Florida

July 2019

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

N00207_004563
JACKSONVILLE_NAS
SSIC 5000-33c

LABORATORY DATA PACKAGE 18-0559 NAS JACKSONVILLE FL

09/18/2018

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Approved for public release: distribution unlimited.

CTO-SE0375: Naval Air Station Jacksonville
Project No 100119154-SE0375
PFAS by DoD QSM 5.1 Table B-15

SD

Batch 18-0559

Package DP-18-0266

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

Submitted by:
Battelle Norwell Operations
141 Longwater Drive Suite 202
Norwell, MA 02061

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CTO-SE0375: Naval Air Station Jacksonville
Project No 100119154-SE0375
PFAS by DoD QSM 5.1 Table B-15

SD

Batch 18-0559

Package DP-18-0266

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: Robert Lizotte, Jr. 2018.09.18 16:57:38 -04'00'

QC Chemist Approval: Digitally signed by devinec@battelle.org DN: cn=devinec@battelle.org Date: 2018.09.19 13:43:54 -04'00'

Project Manager Approval:

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CTO-SE0375: Naval Air Station Jacksonville
Project No 100119154-SE0375
PFAS by DoD QSM 5.1 Table B-15

SD

Batch 18-0559

Package DP-18-0266

1	***Work Plan*** Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.	1
2	***Tables*** Analytical Data Tables, Qualifier Definitions.	17
3	***Miscellaneous Documentation*** Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.	27
4	***Sample Preparation Records*** Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.	165
5	***Analytical Calibrations*** Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check.	181
6	***Analytical Data*** Raw Data Quantification Reports.	275
7	***Chromatograms*** Sample And Standard Chromatograms.	316
8	***Unused Data***	NA

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Signature Page

Battelle 2018 (1 of 2)
Signature Page

Name (Printed)	Signature	Initials	Date
Jonathan Thorn	[signature]	JRT	4/4/2018
Robert Lizotte, Jr.	[signature]	BL	4.4.2018
FRANCO PALA	[signature]	[initials]	4.4.2018
Carla Devine	[signature]	CRD	4/4/18
Denise Schumitz	[signature]	DMS	4/4/18
Candice Pearson McCarty	[signature]	CSM	4/4/2018
Rich Rostucci	[signature]	RR	4/4/2018
Michael Meara	[signature]	[initials]	4/4/2018
Christie Usher	[signature]	CU	4/4/18
Kevin McInerney	[signature]	KM	4/4/18
Stephanie Schultz	[signature]	SAS	4/4/18
Jordan Tower	[signature]	JCT	4/4/18
KRISTEN NICHOLS	[signature]	KN	4/4/18
Chimiao H Brown	[signature]	CB	4/4/18
Matt Schumitz	[signature]	MS	4-4-18
Sam Guimaraes	[signature]	SG	4-4-18
Lauren Griffith	[signature]	LMG	4.4.18

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Signature Page

Battelle 2018 (2 of 2)
Signature Page

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

Sample Summary

Client: Tetra Tech Inc.
SDG: 18-0559
Project/Site: Naval Air Station (NAS) Jacksonville
CTO: SE0375

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Receipt Date
CR815PB-FS	Procedural Blank	SEDIMENT	9/17/2018	9/17/2018
CR816LCS-FS	180507-02: Ottawa Sand	SEDIMENT	9/17/2018	9/17/2018
J7781-FS	JAX-TCC-SD02-09112018	SD	9/11/2018	9/12/2018
J7782-FS	JAX-TCC-SD03-09112018	SD	9/11/2018	9/12/2018
J7782MS-FS	JAX-TCC-SD03-09112018	SD	9/11/2018	9/12/2018
J7782MSD-FS	JAX-TCC-SD03-09112018	SD	9/11/2018	9/12/2018
J7783-FS	JAX-TCC-SD04-09112018	SD	9/11/2018	9/12/2018

Work Plan

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WORK/QUALITY ASSURANCE PROJECT PLAN

1.0 GENERAL PROJECT INFORMATION

Project Title:	Sediment PFAS Analysis
Project Number:	100119154-SE0375
Client:	Tetra Tech 661 Anderson Drive Foster Plaza 7 Pittsburgh, PA 15220 USA
Client Contact Information:	Mark Peterson NA (904) 636-6125(V) (904) 636-6165(F) mark.peterson@tetratech.com
Effective Date of QAPP:	5/27/2018
Version Number:	100119154-SE0375(S)-02
Project Manager:	Thorn, Jonathan
Laboratory Task Manager:	Thorn, Jonathan
Deliverable Due Date:	6/8/2018

2.0 SCOPE OF WORK

Overview:	PFAS analysis of sediments collected at NAS Jacksonville.
Matrix:	Soil/Sediment

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 in refrigerator.
Sub_Sampling:	None
Procedures:	NA
Contact:	NA
Comment:	NA
Archiving:	Dispose of remaining samples 6 months after delivery of final data. Notify client prior to disposal of samples.
Disposal:	Dispose of samples in the appropriate waste stream.

2.1.2 Sample Preparation

4 sediments and 1 field reagent blank.

Samples Expected:	Samples Per Batch:	Batches Expected:
4	20	1

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	Yes	180507-02: Ottawa Sand Lot:1DJ0861	
MS	Spiked field sample for determining method accuracy in the presence of matrix.	1 per batch	--	NA	background sample will be identified on the COC
MSD	Spiked field sample for determining method accuracy and precision in the presence of matrix.	1 per batch	--	NA	background sample will be identified on the COC

2.1.3 Extraction/Preparation

2.1.3.1 Extraction

SOP No.-Rev: **5-370-06**

SOP Title: *Extraction of Poly and Perfluoroalkyl Substances from Environmental Matrices*

Sample Size: 2 g

SIS and LCS/MS Compounds: Defined in Table 2.

Deviations: None

Comments: • FRB samples will only be extracted and analyzed if the associated field samples have results above the LOQ.

Table 2: SIS and LCS/MS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	JR04 SIS	~ 1.00 ng	50 uL	NA

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WORK/QUALITY ASSURANCE PROJECT PLAN

Standard Type	Standard Contents		Spike Amount (ng)	Volume (uL)	Comment
PFAS - DOD Second Source LCS/MS Solution	JP49	LCS/MS	~ 50 ng	1000 uL	MS/MSD samples
PFAS - DOD Second Source LCS/MS Solution	JP49	LCS/MS	~ 20.0 ng	400 uL	LCS sample

2.1.3.2 Cleanup

None.

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 500

Table 3: RIS Spiking Level

Standard Type	Standard Contents		Spike Amount (ng)	Volume (uL)	Comment
PFAS - DoD Internal Standard Spiking Solution	JW02	RIS	~ 0.050 ng	25 uL	NA

2.1.4 Instrumental Analysis

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

1) SOP_No-Rev: **5-369-06**

SOP_Title: *Analysis of Perfluoroalkyl Substances in Environmental Samples by Liquid Chromatography and Tandem Mass Spectrometry (LC-MS/MS)*

Deviations: None

Comments: Follow QSM 5.1 Table B-15 requirements.

2.2. DELIVERABLES

Deliverables Due:	6/8/2018
LIMS Reports:	*No*
Histograms:	*No*
Excel Tables:	*Yes*
EICs:	*No*

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WORK/QUALITY ASSURANCE PROJECT PLAN

Chromatograms:	*No*
EDDs:	*Yes*
Comments:	• 14-day TAT • Level IV validation package, compliant with QSM Table B-15. • 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
Denise M. Schumitz	LC-MS/MS Analysis	NA
Matt D. Schumitz	Sample Custody	NA
Carla R. Devine	Quality Control Officer	NA
Zachary J. Willenberg	Quality Assurance Officer	NA

4.2 COMMUNICATION

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

5.0 SCHEDULE

The project schedule is presented in Table 5.

Table 5. Schedule of Laboratory Activities

Activity:	Start Date:	End Date:	TAT (days):	Comment:
Sample Receipt	05/25/2018	05/25/2018	0	NA
Sample Preparation	05/25/2018	05/30/2018	5	NA

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Activity:	Start Date:	End Date:	TAT (days):	Comment:
Instrument Analysis	05/30/2018	06/06/2018	7	NA
Quality Control Review	06/06/2018	06/07/2018	1	NA
Quality Assurance Review	06/07/2018	06/08/2018	1	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 are for full batch of 20 samples
Sample Preparation	8	1	8	Hours are for full batch of 20 samples
Instrument Analysis	8	1	8	Hours are for full batch of 20 samples
Quality Control Review	3	1	3	Hours are for full batch of 20 samples
Quality Assurance Review	1	1	1	Hours are for full batch of 20 samples

7.0 STAFF DEVELOPMENT

None anticipated

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 1: Target Samples

Shipment: **SHP-180525-01**

Status: Approved

Description: SEO 375

Range: J6243-J6244

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6243	FFTA-SD01-052418	05/24/2018 11:10 am	SD	F0117 (NA)			
2	J6244	FFTA-FD02-052418	05/24/2018 11:10 am	SD DUP	F0117 (NA)			

Shipment: **SHP-180823-02**

Status: Pending

Description: NAS JAX PFAS

Range: J7582-J7582

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J7582	JAX-TCC-SD01-08222018	08/22/2018 2:45 pm	SD	F0117 (NA)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name:	Master_369
SOP Reference:	5-369 - Analysis of Perfluoroalkyl Substances in Environmental Samples by Liquid Chromatography and Tandem Mass Spectrometry (LC-MS/MS)
Description:	PFAS by DoD QSM 5.1 Table B-15
Matrix:	S - Solid Samples, like soil or sediment, prepared and anlyzed under the same class of detection limits.
Detection Limit Study:	5-369
Instrument:	LC-MS/MS
MQO Criteria	Universal_LC
Standard Report:	Standard Result Report

Method Specific Reporting				Holding Times (days)		Data Flags	
Result Units:	ng/g	***Unit Conversion:***	(none)	***Sample:***	14	***DL_Flag:***	U
Weight Basis:	DRY	***Result Format:***	Fixed Digits	***Frozen:***	40	***RL_Flag:***	J
Standard Basis:	SIS	***# of Figures/Digits:***	2	***Extract:***	28	***PB_Flag:***	B
Oil Weight Basis:	No	***Oil Weight Source:***	Oil Weight			***DIL_Flag:***	D
U-Value Substition:	U-Flag=MD	***Histograms:***	No			***HT_Flag:***	T
ECD_Reporting:	No						

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Perfluoro-n-hexanoic acid	PFHxA	T		13C5-PFHxA	No	No
2	Perfluoro-n-heptanoic Acid	PFHpA	T		13C4-PFHpA	No	No
3	Perfluoro-n-octanoic Acid	PFOA	T		13C8-PFOA	No	No
4	Perfluorononanoic Acid	PFNA	T		13C9-PFNA	No	No
5	Perfluoro-n-decanoic Acid	PFDA	T		13C6-PFDA	No	No
6	Perfluoro-n-undecanoic acid	PFUnA	T		13C7-PFUnA	No	No
7	Perfluoro-n-dodecanoic acid	PFDoA	T		13C2-PFDoA	No	No
8	Perfluoro-n-tridecanoic acid	PFTrDA	T		13C2-PFTeDA	No	No
9	Perfluoro-n-tetradecanoic acid	PFTeDA	T		13C2-PFTeDA	No	No
10	N-methylperfluoro-1-octanesulfonamidoacetic acid	NMeFOSAA	T		N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid	No	No
11	N-ethylperfluoro-octanesulfonamidoacetic acid	NEtFOSAA	T		N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid	No	No
12	Perfluoro-1-butanesulfonate	PFBS	T		13C3-PFBS	No	No
13	Perfluoro-1-hexanesulfonate	PFHxS	T		13C3-PFHxS	No	No
14	Perfluoro-1-octanesulfonate	PFOS	T		13C8-PFOS	No	No
1	13C5-PFHxA	13C5-PFHxA	SIS	13C2-PFOA		No	No
2	13C4-PFHpA	13C4-PFHpA	SIS	13C2-PFOA		No	No
3	13C8-PFOA	13C8-PFOA	SIS	13C2-PFOA		No	No

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_369

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
4	13C9-PFNA	13C9-PFNA	SIS	13C2-PFOA		No	No
5	13C6-PFDA	13C6-PFDA	SIS	13C2-PFDA		No	No
6	13C7-PFUnA	13C7-PFUnA	SIS	13C2-PFDA		No	No
7	13C2-PFDoA	13C2-PFDoA	SIS	13C2-PFDA		No	No
8	13C2-PFTeDA	13C2-PFTeDA	SIS	13C2-PFDA		No	No
9	N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid	d3-MeFOSAA	SIS	13C4-PFOS		No	No
10	N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid	d5-EtFOSAA	SIS	13C4-PFOS		No	No
11	13C3-PFBS	13C3-PFBS	SIS	13C4-PFOS		No	No
12	13C3-PFHxS	13C3-PFHxS	SIS	13C4-PFOS		No	No
13	13C8-PFOS	13C8-PFOS	SIS	13C4-PFOS		No	No

Total Analytes: 27

Subtract Peaks:

None

Sum Peaks:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_369

ICAL Acceptance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.99	N	5	N	y = Bx + C
Quadratic	NA	NA	0.99	N	6	N	y = Ax^2 + Bx + C

Continuing Calibration Verification Criteria:

CCV Name: 5-369

Frequency Hrs:		Mean PD(%):		Individual PD(%):		RIS/SIS RT Window (min):		Area Limit Low(%):	Area Limit High(%):		Comment:
12	(N)	30	(N)	30	(N)	0.04	(N)	-50	100	(N)	NA

Independent Calibration Verification:

ICC Name: 5-369

Mean PD Limit(%):		Ind. PD Limit(%):		RIS/SIS Window Limit (Secs):		Area Limit High(%):	Area Limit Low(%):		Comment:
30	(N)	30	(N)	0.04	(N)	-50	100	(N)	NA

Mass Discrimination Criteria:

None

Degredation Check Criteria:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

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

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application	***Universal_LC***		
MQO:	**Acceptance Criteria**	**Qual:**	**Corrective Action:**
Analytical Triplicate Precision	Organics results less than 30% Relative Standard Deviation (RSD). Analyte concentration must be > 5x MDL. Organics Results in the Original is less than 5 times the MDL	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Surrogate Compound Recovery	Recovery results between 50% and 150%.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
Control Oil	RPD < 30% for at least 90% of analytes	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Instrument Calibration	5-369-6: R-squared greater than or equal to 0.990		Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Independent Calibration Check Solution	5-369-6: Individual PD less than or equal to 30%. Mean Percent Difference less than or equal to 30%.	N	Review with Project Manager; re-analyze or justify in project records.
Continuing Calibration Verification	5-369-6: Individual PD less than or equal to 30%. Mean Percent Difference less than or equal to 30%.	N	Review with Project Manager; re-analyze or justify in project records.

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ShpNo SHP-180913-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ Authorized ☐

Project Number: 112G0800J-SE0375 **Client:** Tetra Tech
Received by: Schumitz, Matt **Date/Time Received:** Wednesday, September 12, 2018 5:00 PM
No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier **Tracking Number:** 7827 3593 6708
COC Forms: ☑ Shipped with samples ☐ No Forms

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal	Container	Therm.	Temp C	Smps
1 of 1	Cooler	7827 3593 6708	Custody Seals	Intact	Intact	Therm_2	1.9	12

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): 1.9 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:** J7774 - J7785
Samples logged in by: Schumitz, Matt **Date/Time:** 09/12/2018 5:00 PM
Approved By: **Approved On:**
Authorized By: **Authorized On:**

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ShpNo SHP-180913-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: 112G0800J-SE0375 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, September 12, 2018 5:00 PM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J7774	JAX-TCC-EB02-09112018	09/11/18 12:55	09/13/18 8:54	2	QC	1.9	NA	NA	NA	R0119 (NA)			
J7775	JAX-TCC-MWC3-09112018	09/11/18 13:40	09/13/18 8:54	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7776	JAX-TCC-MWC3-09112018-FD	09/11/18 13:40	09/13/18 8:55	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7777	JAX-TCC-MWI2-09112018	09/11/18 14:00	09/13/18 8:55	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7778	JAX-TCC-MWB1-09112018	09/11/18 14:55	09/13/18 8:55	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7779	JAX-TCC-SW01-09112018	09/11/18 14:05	09/13/18 8:56	2	SW	1.9	NA	NA	NA	R0119 (NA)			
J7780	JAX-TCC-SW02-09112018	09/11/18 14:35	09/13/18 8:56	2	SW	1.9	NA	NA	NA	R0119 (NA)			
J7781	JAX-TCC-SD02-09112018	09/11/18 15:05	09/13/18 8:56	1	SD	1.9	NA	NA	NA	F0117 (NA)			
J7782	JAX-TCC-SD03-09112018	09/11/18 15:15	09/13/18 8:57	1	SD	1.9	NA	NA	NA	F0117 (NA)			
J7783	JAX-TCC-SD04-09112018	09/11/18 15:25	09/13/18 8:57	1	SD	1.9	NA	NA	NA	F0117 (NA)			
J7784	JAX-TCC-EB03-09112018	09/11/18 15:00	09/13/18 8:57	2	QC	1.9	NA	NA	NA	R0119 (NA)			
J7785	JAX-TCC-FRB-09112018	09/11/18 14:45	09/13/18 8:58	1	QC	1.9	NA	NA	NA	R0119 (NA)			

Total Samples: 12

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 3420 | PAGE 1 OF 1

PROJECT NO: 1126-08005-SE0525	FACILITY: JAX-TCC	PROJECT MANAGER Mark Patterson	PHONE NUMBER 9046366125	LABORATORY NAME AND CONTACT: Jon Thorn Battelle
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER Dave Sofka	PHONE NUMBER " " "	ADDRESS 141 Longwater Drive Suite 202
		CARRIER/WAYBILL NUMBER		CITY, STATE Norwell, MA 02061 (Jacksonville, FL)

STANDARD TAT ☐
RUSH TAT ☑ 5 day
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): P P
PRESERVATIVE USED: N/A N/A
TYPE OF ANALYSIS: PFAS 537

DATE (YEAR 2018)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS		COMMENTS
9/11	1255	JAX-TCC-EB02-09112018				QC	G	2	2	J7774
9/11	1340	JAX-TCC-MW03-09112018				GW	G	2	2	J7775
9/11	1340	JAX-TCC-MW03-09112018-FD				GW	G	2	2	J7776
9/11	1400	JAX-TCC-MW12-09112018				GW	G	2	2	J7777
9/11	1455	JAX-TCC-MW01-09112018				GW	G	2	2	J7778
9/11	1405	JAX-TCC-SW01-09112018				SW	G	2	2	J7779
9/11	1435	JAX-TCC-SW02-09112018	MS			SW	G	2	2	J7780
9/11	1505	JAX-TCC-SD02-09112018				SD	G	1	1	J7781
9/11	1515	JAX-TCC-SD03-09112018				SD	G	1	1	J7782
9/11	1525	JAX-TCC-SD04-09112018				SD	G	1	1	J7783
9/11	1500	JAX-TCC-EB03-09112018				QC	G	2	2	J7784
9/11	1445	JAX-TCC-FRB-09112018				QC	G	1	1	J7785

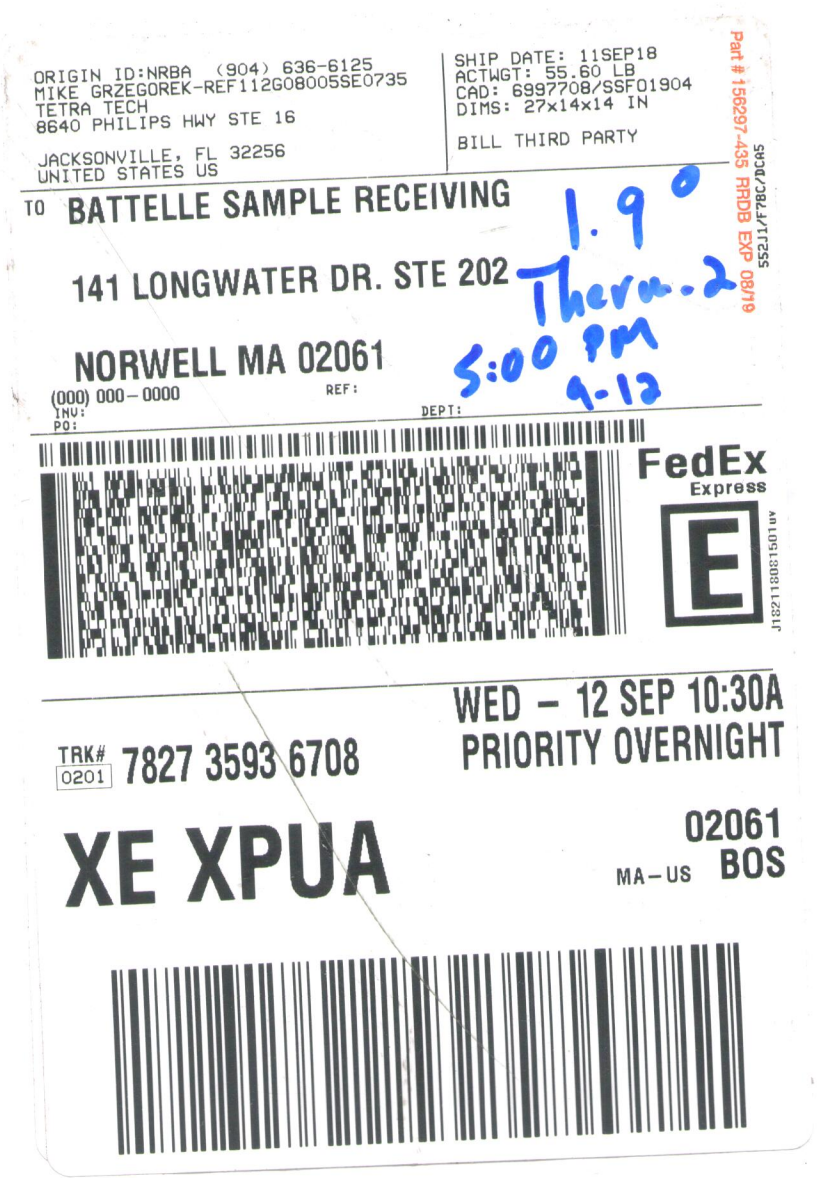
MS MG

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	9/11/2018	1630	1. RECEIVED BY FedEx		
2. RELINQUISHED BY			2. RECEIVED BY Battelle	9-12-18	5:00 PM
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001


ORIGIN ID:NRBA (904) 636-6125
MIKE GRZEGOREK-REF112G08005SE0735
TETRA TECH
8640 PHILIPS HWY STE 16
JACKSONVILLE, FL 32256
UNITED STATES US
SHIP DATE: 11SEP18
ACTWGT: 55.60 LB
CAD: 6997708/SSFO1904
DIMS: 27x14x14 IN
BILL THIRD PARTY
Part # 156297-435 RRDB EXP 08/19
55211/F78C/DC85
TO BATTELLE SAMPLE RECEIVING
141 LONGWATER DR. STE 202
NORWELL MA 02061
(000) 000-0000
INV:
PO:
REF:
DEPT:
1.9 0
Therm. 2
5:00 PM
9-12
FedEx
Express
J162118083501uv
TRK# 0201 7827 3593 6708
WED - 12 SEP 10:30A
PRIORITY OVERNIGHT
XE XPUA
02061
MA-US BOS

Data Tables

BATTELLE
It can be done

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

Client ID		JAX-TCC-SD02-09112018				
Battelle ID		J7781-FS				
Sample Type		SA				
Collection Date		09/11/2018				
Extraction Date		09/17/2018				
Analysis Date		09/17/2018				
Analytical Instrument		Sciex 5500 LC/MS/MS				
% Moisture		23.41				
Matrix		SD				
Sample Size		1.510				
Size Unit-Basis		g				
Units		ng/g_Wet		MDL	LOD	LOQ
PFHxA	307-24-4	1.32	U	0.44	1.32	6.62
PFHpA	375-85-9	1.32	U	0.58	1.32	6.62
PFOA	335-67-1	1.32	U	0.66	1.32	6.62
PFNA	375-95-1	1.32	U	0.57	1.32	6.62
PFDA	335-76-2	1.32	U	0.36	1.32	6.62
PFUnA	2058-94-8	1.32	U	0.54	1.32	6.62
PFDoA	307-55-1	0.66	U	0.32	0.66	6.62
PFTrDA	72629-94-8	1.32	U	0.37	1.32	6.62
PFTeDA	376-06-7	2.65	U	0.83	2.65	6.62
NMeFOSAA	2355-31-9	3.31	U	1.48	3.31	6.62
NEtFOSAA	2991-50-6	2.65	U	0.75	2.65	6.62
PFBS	375-73-5	1.32	U	0.48	1.32	6.62
PFHxS	355-46-4	0.66	U	0.29	0.66	6.62
PFOS	1763-23-1	0.68	J	0.36	1.32	6.62

Surrogate Recoveries (%)

13C5-PFHxA	92
13C4-PFHpA	91
13C8-PFOA	98
13C9-PFNA	104
13C6-PFDA	82
13C7-PFUnA	86
13C2-PFDoA	81
13C2-PFTeDA	85
d3-MeFOSAA	85
d5-EtFOSAA	123
13C3-PFBS	111
13C3-PFHxS	104
13C8-PFOS	105

BATTELLE
It can be done

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

Client ID		JAX-TCC-SD03-09112018			
Battelle ID		J7782-FS			
Sample Type		SA			
Collection Date		09/11/2018			
Extraction Date		09/17/2018			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		24.75			
Matrix		SD			
Sample Size		1.520			
Size Unit-Basis		g			
Units		ng/g_Wet	MDL	LOD	LOQ
PFHxA	307-24-4	1.32 U	0.43	1.32	6.58
PFHpA	375-85-9	1.32 U	0.58	1.32	6.58
PFOA	335-67-1	1.32 U	0.66	1.32	6.58
PFNA	375-95-1	1.32 U	0.57	1.32	6.58
PFDA	335-76-2	1.32 U	0.36	1.32	6.58
PFUnA	2058-94-8	1.32 U	0.54	1.32	6.58
PFDoA	307-55-1	0.66 U	0.32	0.66	6.58
PFTrDA	72629-94-8	1.32 U	0.37	1.32	6.58
PFTeDA	376-06-7	2.63 U	0.83	2.63	6.58
NMeFOSAA	2355-31-9	3.29 U	1.47	3.29	6.58
NEtFOSAA	2991-50-6	2.63 U	0.75	2.63	6.58
PFBS	375-73-5	1.32 U	0.47	1.32	6.58
PFHxS	355-46-4	0.66 U	0.29	0.66	6.58
PFOS	1763-23-1	1.05 J	0.36	1.32	6.58

Surrogate Recoveries (%)

13C5-PFHxA	75
13C4-PFHpA	74
13C8-PFOA	82
13C9-PFNA	80
13C6-PFDA	80
13C7-PFUnA	77
13C2-PFDoA	77
13C2-PFTeDA	77
d3-MeFOSAA	65
d5-EtFOSAA	74
13C3-PFBS	78
13C3-PFHxS	75
13C8-PFOS	80

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

Client ID		JAX-TCC-SD04-09112018			
Battelle ID		J7783-FS			
Sample Type		SA			
Collection Date		09/11/2018			
Extraction Date		09/17/2018			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		26.29			
Matrix		SD			
Sample Size		1.460			
Size Unit-Basis		g			
Units		ng/g_Wet	MDL	LOD	LOQ
PFHxA	307-24-4	1.37 U	0.45	1.37	6.85
PFHpA	375-85-9	1.37 U	0.60	1.37	6.85
PFOA	335-67-1	1.37 U	0.68	1.37	6.85
PFNA	375-95-1	1.37 U	0.59	1.37	6.85
PFDA	335-76-2	1.37 U	0.37	1.37	6.85
PFUnA	2058-94-8	1.37 U	0.56	1.37	6.85
PFDoA	307-55-1	0.68 U	0.33	0.68	6.85
PFTrDA	72629-94-8	1.37 U	0.38	1.37	6.85
PFTeDA	376-06-7	2.74 U	0.86	2.74	6.85
NMeFOSAA	2355-31-9	3.42 U	1.53	3.42	6.85
NEtFOSAA	2991-50-6	2.74 U	0.78	2.74	6.85
PFBS	375-73-5	1.37 U	0.49	1.37	6.85
PFHxS	355-46-4	0.68 U	0.30	0.68	6.85
PFOS	1763-23-1	1.32 J	0.37	1.37	6.85

Surrogate Recoveries (%)

13C5-PFHxA	86
13C4-PFHpA	84
13C8-PFOA	95
13C9-PFNA	100
13C6-PFDA	86
13C7-PFUnA	83
13C2-PFDoA	89
13C2-PFTeDA	84
d3-MeFOSAA	66
d5-EtFOSAA	76
13C3-PFBS	79
13C3-PFHxS	88
13C8-PFOS	86

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

Client ID		JY46 IB				
Battelle ID		JY46 IB_09/17/2018				
Sample Type		IB				
Collection Date		NA				
Extraction Date		NA				
Analysis Date		09/17/2018				
Analytical Instrument		Sciex 5500 LC/MS/MS				
% Moisture		NA				
Matrix		Solid				
Sample Size		2.00				
Size Unit-Basis		Wet				
Units		ng/g		MDL	LOD	LOQ
PFHxA	307-24-4	1.00	U	0.33	1.00	5.00
PFHpA	375-85-9	1.00	U	0.44	1.00	5.00
PFOA	335-67-1	1.00	U	0.50	1.00	5.00
PFNA	375-95-1	1.00	U	0.43	1.00	5.00
PFDA	335-76-2	1.00	U	0.27	1.00	5.00
PFUnA	2058-94-8	1.00	U	0.41	1.00	5.00
PFDoA	307-55-1	0.50	U	0.24	0.50	5.00
PFTrDA	72629-94-8	1.00	U	0.28	1.00	5.00
PFTeDA	376-06-7	2.00	U	0.63	2.00	5.00
NMeFOSAA	2355-31-9	2.50	U	1.12	2.50	5.00
NEtFOSAA	2991-50-6	2.00	U	0.57	2.00	5.00
PFBS	375-73-5	1.00	U	0.36	1.00	5.00
PFHxS	355-46-4	0.50	U	0.22	0.50	5.00
PFOS	1763-23-1	0.34	J	0.27	1.00	5.00

Surrogate Recoveries (%)

13C5-PFHxA	95
13C4-PFHpA	91
13C8-PFOA	102
13C9-PFNA	101
13C6-PFDA	103
13C7-PFUnA	103
13C2-PFDoA	94
13C2-PFTeDA	93
d3-MeFOSAA	85
d5-EtFOSAA	90
13C3-PFBS	100
13C3-PFHxS	95
13C8-PFOS	99

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

Client ID		Procedural Blank			
Battelle ID		CR815PB-FS			
Sample Type		PB			
Collection Date		09/17/2018			
Extraction Date		09/17/2018			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		0.00			
Matrix		SEDIMENT			
Sample Size		2.070			
Size Unit-Basis		g			
Units		ng/g_Wet	MDL	LOD	LOQ
PFHxA	307-24-4	0.97 U	0.32	0.97	4.83
PFHpA	375-85-9	0.97 U	0.43	0.97	4.83
PFOA	335-67-1	0.97 U	0.48	0.97	4.83
PFNA	375-95-1	0.97 U	0.42	0.97	4.83
PFDA	335-76-2	0.97 U	0.26	0.97	4.83
PFUnA	2058-94-8	0.97 U	0.40	0.97	4.83
PFDoA	307-55-1	0.48 U	0.23	0.48	4.83
PFTrDA	72629-94-8	0.97 U	0.27	0.97	4.83
PFTeDA	376-06-7	1.93 U	0.61	1.93	4.83
NMeFOSAA	2355-31-9	2.42 U	1.08	2.42	4.83
NEtFOSAA	2991-50-6	1.93 U	0.55	1.93	4.83
PFBS	375-73-5	0.97 U	0.35	0.97	4.83
PFHxS	355-46-4	0.48 U	0.21	0.48	4.83
PFOS	1763-23-1	0.97 U	0.26	0.97	4.83

Surrogate Recoveries (%)

13C5-PFHxA	98
13C4-PFHpA	98
13C8-PFOA	103
13C9-PFNA	91
13C6-PFDA	94
13C7-PFUnA	100
13C2-PFDoA	95
13C2-PFTeDA	101
d3-MeFOSAA	82
d5-EtFOSAA	86
13C3-PFBS	99
13C3-PFHxS	100
13C8-PFOS	104

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

Client ID		180507-02: Ottawa Sand					
Battelle ID		CR816LCS-FS					
Sample Type		LCS					
Collection Date		09/17/2018					
Extraction Date		09/17/2018					
Analysis Date		09/17/2018					
Analytical Instrument		Sciex 5500 LC/MS/MS					
% Moisture		0.00					
Matrix		SEDIMENT					
Sample Size		1.990					
Size Unit-Basis		g				Control Limits	
Units		ng/g_Wet	Target	Recovery	Qual	Lower	Upper
PFHxA	307-24-4	9.62	10.15	95		45	135
PFHpA	375-85-9	9.15	10.05	91		60	128
PFOA	335-67-1	9.46	10.05	94		56	136
PFNA	375-95-1	9.28	10.05	92		54	130
PFDA	335-76-2	9.76	10.05	97		55	141
PFUnA	2058-94-8	9.81	10.05	98		57	137
PFDoA	307-55-1	10.05	10.05	100		62	134
PFTrDA	72629-94-8	10.77	10.05	107		51	127
PFTeDA	376-06-7	11.24	10.05	112		34	162
NMeFOSAA	2355-31-9	10.93	10.05	109		52	146
NEtFOSAA	2991-50-6	11.04	10.05	110		54	124
PFBS	375-73-5	10.49	10.15	103		57	145
PFHxS	355-46-4	10.17	10.15	100		52	132
PFOS	1763-23-1	11.30	10.05	112		50	130

Surrogate Recoveries (%)

13C5-PFHxA	95
13C4-PFHpA	86
13C8-PFOA	93
13C9-PFNA	97
13C6-PFDA	90
13C7-PFUnA	88
13C2-PFDoA	91
13C2-PFTeDA	87
d3-MeFOSAA	89
d5-EtFOSAA	81
13C3-PFBS	87
13C3-PFHxS	91
13C8-PFOS	89

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

Client ID		JAX-TCC-SD03-09112018	JAX-TCC-SD03-09112018					
Battelle ID		J7782-FS	J7782MS-FS					
Sample Type		SA	MS					
Collection Date		09/11/2018	09/11/2018					
Extraction Date		09/17/2018	09/17/2018					
Analysis Date		09/17/2018	09/17/2018					
Analytical Instrument		Sciex 5500 LC/MS/MS	Sciex 5500 LC/MS/MS					
% Moisture		24.75	24.24					
Matrix		SD	SD					
Sample Size		1.520	1.560					
Size Unit-Basis		g	g				Control Limits	
Units		ng/g_Wet	ng/g_Wet	Target	Recovery	Qual	Lower	Upper
PFHxA	307-24-4	1.32 U	29.94	32.37	92		45	135
PFHpA	375-85-9	1.32 U	29.65	32.05	93		60	128
PFOA	335-67-1	1.32 U	29.27	32.05	91		56	136
PFNA	375-95-1	1.32 U	28.92	32.05	90		54	130
PFDA	335-76-2	1.32 U	32.09	32.05	100		55	141
PFUnA	2058-94-8	1.32 U	29.34	32.05	92		57	137
PFDoA	307-55-1	0.66 U	31.51	32.05	98		62	134
PFTrDA	72629-94-8	1.32 U	31.24	32.05	97		51	127
PFTeDA	376-06-7	2.63 U	32.65	32.05	102		34	162
NMeFOSAA	2355-31-9	3.29 U	38.19	32.05	119		52	146
NEtFOSAA	2991-50-6	2.63 U	29.58	32.05	92		54	124
PFBS	375-73-5	1.32 U	30.40	32.37	94		57	145
PFHxS	355-46-4	0.66 U	31.76	32.37	98		52	132
PFOS	1763-23-1	1.05 J	33.23	32.05	100		50	130
Surrogate Recoveries (%)								
13C5-PFHxA		75	81					
13C4-PFHpA		74	81					
13C8-PFOA		82	81					
13C9-PFNA		80	85					
13C6-PFDA		80	74					
13C7-PFUnA		77	82					
13C2-PFDoA		77	76					
13C2-PFTeDA		77	78					
d3-MeFOSAA		65	59					
d5-EtFOSAA		74	67					
13C3-PFBS		78	80					
13C3-PFHxS		75	72					
13C8-PFOS		80	71					

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

Client ID	JAX-TCC-SD03-09112018
Battelle ID	J7782MSD-FS
Sample Type	MSD
Collection Date	09/11/2018
Extraction Date	09/17/2018
Analysis Date	09/17/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	25.71
Matrix	SD
Sample Size	1.530
Size Unit-Basis	g
Units	ng/g_Wet

						Control Limits				RPD
			Target	Recovery	Qual	Lower	Upper	RPD	Qual	Limit
PFHxA	307-24-4	29.59	33.01	90		45	135	2.2		≤ 30
PFHpA	375-85-9	26.23	32.68	80		60	128	15.0		≤ 30
PFOA	335-67-1	27.84	32.68	85		56	136	6.8		≤ 30
PFNA	375-95-1	29.98	32.68	92		54	130	2.2		≤ 30
PFDA	335-76-2	35.80	32.68	110		55	141	9.5		≤ 30
PFUnA	2058-94-8	32.32	32.68	99		57	137	7.3		≤ 30
PFDoA	307-55-1	31.90	32.68	98		62	134	0.0		≤ 30
PFTrDA	72629-94-8	32.56	32.68	100		51	127	3.0		≤ 30
PFTeDA	376-06-7	32.58	32.68	100		34	162	2.0		≤ 30
NMeFOSAA	2355-31-9	33.13	32.68	101		52	146	16.4		≤ 30
NEtFOSAA	2991-50-6	25.60	32.68	78		54	124	16.5		≤ 30
PFBS	375-73-5	31.09	33.01	94		57	145	0.0		≤ 30
PFHxS	355-46-4	29.15	33.01	88		52	132	10.8		≤ 30
PFOS	1763-23-1	33.99	32.68	101		50	130	1.0		≤ 30

Surrogate Recoveries (%)

13C5-PFHxA	83
13C4-PFHpA	88
13C8-PFOA	93
13C9-PFNA	84
13C6-PFDA	75
13C7-PFUnA	78
13C2-PFDoA	85
13C2-PFTeDA	84
d3-MeFOSAA	87
d5-EtFOSAA	97
13C3-PFBS	89
13C3-PFHxS	90
13C8-PFOS	78

Glossary of Data Qualifiers

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

Miscellaneous Documentation

QA/QC Summary
Batch 18-0559

Project:	CTO-SE0375: Naval Air Station Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	SD
Data Set:	DP-18-0266
Analytical SOP:	5-369
Method Reference:	PFAS to QSM 5.1 Table B-15

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
9/11/2018	9/12/2018	1.9
Corrective Actions	None	
Sample Storage	The sediment samples were stored frozen until extraction.	
Related samples	NA	

	METHOD SUMMARIES
Sample Preparation	Solid samples were aliquoted into extraction tubes and spiked with surrogates prior to the addition of solvent. The sediment was serially extracted on the Geno/Grinder with 0.4% NH_3 in methanol. 1 mL of extract was refined using ENVI-carb SPE cartridges. Extracts were concentrated to dryness under nitrogen with a water bath set between 35 °C and 45 °C, reconstituted with 80:20 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	All samples were pre-screened prior to full extraction and analysis.
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/g concentrations.
Analysis Comments	Samples analyzed on Sciex 5500 LC-MS/MS.

Holding Times	Extraction Date(s)	Analysis Date(s)
	9/17/2018	9/17-18/2018

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ ½ the LOQ	No exceedances noted.
Samples >10x PB	No comments.

QA/QC Summary
Batch 18-0559

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
Laboratory derived control limits for recovery	No exceedances noted.
	No comments.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A MS/MSD was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
Laboratory derived control limits for recovery and <30% RPD	No exceedances noted.
	No comments.

Extracted Internal Standard Analytes	Labelled analog compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
50-150% of true value	No exceedances noted.
	No comments.

Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
+/- 50% of the area of the L5 calibration point.	No exceedances noted.
	No comments.

Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadradic curve fitting.
+/- 30% of true value, $R^2 \geq 0.99$	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.
+/- 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.
+/- 30% of true value	No exceedances noted.
	No comments.

Instrument Blank (IB)	Immediately following the highest standard analyzed and daily prior to sample analysis.
≤ ½ the LOQ	No exceedances noted.
	No comments.

BATTELLE
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Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project Number: 100119154-SE0375
Preparation Batch: 18-0559
Data Set: DP-18-0266
Test Code: Master_369

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	0	None
Matrix Spike / Matrix Spike Duplicate Precision	0	None
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None

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BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	CTO-SE0375: Naval Air Station Jackson	**Data Set Number:**	DP-18-0266
Project Number:	100119154-SE0375	**Prep Batch Number:**	18-0559
Entered By:	Robert Lizotte Jr	**Entered On:**	09/18/2018
Test Code (Matrix Type):	Master_369(S)		

Package assembled by Robert Lizotte. Samples integrated by Denise Schumitz. Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
-BL 9/18/2018

KA86 is not being used in method 18-0559_18-0560_BASE for NMeFOSAA. There is no impact on the data once this point is removed from the calibration.
-BL 9/18/2018

KA92 is not being used in method 18-0559_18-0560_BASE for NMeFOSAA. There is no impact on the data once this point is removed from the calibration.
-BL 9/18/2018

KA92 is not being used in method 18-0559_18-0560_SIS for d3-MeFOSAA. There is no impact on the data once this point is removed from the calibration.
-BL 9/18/2018

In all instances where the ion ratio was>50% in the sequences associated with this package, either the result was below calibration or was not reported from the extract that had an exceedence.
-BL 9/18/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.09.19 07:20:31 -04'00'

Example Calculation for PFAS

Calculation of final concentration from area:

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

Where:

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

Sample ID:	J7782-FS(3)
Client Sample ID:	JAX-TCC-SD03-09112018
Sample Size:	1.52
Units:	g
Dilution Factor:	10.000
PIV (L):	0.001
Target Analyte:	PFOS
MRM Transition:	499.0 / 80.0
Data file:	09172018.wiff
Result table:	18-0559_18-0560_BASE
Area:	52,353.91
IS Name:	13C8-PFOS
IS Area:	22,101.26
IS Amount (ng/L):	239.25
y-intercept:	-0.69673
slope:	4.59265

$$\text{Concentration} = \frac{[(52353.91/22101.26) - -0.69673]}{4.59265} * 239.25 * 0.001 * 10 / 1.52$$

ng/g = 1.05

Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project No.: 100119154-SE0375
Preparation Batch: 18-0559
Data Set: DP-18-0266

		CR815PB-FS (Procedural Blank)	CR816LCS-FS (180507-02: Ottawa Sand)	J7782MS-FS (JAX-TCC-SD03-09112018)	J7782MSD-FS (JAX-TCC-SD03-09112018)	J7781-FS (JAX-TCC-SD02-09112018)	J7782-FS (JAX-TCC-SD03-09112018)	J7783-FS (JAX-TCC-SD04-09112018)
PFHxA	307-24-4	-	L	L	L	-	-	-
PFHpA	375-85-9	-	L	L	L	-	-	-
PFOA	335-67-1	-	L	L	L	-	-	-
PFNA	375-95-1	-	L	L	L	-	-	-
PFDA	335-76-2	-	L	L	L	-	-	-
PFUnA	2058-94-8	-	L	L	L	-	-	-
PFDoA	307-55-1	-	L	L	L	-	-	-
PFTrDA	72629-94-8	-	L	L	L	-	-	-
PFTeDA	376-06-7	-	L	L	L	-	-	-
NMeFOSAA	2355-31-9	-	L	L	L	-	-	-
NEtFOSAA	2991-50-6	-	L	L	L	-	-	-
PFBS	375-73-5	-	L	L	L	-	-	-
PFHxS	355-46-4	-	L/Br	L/Br	L/Br	-	-	-
PFOS	1763-23-1	-	L/Br	L/Br	L/Br	L/Br	L/Br	L/Br

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

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

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Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper
KA90	L5	9/17/18 19:02	13C2-PFOA	60,385.02	30,192.51	90,577.53

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier
KA86	L1	9/17/18 18:19	13C2-PFOA	64,521.69	30,192.51	90,577.53	
KA87	L2	9/17/18 18:30	13C2-PFOA	58,412.50	30,192.51	90,577.53	
KA88	L3	9/17/18 18:41	13C2-PFOA	44,126.10	30,192.51	90,577.53	
KA89	L4	9/17/18 18:51	13C2-PFOA	49,957.68	30,192.51	90,577.53	
KA90	L5	9/17/18 19:02	13C2-PFOA	60,385.02	30,192.51	90,577.53	
KA91	L6	9/17/18 19:13	13C2-PFOA	52,038.12	30,192.51	90,577.53	
KA92	L7	9/17/18 19:24	13C2-PFOA	53,157.48	30,192.51	90,577.53	
JY46 IB	Instrument Blank	9/17/18 19:35	13C2-PFOA	67,042.08	30,192.51	90,577.53	
JY45 ICC	ICC	9/17/18 19:46	13C2-PFOA	54,959.55	30,192.51	90,577.53	
CR815PB-FS(3)	Procedural Blank	9/17/18 20:18	13C2-PFOA	54,843.84	30,192.51	90,577.53	
CR816LCS-FS(3)	Laboratory Control Sample	9/17/18 20:29	13C2-PFOA	71,288.82	30,192.51	90,577.53	
J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/18 20:40	13C2-PFOA	61,530.71	30,192.51	90,577.53	
J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/18 20:51	13C2-PFOA	76,087.25	30,192.51	90,577.53	
J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:02	13C2-PFOA	71,427.53	30,192.51	90,577.53	
J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:13	13C2-PFOA	58,117.99	30,192.51	90,577.53	
J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/18 21:23	13C2-PFOA	60,216.17	30,192.51	90,577.53	
KA90 CCV	CCV	9/17/18 21:34	13C2-PFOA	70,260.72	30,192.51	90,577.53	

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

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper
KA90	L5	9/17/18 19:02	13C2-PFDA	61,266.67	30,633.34	91,900.01

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier
KA86	L1	9/17/18 18:19	13C2-PFDA	62,612.00	30,633.34	91,900.01	
KA87	L2	9/17/18 18:30	13C2-PFDA	57,413.84	30,633.34	91,900.01	
KA88	L3	9/17/18 18:41	13C2-PFDA	47,686.88	30,633.34	91,900.01	
KA89	L4	9/17/18 18:51	13C2-PFDA	47,657.14	30,633.34	91,900.01	
KA90	L5	9/17/18 19:02	13C2-PFDA	61,266.67	30,633.34	91,900.01	
KA91	L6	9/17/18 19:13	13C2-PFDA	48,271.12	30,633.34	91,900.01	
KA92	L7	9/17/18 19:24	13C2-PFDA	57,726.45	30,633.34	91,900.01	
JY46 IB	Instrument Blank	9/17/18 19:35	13C2-PFDA	65,007.41	30,633.34	91,900.01	
JY45 ICC	ICC	9/17/18 19:46	13C2-PFDA	56,928.59	30,633.34	91,900.01	
CR815PB-FS(3)	Procedural Blank	9/17/18 20:18	13C2-PFDA	53,362.00	30,633.34	91,900.01	
CR816LCS-FS(3)	Laboratory Control Sample	9/17/18 20:29	13C2-PFDA	73,500.53	30,633.34	91,900.01	
J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/18 20:40	13C2-PFDA	68,465.72	30,633.34	91,900.01	
J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/18 20:51	13C2-PFDA	72,325.26	30,633.34	91,900.01	
J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:02	13C2-PFDA	75,308.36	30,633.34	91,900.01	
J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:13	13C2-PFDA	58,433.60	30,633.34	91,900.01	
J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/18 21:23	13C2-PFDA	62,306.25	30,633.34	91,900.01	
KA90 CCV	CCV	9/17/18 21:34	13C2-PFDA	74,049.18	30,633.34	91,900.01	

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

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper
KA90	L5	9/17/18 19:02	13C4-PFOS	23,857.68	11,928.84	35,786.52

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier
KA86	L1	9/17/18 18:19	13C4-PFOS	19,991.76	11,928.84	35,786.52	
KA87	L2	9/17/18 18:30	13C4-PFOS	19,680.67	11,928.84	35,786.52	
KA88	L3	9/17/18 18:41	13C4-PFOS	18,034.60	11,928.84	35,786.52	
KA89	L4	9/17/18 18:51	13C4-PFOS	16,124.75	11,928.84	35,786.52	
KA90	L5	9/17/18 19:02	13C4-PFOS	23,857.68	11,928.84	35,786.52	
KA91	L6	9/17/18 19:13	13C4-PFOS	18,411.39	11,928.84	35,786.52	
KA92	L7	9/17/18 19:24	13C4-PFOS	20,888.13	11,928.84	35,786.52	
JY46 IB	Instrument Blank	9/17/18 19:35	13C4-PFOS	23,110.50	11,928.84	35,786.52	
JY45 ICC	ICC	9/17/18 19:46	13C4-PFOS	22,540.57	11,928.84	35,786.52	
CR815PB-FS(3)	Procedural Blank	9/17/18 20:18	13C4-PFOS	18,960.01	11,928.84	35,786.52	
CR816LCS-FS(3)	Laboratory Control Sample	9/17/18 20:29	13C4-PFOS	25,609.45	11,928.84	35,786.52	
J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/18 20:40	13C4-PFOS	19,367.47	11,928.84	35,786.52	
J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/18 20:51	13C4-PFOS	25,859.82	11,928.84	35,786.52	
J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:02	13C4-PFOS	27,757.61	11,928.84	35,786.52	
J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:13	13C4-PFOS	20,101.05	11,928.84	35,786.52	
J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/18 21:23	13C4-PFOS	22,642.51	11,928.84	35,786.52	
KA90 CCV	CCV	9/17/18 21:34	13C4-PFOS	23,913.38	11,928.84	35,786.52	

BATTELLE

Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 18/09/2018 3:21:16 PM

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 7:24:30 PM	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.54	49	>10
PFBS_2	298.9 / 99.0	1.54	50	>10
PFHxA_1	313.0 / 269.0	1.85	23	>10
PFHxA_2	313.0 / 119.0	1.85	21	>10
PFHpA_1	363.0 / 319.0	2.25	27	>10
PFHpA_2	363.0 / 169.0	2.25	31	>10
PFHxS_1	399.0 / 80.0	2.27	49	>10
PFHxS_2	399.0 / 99.0	2.27	54	>10
PFOA_1	413.0 / 369.0	2.64	30	>10
PFOA_2	413.0 / 169.0	2.64	33	>10
PFNA_1	463.0 / 419.0	3.03	27	>10
PFNA_2	463.0 / 219.0	3.03	33	>10
PFOS_1	499.0 / 80.0	3.03	70	>10
PFOS_2	499.0 / 99.0	3.03	57	>10
PFDA_1	513.0 / 469.0	3.38	31	>10
PFDA_2	513.0 / 219.0	3.38	34	>10
PFUnA_1	563.0 / 519.0	3.70	59	>10
PFUnA_2	563.0 / 269.0	3.70	52	>10
PFDoA_1	613.0 / 569.0	3.98	66	>10
PFDoA_2	613.0 / 319.0	3.98	66	>10
PFTrDA_1	663.0 / 619.0	4.22	73	>10
PFTrDA_2	663.0 / 169.0	4.22	38	>10
PFTeDA_1	713.0 / 669.0	4.43	58	>10
PFTeDA_2	713.0 / 169.0	4.43	66	>10
NMeFOSAA_1	570.0 / 419.0	3.53	40	>10
NMeFOSAA_2	570.0 / 512.0	3.53	20	>10
NEtFOSAA_1	584.0 / 419.0	3.69	28	>10
NEtFOSAA_2	584.0 / 483.0	3.69	26	>10

Mass Spectral Acquisition Rate Report

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 7:24:30 PM	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
13C2-PFDoA	615.0 / 570.0	3.97	48	>10
d3-MeFOSAA	573.0 / 419.0	3.52	21	>10
d5-EtFOSAA	589.0 / 419.0	3.68	20	>10
13C5-PFHxA	318.0 / 273.0	1.84	30	>10
13C4-PFHpA	367.0 / 322.0	2.23	32	>10
13C8-PFOA	421.0 / 376.0	2.63	33	>10
13C9-PFNA	472.0 / 427.0	3.02	46	>10
13C6-PFDA	519.0 / 474.0	3.37	37	>10
13C7-PFUnA	570.0 / 525.0	3.68	22	>10
13C2-PFTeDA	715.0 / 670.0	4.43	40	>10
13C3-PFBS	302.0 / 99.0	1.52	34	>10
13C3-PFHxS	402.0 / 99.0	2.26	25	>10
13C8-PFOS	507.0 / 99.0	3.02	19	>10

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It can be done

Precision and Bias at the LOQ for PFAS in Solids

Analyte	CAS No.	Average (ng/g)	ST DEV	2 Sigma	n
PFBA	375-22-4	11.08	1.57	3.14	20
PFPeA	2706-90-3	10.94	1.44	2.88	20
PFHxA	307-24-4	11.18	2.21	4.42	23
PFHpA	375-85-9	11.27	1.85	3.7	23
PFOA	335-67-1	11.34	1.91	3.82	23
PFNA	375-95-1	11.02	1.71	3.42	23
PFDA	335-76-2	11.82	2.12	4.24	23
PFUnA	2058-94-8	11.56	1.9	3.8	23
PFDoA	307-55-1	11.65	1.6	3.2	23
PFTrDA	72629-94-8	10.9	1.34	2.68	23
PFTeDA	376-06-7	12.01	2.26	4.52	23
NMeFOSAA	2355-31-9	11.69	1.63	3.26	23
NEtFOSAA	2991-50-6	10.81	1.48	2.96	23
PFOSA	754-91-6	10.75	1.63	3.26	4
PFBS	375-73-5	11.71	1.75	3.5	23
PFPeS	BDO-2114	11.67	1.22	2.44	4
PFHxS	355-46-4	11.33	1.76	3.52	23
PFHpS	375-99-6	11.05	1.68	3.36	20
PFOS	1763-23-1	11.09	1.56	3.12	23
PFNS	98789-57-2	10.67	1.01	2.02	4
PFDS	2806-15-7	11.84	2.23	4.46	20
4:2FTS	BDO-2205	12.03	1.86	3.72	20
6:2FTS	27619-97-2	12.48	1.33	2.66	12
8:2FTS	39108-34-4	12.08	2.01	4.02	20

BATTELLE DETECTION LIMITS FOR PFAS IN SOLIDS (SEDIMENT/SOIL)

Analytical SOP 5-369
Extraction SOP 5-370

PFAS by LC-MS/MS Compliant with QSM 5.1 Table B-15

Analyte	CAS No.	MDL (ng/g)	LOD (ng/g)	LOQ (ng/g)
PFBA	375-22-4	0.36	1.0	5.0
PFPeA	2706-90-3	0.39	1.0	5.0
PFHxA	307-24-4	0.33	1.0	5.0
PFHpA	375-85-9	0.44	1.0	5.0
PFOA	335-67-1	0.50	1.0	5.0
PFNA	375-95-1	0.43	1.0	5.0
PFDA	335-76-2	0.27	1.0	5.0
PFUnA	2058-94-8	0.41	1.0	5.0
PFDoA	307-55-1	0.24	0.5	5.0
PFTrDA	72629-94-8	0.28	1.0	5.0
PFTeDA	376-06-7	0.63	2.0	5.0
NMeFOSAA	2355-31-9	1.12	2.5	5.0
NEtFOSAA	2991-50-6	0.57	2.0	5.0
PFOSA	754-91-6	0.39	1.0	5.0
PFBS	375-73-5	0.36	1.0	5.0
PFPeS	BDO-2114	0.57	2.0	5.0
PFHxS	355-46-4	0.22	0.5	5.0
PFHpS	375-99-6	0.34	1.0	5.0
PFOS	1763-23-1	0.27	1.0	5.0
PFNS	98789-57-2	0.74	2.0	5.0
PFDS	2806-15-7	0.19	0.5	5.0
4:2FTS	BDO-2205	0.29	1.0	5.0
6:2FTS	27619-97-2	2.31	2.5	5.0
8:2FTS	39108-34-4	0.59	2.0	5.0

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

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ID 595 04/18

Analytical Transitions for PFAS in non-potable water, solid, and tissue

EPA 537 MOD DoD QSM 5.1 compliant with Table B-15 requirements

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFBA	375-22-4	Target	213.0 / 169.0	NA
PFPeA	2706-90-3	Target	263.0 / 219.0	NA
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFOSA	754-91-6	Target	498.0 / 78.0	498.0 / 83.0
PFBS	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
PFPeS	BDO-2114	Target	349.0 / 99.0	249.0 / 80.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFHpS	375-99-6	Target	449.0 / 80.0	449.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
PFNS	98789-57-2	Target	549.0 / 99.0	549.0 / 80.0
PFDS	2806-15-7	Target	599.0 / 80.0	599.0 / 99.0
4:2FTS	BDO-2205	Target	327.0 / 307.0	327.0 / 80.0
6:2FTS	27619-97-2	Target	427.0 / 407.0	427.0 / 81.0
8:2FTS	39108-34-4	Target	527.0 / 507.0	527.0 / 487.0
13C4-PFBA	BDO-2105	SIS[1]	217.0 / 172.0	NA
13C5-PFPeA	BDO-2216	SIS[1]	268.0 / 223.0	NA
13C5-PFHxA	BDO-2217	SIS[1]	318.0 / 273.0	NA

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
13C4-PFHpA	BDO-2218	SIS[1]	367.0 / 322.0	NA
13C8-PFOA	BDO-2219	SIS[1]	421.0 / 376.0	NA
13C9-PFNA	BDO-2221	SIS[1]	472.0 / 427.0	NA
13C6-PFDA	BDO-2222	SIS[1]	519.0 / 474.0	NA
13C7-PFUnA	BDO-2223	SIS[1]	570.0 / 525.0	NA
13C2-PFDoA	BDO-2112	SIS[1]	615.0 / 570.0	NA
13C2-PFTeDA	BDO-2224	SIS[1]	715.0 / 670.0	NA
d3-MeFOSAA	BDO-1838	SIS[1]	573.0 / 419.0	NA
d5-EtFOSAA	BDO-1839	SIS[1]	589.0 / 419.0	NA
13C8-FOSA	BDO-2225	SIS[1]	506.0 / 78.0	NA
13C3-PFBS	BDO-2226	SIS[1]	302.0 / 99.0	NA
13C3-PFHxS	BDO-2227	SIS[1]	402.0 / 99.0	NA
13C8-PFOS	BDO-2228	SIS[1]	507.0 / 99.0	NA
13C2-4:2FTS	BDO-2229	SIS[1]	329.0 / 81.0	NA
13C2-6:2FTS	BDO-2230	SIS[1]	429.0 / 81.0	NA
13C2-8:2FTS	BDO-2220	SIS[1]	529.0 / 81.0	NA
13C3-PFBA	BDO-2231	IS[2]	216.0 / 172.0	NA
13C2-PFOA	BDO-2107	IS[2]	415.0 / 370.0	NA
13C2-PFDA	BDO-2110	IS[2]	515.0 / 470.0	NA
13C4-PFOS	BDO-2121	IS[2]	503.0 / 99.0	NA

[1] – extracted internal standard (surrogate)
[2] – injection internal standard

Solids Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF[1]	Sample Size (g)	Sample Equivalent (ng/g)[2]
25	1	10	2.0	0.1
50	1	10	2.0	0.3
100	1	10	2.0	0.5
250	1	10	2.0	1.3
500	1	10	2.0	2.5
1,000	1	10	2.0	5.0
2,500	1	10	2.0	12.5
10,000	1	10	2.0	50.0
20,000	1	10	2.0	100.0

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

[2] - calculated equivalent of a sample based on the ICAL concentration

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

QTRAP 5500
Preventive Maintenance Checklist

Preventive Maintenance Date:	12-June-2018

Request ID:	9749
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: Suspected issue with pulse gas manifold. TRAP testing in POSITIVE mode couldn't be finished because of pulse gas issue. The same issue will be taken care in separate service call.

Performed By: Kaustubh Dhayagude **Date:** 12-June-2018

Approved By :_____ **Date:** _____

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PRE PM PPG PERFORMANCE EVALUATION:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.6	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.3	Read Only
☑ CAD Medium	2.7	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	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	4.01 e6	Read Only	0.6998	Read Only
Q1 500.380	2.81 e7	Read Only	0.7038	Read Only
Q1 906.673	4.21 e7	Read Only	0.7071	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	5.45 e6	Read Only	0.6873	Read Only
Q3 500.380	2.69 e7	Read Only	0.7591	Read Only
Q3 906.673	4.50 e7	Read Only	0.7843	Read Only

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

☐ Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: :__28.87%__ (Read Only)

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
Q1 609.3	4.26 e7	Read Only	0.7011	Read Only
MS/MS 195.1	1.23 e7	Read Only	0.7069	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	1.42 e7	Read Only	0.7686	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	2.24 e7	Read Only	0.7243	Read Only

☑ Perform Product Ion scan using NEG PPG 3e-5M. Record10mca.

Mass	Scan Rate	MCA	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.31 e6	Read Only	0.6746	Read Only

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PREVENTIVE MAINTENANCE CHECKLIST:

☑ Check Cooling Fans for Turbo Pumps while MS is ON.
☑ Check QJet and QPS tuning voltage for reference.
☐ Record AC input Voltage while MS is OFF: _____(200-240VAC).
If Out-of-Range, notify customer.

☑ Clean Interface
- ☑ Curtain Plate
- ☑ Orifice Plate
- ☑ QJet
- ☑ Q0 Rods.

☑ Replace Roughing Pump Oil.
☑ Inspect Oil Exhaust Filter, if Applicable. ☐ N/A
☑ Clean and inspect built-in divert valve if used. ☐ N/A
☑ Check Multiplier Voltage, optimize if necessary.
☑ Replace four Air Filters at the bottom of the mass spectrometer.

☑Pump down overnight if possible. ☐ N/A

☑Perform Maintenance on Turbo V source.

☑Replace Electrode, if necessary. ☐ N/A
☑Check Turbo heaters resistances.
☑Check if Temperature is reached at 500C with TIS Probe installed.
☐Check if Temperature is reached at 500C with APCI Probe installed. ☑ N/A

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

POST PM PPG PERFORMANCE TESTS:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.7	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.3	Read Only
☑ CAD Medium	2.7	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.04 e6	≥1.2^{e}6	0.6737	0.6 to 0.8
Q1 500.380	1.60 e7	≥9.0^{e}6	0.6961	0.6 to 0.8
Q1 906.673	2.84 e7	≥1.4^{e}7	0.7179	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	0.7465	0.6 to 0.8

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

Mass	Q3 Intensity		Q3 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	5.02 e6	≥1.2^{e}6	0.6719	0.6 to 0.8
Q3 500.380	1.72 e7	≥9.0^{e}6	0.7443	0.6 to 0.8
Q3 906.673	3.00 e7	≥1.4^{e}7	0.7504	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.46 e8	≥6.8^{e}7	0.7202	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: 21.10% (≥ 10.0%)

Mass	MSMS Intensity		Width	Width Specs
	Value	Spec	Value	
Q1 609.3	5.78 e7	N/A	0.6888	Read Only
MS/MS 195.1	1.22 e7	N/A	0.7003	Read Only

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.35 e7	≥1.0^{e}7	0.7486	0.6 to 0.8
Q1 933.636	1000	50	7.52 e7	≥4.0^{e}7	0.7206	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	2.15 e7	≥8.0^{e}6	0.7492	0.6 to 0.8
Q3 933.636	1000	50	8.33 e7	≥4.0^{e}7	0.7299	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	8.54 e6	≥7.2 ^{e}6	0.1473	<0.35
ER 922.010	0.05	4.96 e7	≥2.8 ^{e}6	0.2434	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05		≥2.4 ^{e}7		<0.65
ER 922.010	0.05		≥6.8 ^{e}7		<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	1.81 e8	≥4.4 ^{e}7	0.1862	<0.35
ER 601.978	0.05	1.70 e8	≥5.6 ^{e}7	0.1809	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	5.72 e8	≥1.2 ^{e}8	0.5102	<0.65
ER 601.978	0.05	4.52 e8	≥1.6 ^{e}8	0.6187	<0.65

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate (Da/s)	Q0 Trapping OFF		Q0 Trapping ON	
		Intensity	Spec	Intensity	Spec
EPI 397.2	10000	> 3.0 e6	≥2.0 e6	> 7.0 e6	≥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	Yes	Contains only 397.2	N/A	N/A
☐ 236 OR ☑ 365	1000	Yes	Fragment Intensity	> 2.0 e6	≥1.6x $10^{e}6$

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.

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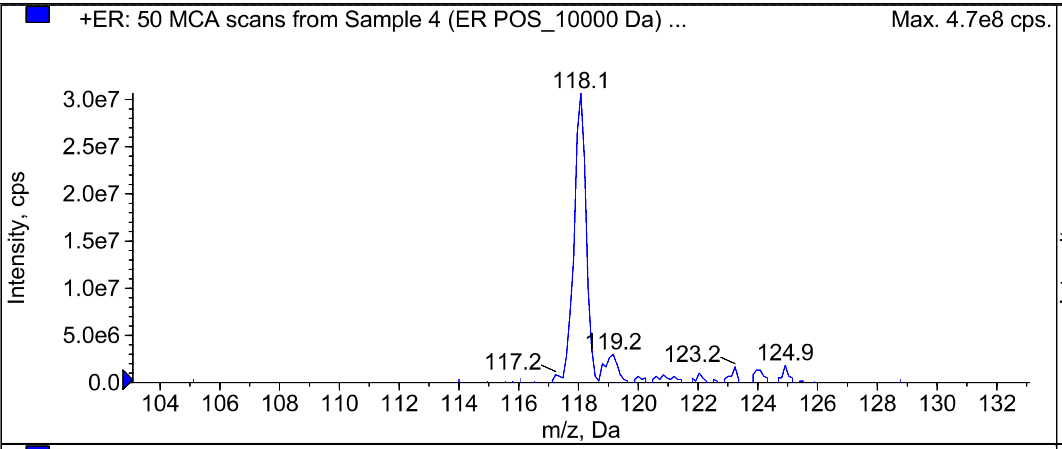

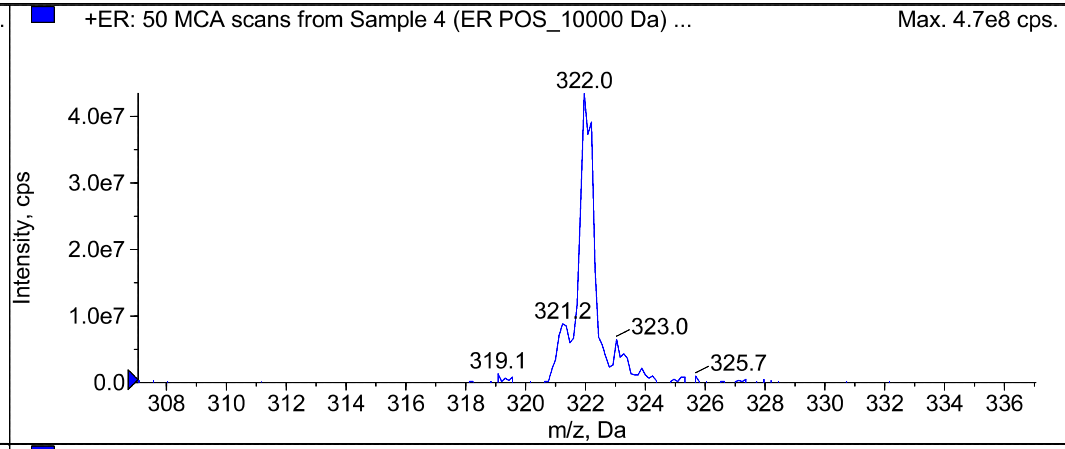

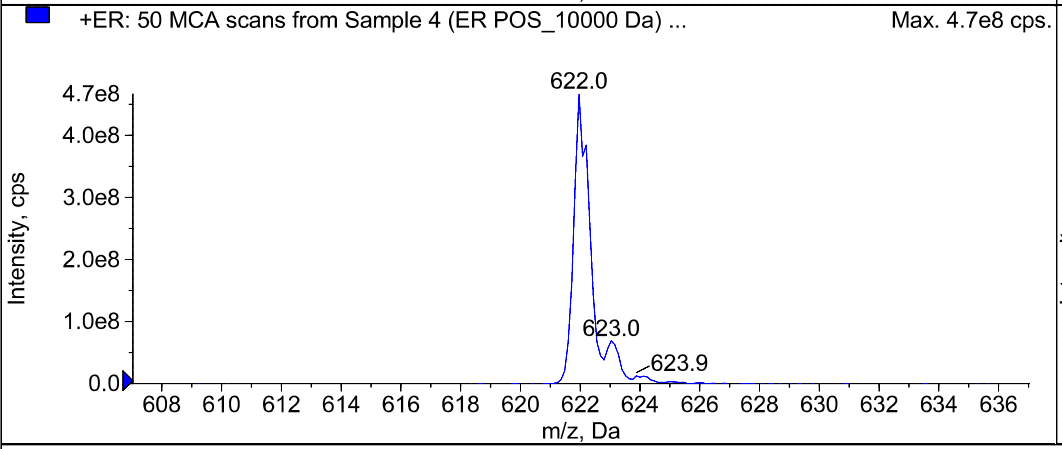

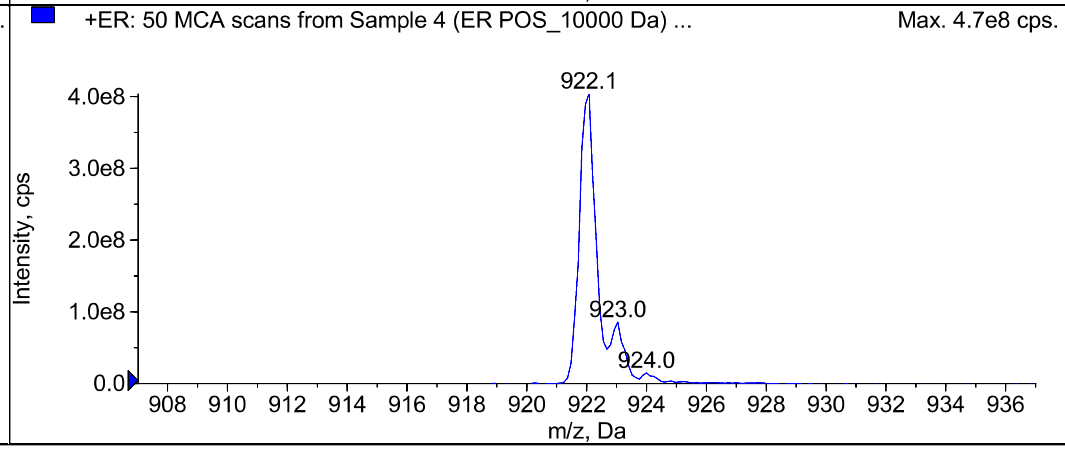

Peak List for " +ER: 50 MCA scans from Sample 4 (ER POS_10000 Da) of TRAP ER with NEW Pulse Manifold.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	118.0870	118.0702	3.0667e7	0.4146	0.0168
2	322.0490	322.0509	4.3500e7	0.4945	-1.9159e-3
3	622.0290	622.0370	4.6717e8	0.5757	-8.0044e-3
4	922.0100	922.0101	4.0400e8	0.5732	-1.4148e-4

Battelle Standard ID	Description	Intermediate Solutions	Battelle Reagent ID (purchased solutions)
JY26	PFAS - DoD Internal Standard Spiking Solution	JY25	180726-04
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	-	180726-05
JY45	PFAS - DoD ICC	JY27	180726-05
JY45	PFAS - DoD ICC	JZ27	171025-01
JY45	PFAS - DoD ICC	JY25	180726-04
JY46	PFAS - DoD Instrument Blank	JY25	180726-04
JY46	PFAS - DoD Instrument Blank	JY27	180726-05
JZ88	PFAS - DoD Second Source LCS/MS Solution	-	170724-01
KA29	PFAS Branched Solution (~5,000 ng/L)	JX28	180618-02
KA29	PFAS Branched Solution (~5,000 ng/L)	JX28	180618-03
KA29	PFAS Branched Solution (~5,000 ng/L)	JX28	180618-04
KA29	PFAS Branched Solution (~5,000 ng/L)	JX28	180618-06
KA29	PFAS Branched Solution (~5,000 ng/L)	JX28	180618-07
KA86	PFAS - DoD Calibration L1	JY23	180705-02
KA86	PFAS - DoD Calibration L1	JY25	180726-04
KA86	PFAS - DoD Calibration L1	JY27	180726-05
KA87	PFAS - DoD Calibration L2	JY25	180726-04
KA87	PFAS - DoD Calibration L2	JY23	180705-02
KA87	PFAS - DoD Calibration L2	JY27	180726-05
KA88	PFAS - DoD Calibration L3	JY27	180726-05
KA88	PFAS - DoD Calibration L3	JY25	180726-04
KA88	PFAS - DoD Calibration L3	KA85	180705-02
KA89	PFAS - DoD Calibration L4	KA85	180705-02
KA89	PFAS - DoD Calibration L4	JY25	180726-04
KA89	PFAS - DoD Calibration L4	JY27	180726-05
KA90	PFAS - DoD Calibration L5	JY27	180726-05
KA90	PFAS - DoD Calibration L5	JY25	180726-04
KA90	PFAS - DoD Calibration L5	KA85	180705-02
KA91	PFAS - DoD Calibration L6	KA85	180705-02
KA91	PFAS - DoD Calibration L6	JY25	180726-04
KA91	PFAS - DoD Calibration L6	JY27	180726-05
KA92	PFAS - DoD Calibration L7	JY27	180726-05
KA92	PFAS - DoD Calibration L7	JY25	180726-04
KA92	PFAS - DoD Calibration L7	KA85	180705-02

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JX28

Description: PFAS Branched 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)
180618-02	Branched NEtFOSAA Standard (50 µg/mL)	Neat	~50.000000	01/17/23	---	---	100 uL	1	10	~0.5000
180618-03	Branched NMeFOSAA Standard (50 µg/mL)	Neat	~50.000000	01/17/23	---	---	100 uL	1	10	~0.5000
180618-04	PFOA - Technical Mix	Neat	~50.000000	02/16/22	---	---	100 uL	1	10	~0.5000
180618-06	Branched PFHxS Standard (50 µg/mL)	Neat	~50.000000	01/04/22	---	---	100 uL	1	10	~0.5000
180618-07	Branched PFOS Standard (50 µg/mL)	Neat	~50.000000	01/12/22	---	---	100 uL	1	10	~0.5000

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 6/18/2018 **Expiration Date:** 6/18/2019

Solution Volume 25 **mL X** 1 **Vials** **Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107

Balance ID:

Comment:

Solvent:	Lot:
Methanol (HPLC)	179315

Approved By: Thorn, Jonathan **Date:** 7/3/2018 8:10:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JX28

Description: PFAS Branched Standard Stock

Stock Id: 180618-02

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	100	50.00	1	100.000	1	10	0.50000

Stock Id: 180618-03

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-methylperfluoro-1-octanesulfonamidoacetic acid	100	50.00	1	100.000	1	10	0.50000

Stock Id: 180618-04

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
Perfluoro-n-octanoic Acid	100	50.00	1	100.000	1	10	0.50000

Stock Id: 180618-06

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
Perfluoro-1-hexanesulfonate	100	50.00	1	100.000	1	10	0.50000

Stock Id: 180618-07

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
Perfluoro-1-octanesulfonate	100	50.00	1	100.000	1	10	0.50000

Final Concentrations:

Analyte:	Conc (ug/mL):
N-ethylperfluoro-octanesulfonamidoacetic acid	.50000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.50000
Perfluoro-1-hexanesulfonate	.50000
Perfluoro-1-octanesulfonate	.50000
Perfluoro-n-octanoic Acid	.50000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180618-02	Pipette	I0793912B
180618-03	Pipette	I0793912B
180618-04	Pipette	I0793912B
180618-06	Pipette	I0793912B
180618-07	Pipette	I0793912B

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 6/18/2018 **Expiration Date:** 6/18/2019

Solution Volume 25 **mL X** 1 **Vials** **Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107

Comment:

Approved By: Thorn, Jonathan **Date:** 7/3/2018 8:10:00 AM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JY23

Description: PFAS - DoD 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)
180705-02	PFOA - DOD	Neat	~1.000000	06/19/23	---	---	500 uL	1	100	~0.0050

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Balance ID: _____

Comment: 96/4 Methanol/milli-q water

Approved By: Thorn, Jonathan **Date:** 8/29/2018 10:10:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY23

Description: PFAS - DoD Low ICAL Stock

Stock Id: 180705-02

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	500	1.01	1	100.000	1	100	0.00505
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	500	1.01	1	100.000	1	100	0.00505
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	500	1.00	1	100.000	1	100	0.00500
(Na) Perfluoro-1-decanesulfonate	500	1.01	1	100.000	1	100	0.00505
(NA) Perfluoro-1-heptanesulfonate	500	1.00	1	100.000	1	100	0.00500
(Na) Perfluoro-1-nonanesulfonate	500	1.01	1	100.000	1	100	0.00505
N-ethylperfluoro-octanesulfonamidoacetic acid	500	1.00	1	100.000	1	100	0.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-1-butanesulfonate	500	1.01	1	100.000	1	100	0.00505
Perfluoro-1-hexanesulfonate	500	1.01	1	100.000	1	100	0.00505
Perfluoro-1-octanesulfonamide	500	1.00	1	100.000	1	100	0.00500
Perfluoro-1-octanesulfonate	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-butanoic Acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-decanoic Acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-dodecanoic acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-heptanoic Acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-hexanoic acid	500	1.01	1	100.000	1	100	0.00505
Perfluoro-n-octanoic Acid	500	1.00	1	100.000	1	100	0.00500
Perfluorononanoic Acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-pentanoic acid	500	1.01	1	100.000	1	100	0.00505
Perfluoro-n-tetradecanoic acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-tridecanoic acid	500	1.00	1	100.000	1	100	0.00500
Perfluoro-n-undecanoic acid	500	1.00	1	100.000	1	100	0.00500
Sodium perfluoro-1-pentanesulfonate	500	1.00	1	100.000	1	100	0.00500

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00505
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00505
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00500
(Na) Perfluoro-1-decanesulfonate	.00505
(NA) Perfluoro-1-heptanesulfonate	.00500
(Na) Perfluoro-1-nonanesulfonate	.00505
N-ethylperfluoro-octanesulfonamidoacetic acid	.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00500
Perfluoro-1-butanesulfonate	.00505

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 96/4 Methanol/milli-q water

Approved By: Thorn, Jonathan **Date:** 8/29/2018 10:10:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY23

Description: PFAS - DoD Low ICAL Stock

Perfluoro-1-hexanesulfonate	.00505
Perfluoro-1-octanesulfonamide	.00500
Perfluoro-1-octanesulfonate	.00500
Perfluoro-n-butanoic Acid	.00500
Perfluoro-n-decanoic Acid	.00500
Perfluoro-n-dodecanoic acid	.00500
Perfluoro-n-heptanoic Acid	.00500
Perfluoro-n-hexanoic acid	.00505
Perfluoro-n-octanoic Acid	.00500
Perfluorononanoic Acid	.00500
Perfluoro-n-pentanoic acid	.00505
Perfluoro-n-tetradecanoic acid	.00500
Perfluoro-n-tridecanoic acid	.00500
Perfluoro-n-undecanoic acid	.00500
Sodium perfluoro-1-pentanesulfonate	.00500

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180705-02	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 96/4 Methanol/milli-q water

Approved By: Thorn, Jonathan **Date:** 8/29/2018 10:10:00 AM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JY25

Description: PFAS - DoD Internal Standard 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)
180726-04	Mass-labelled PFAS injection standards	Neat	~2.000000	05/02/22	---	---	625 uL	1	25	~0.0500

Solution Prepared By: Schultz, Stephanie	**Date Prepared:**	7/16/2018	**Expiration Date:** 7/16/2019
Solution Volume 40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107	

Balance ID:

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Thorn, Jonathan **Date:** 8/29/2018 10:09:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY25

Description: PFAS - DoD Internal Standard Stock Solution

Stock Id: 180726-04

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	625	2.00	1	100.000	1	25	0.05000
13C2-PFOA	625	2.00	1	100.000	1	25	0.05000
13C3-PFBA	625	2.00	1	100.000	1	25	0.05000
13C4-PFOS	625	1.91	1	100.000	1	25	0.04785

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.05000
13C2-PFOA	.05000
13C3-PFBA	.05000
13C4-PFOS	.04785

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180726-04	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Thorn, Jonathan **Date:** 8/29/2018 10:09:00 AM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JY26

Description: PFAS - DoD Internal Standard Spiking 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)
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	2500 uL	1	25	~0.0000

Solution Prepared By: Schultz, Stephanie	**Date Prepared:** 7/16/2018	**Expiration Date:**	7/16/2019
Solution Volume 40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Schumitz, Denise **Date:** 8/8/2018 9:16:00 AM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY26

Description: PFAS - DoD Internal Standard Spiking Solution

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	2500	0.05	---	---	1	25	0.00500
13C2-PFOA	2500	0.05	---	---	1	25	0.00500
13C3-PFBA	2500	0.05	---	---	1	25	0.00500
13C4-PFOS	2500	0.05	---	---	1	25	0.00479

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.00500
13C2-PFOA	.00500
13C3-PFBA	.00500
13C4-PFOS	.00479

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	OU16914

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Schumitz, Denise **Date:** 8/8/2018 9:16:00 AM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JY27

Description: PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)

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)
180726-05	Mass-labelled PFAS Extraction Standard Solution	Neat	~1.000000	02/07/23	---	---	1000 uL	1	20	~0.0500

Solution Prepared By: Schultz, Stephanie	**Date Prepared:** 7/16/2018	**Expiration Date:**	7/16/2019
Solution Volume 40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Schumitz, Denise **Date:** 8/8/2018 9:17:00 AM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY27

Description: PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)

Stock Id: 180726-05

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	1000	0.94	1	100.000	1	20	0.04675
13C2-6:2FTS	1000	0.95	1	100.000	1	20	0.04745
13C2-8:2FTS	1000	0.96	1	100.000	1	20	0.04790
13C2-PFDoA	1000	1.00	1	100.000	1	20	0.05000
13C2-PFTeDA	1000	1.00	1	100.000	1	20	0.05000
13C3-PFBS	1000	0.93	1	100.000	1	20	0.04645
13C3-PFHxS	1000	0.95	1	100.000	1	20	0.04730
13C4-PFBA	1000	1.00	1	100.000	1	20	0.05000
13C4-PFHpA	1000	1.00	1	100.000	1	20	0.05000
13C5-PFHxA	1000	1.00	1	100.000	1	20	0.05000
13C5-PFPeA	1000	1.00	1	100.000	1	20	0.05000
13C6-PFDA	1000	1.00	1	100.000	1	20	0.05000
13C7-PFUnA	1000	1.00	1	100.000	1	20	0.05000
13C8-FOSA	1000	1.00	1	100.000	1	20	0.05000
13C8-PFOA	1000	1.00	1	100.000	1	20	0.05000
13C8-PFOS	1000	0.96	1	100.000	1	20	0.04785
13C9-PFNA	1000	1.00	1	100.000	1	20	0.05000
d3-MeFOSAA	1000	1.00	1	100.000	1	20	0.05000
d5-EtFOSAA	1000	1.00	1	100.000	1	20	0.05000

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-4:2FTS	.04675
13C2-6:2FTS	.04745
13C2-8:2FTS	.04790
13C2-PFDoA	.05000
13C2-PFTeDA	.05000
13C3-PFBS	.04645
13C3-PFHxS	.04730
13C4-PFBA	.05000
13C4-PFHpA	.05000
13C5-PFHxA	.05000
13C5-PFPeA	.05000
13C6-PFDA	.05000
13C7-PFUnA	.05000
13C8-FOSA	.05000

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Schumitz, Denise **Date:** 8/8/2018 9:17:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY27

Description: PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)

13C8-PFOA	.05000
13C8-PFOS	.04785
13C9-PFNA	.05000
d3-MeFOSAA	.05000
d5-EtFOSAA	.05000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180726-05	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 96/4 Methanol/Milli-q water (RP-180803-1)

Approved By: Schumitz, Denise **Date:** 8/8/2018 9:17:00 AM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **JY45**

Description: PFAS - DoD 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)
JZ27	PFAS - DoD Second Source LCS/MS Solution	Solution	~0	07/25/19	---	---	200 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By: Schultz, Stephanie	**Date Prepared:** 7/16/2018	**Expiration Date:**	7/16/2019
Solution Volume 40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107		

Balance ID:

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY45

Description: PFAS - DoD ICC

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023
13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Stock Id: JZ27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	200	0.05	---	---	1	10	0.00101
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	200	0.05	---	---	1	10	0.00100
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	200	0.05	---	---	1	10	0.00100
(Na) Perfluoro-1-decanesulfonate	200	0.05	---	---	1	10	0.00101
(NA) Perfluoro-1-heptanesulfonate	200	0.05	---	---	1	10	0.00100
(Na) Perfluoro-1-nonanesulfonate	200	0.05	---	---	1	10	0.00101

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY45

Description: PFAS - DoD ICC

N-ethylperfluoro-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-1-butanesulfonate	200	0.05	---	---	1	10	0.00101
Perfluoro-1-hexanesulfonate	200	0.05	---	---	1	10	0.00101
Perfluoro-1-octanesulfonamide	200	0.05	---	---	1	10	0.00100
Perfluoro-1-octanesulfonate	200	0.05	---	---	1	10	0.00100
Perfluoro-n-butanoic Acid	200	0.05	---	---	1	10	0.00100
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	0.00101
Perfluoro-n-octanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluorononanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-pentanoic 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
Sodium perfluoro-1-pentanesulfonate	200	0.05	---	---	1	10	0.00100

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00101
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00100
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00100
(Na) Perfluoro-1-decanesulfonate	.00101
(NA) Perfluoro-1-heptanesulfonate	.00100
(Na) Perfluoro-1-nonanesulfonate	.00101
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **JY45**

Description: PFAS - DoD ICC

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanesulfonate	.00101
Perfluoro-1-hexanesulfonate	.00101
Perfluoro-1-octanesulfonamide	.00100
Perfluoro-1-octanesulfonate	.00100
Perfluoro-n-butanoic Acid	.00100
Perfluoro-n-decanoic Acid	.00100
Perfluoro-n-dodecanoic acid	.00100
Perfluoro-n-heptanoic Acid	.00100
Perfluoro-n-hexanoic acid	.00101
Perfluoro-n-octanoic Acid	.00100
Perfluorononanoic Acid	.00100
Perfluoro-n-pentanoic acid	.00100
Perfluoro-n-tetradecanoic acid	.00100
Perfluoro-n-tridecanoic acid	.00100
Perfluoro-n-undecanoic acid	.00100
Sodium perfluoro-1-pentanesulfonate	.00100

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	I0793912B
JY27	Pipette	I0793912B
JZ27	Pipette	B814657482

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **JY46**

Description: PFAS - DoD 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)
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By: Schultz, Stephanie	**Date Prepared:** 7/16/2018	**Expiration Date:**	7/16/2019
Solution Volume 40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107		

Balance ID:

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JY46

Description: PFAS - DoD Instrument Blank

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023
13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **JY46**

Description: PFAS - DoD Instrument Blank

13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025
13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	I0793912B
JY27	Pipette	I0793912B

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/16/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 8/14/2018 4:48:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **JZ88**

Description: PFAS - DoD 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)
170724-01	PFOA- 2nd Source	Neat	~1.000000	03/22/22	---	---	1000 uL	1	20	~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: 80/20 Methanol/Milli-q water

Approved By: Thorn, Jonathan **Date:** 8/21/2018 7:17:00 AM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JZ88

Description: PFAS - DoD Second Source LCS/MS Solution

Stock Id: 170724-01

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	1000	1.01	1	100.000	1	20	0.05050
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	1000	1.00	1	100.000	1	20	0.05000
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	1000	1.00	1	100.000	1	20	0.05000
(Na) Perfluoro-1-decanesulfonate	1000	1.01	1	100.000	1	20	0.05050
(NA) Perfluoro-1-heptanesulfonate	1000	1.00	1	100.000	1	20	0.05000
(Na) Perfluoro-1-nonanesulfonate	1000	1.01	1	100.000	1	20	0.05050
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	1.00	1	100.000	1	20	0.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-1-butanesulfonate	1000	1.01	1	100.000	1	20	0.05050
Perfluoro-1-hexanesulfonate	1000	1.01	1	100.000	1	20	0.05050
Perfluoro-1-octanesulfonamide	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-1-octanesulfonate	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-butanoic Acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-decanoic Acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-dodecanoic acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-heptanoic Acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-hexanoic acid	1000	1.01	1	100.000	1	20	0.05050
Perfluoro-n-octanoic Acid	1000	1.00	1	100.000	1	20	0.05000
Perfluorononanoic Acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-pentanoic acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-tetradecanoic acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-tridecanoic acid	1000	1.00	1	100.000	1	20	0.05000
Perfluoro-n-undecanoic acid	1000	1.00	1	100.000	1	20	0.05000
Sodium perfluoro-1-pentanesulfonate	1000	1.00	1	100.000	1	20	0.05000

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.05050
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.05000
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.05000
(Na) Perfluoro-1-decanesulfonate	.05050
(NA) Perfluoro-1-heptanesulfonate	.05000
(Na) Perfluoro-1-nonanesulfonate	.05050
N-ethylperfluoro-octanesulfonamidoacetic acid	.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.05000
Perfluoro-1-butanesulfonate	.05050

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: 80/20 Methanol/Milli-q water

Approved By: Thorn, Jonathan **Date:** 8/21/2018 7:17:00 AM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JZ88

Description: PFAS - DoD Second Source LCS/MS Solution

Perfluoro-1-hexanesulfonate	.05050
Perfluoro-1-octanesulfonamide	.05000
Perfluoro-1-octanesulfonate	.05000
Perfluoro-n-butanoic Acid	.05000
Perfluoro-n-decanoic Acid	.05000
Perfluoro-n-dodecanoic acid	.05000
Perfluoro-n-heptanoic Acid	.05000
Perfluoro-n-hexanoic acid	.05050
Perfluoro-n-octanoic Acid	.05000
Perfluorononanoic Acid	.05000
Perfluoro-n-pentanoic acid	.05000
Perfluoro-n-tetradecanoic acid	.05000
Perfluoro-n-tridecanoic acid	.05000
Perfluoro-n-undecanoic acid	.05000
Sodium perfluoro-1-pentanesulfonate	.05000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
170724-01	Pipette	C0982448K

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: 80/20 Methanol/Milli-q water

Approved By: Thorn, Jonathan **Date:** 8/21/2018 7:17:00 AM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA29**

Description: PFAS Branched Solution (~5,000 ng/L)

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)
JX28	PFAS Branched Standard Stock	Solution	~0	06/18/19	---	---	100 uL	1	10	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	8/31/2018	**Expiration Date**	6/18/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/6/2018 2:49:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA29

Description: PFAS Branched Solution (~5,000 ng/L)

Stock Id: JX28

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	100	0.50	---	---	1	10	0.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	100	0.50	---	---	1	10	0.00500
Perfluoro-1-hexanesulfonate	100	0.50	---	---	1	10	0.00500
Perfluoro-1-octanesulfonate	100	0.50	---	---	1	10	0.00500
Perfluoro-n-octanoic Acid	100	0.50	---	---	1	10	0.00500

Final Concentrations:

Analyte:	Conc (ug/mL):
N-ethylperfluoro-octanesulfonamidoacetic acid	.00500
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00500
Perfluoro-1-hexanesulfonate	.00500
Perfluoro-1-octanesulfonate	.00500
Perfluoro-n-octanoic Acid	.00500

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JX28	Pipette	B814659662

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 8/31/2018 **Expiration Date:** 6/18/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/6/2018 2:49:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA85**

Description: PFAS - DoD 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)
180705-02	PFOA - DOD	Neat	~1.000000	06/19/23	---	---	500 uL	1	10	~0.0500

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	9/13/2019
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:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA85

Description: PFAS - DoD High ICAL Stock

Stock Id: 180705-02

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	500	1.01	1	100.000	1	10	0.05050
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	500	1.01	1	100.000	1	10	0.05050
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	500	1.00	1	100.000	1	10	0.05000
(Na) Perfluoro-1-decanesulfonate	500	1.01	1	100.000	1	10	0.05050
(NA) Perfluoro-1-heptanesulfonate	500	1.00	1	100.000	1	10	0.05000
(Na) Perfluoro-1-nonanesulfonate	500	1.01	1	100.000	1	10	0.05050
N-ethylperfluoro-octanesulfonamidoacetic acid	500	1.00	1	100.000	1	10	0.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-1-butanesulfonate	500	1.01	1	100.000	1	10	0.05050
Perfluoro-1-hexanesulfonate	500	1.01	1	100.000	1	10	0.05050
Perfluoro-1-octanesulfonamide	500	1.00	1	100.000	1	10	0.05000
Perfluoro-1-octanesulfonate	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-butanoic Acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-decanoic Acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-dodecanoic acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-heptanoic Acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-hexanoic acid	500	1.01	1	100.000	1	10	0.05050
Perfluoro-n-octanoic Acid	500	1.00	1	100.000	1	10	0.05000
Perfluorononanoic Acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-pentanoic acid	500	1.01	1	100.000	1	10	0.05050
Perfluoro-n-tetradecanoic acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-tridecanoic acid	500	1.00	1	100.000	1	10	0.05000
Perfluoro-n-undecanoic acid	500	1.00	1	100.000	1	10	0.05000
Sodium perfluoro-1-pentanesulfonate	500	1.00	1	100.000	1	10	0.05000

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.05050
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.05050
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.05000
(Na) Perfluoro-1-decanesulfonate	.05050
(NA) Perfluoro-1-heptanesulfonate	.05000
(Na) Perfluoro-1-nonanesulfonate	.05050
N-ethylperfluoro-octanesulfonamidoacetic acid	.05000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.05000
Perfluoro-1-butanesulfonate	.05050

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 9/13/2019

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:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA85

Description: PFAS - DoD High ICAL Stock

Perfluoro-1-hexanesulfonate	.05050
Perfluoro-1-octanesulfonamide	.05000
Perfluoro-1-octanesulfonate	.05000
Perfluoro-n-butanoic Acid	.05000
Perfluoro-n-decanoic Acid	.05000
Perfluoro-n-dodecanoic acid	.05000
Perfluoro-n-heptanoic Acid	.05000
Perfluoro-n-hexanoic acid	.05050
Perfluoro-n-octanoic Acid	.05000
Perfluorononanoic Acid	.05000
Perfluoro-n-pentanoic acid	.05050
Perfluoro-n-tetradecanoic acid	.05000
Perfluoro-n-tridecanoic acid	.05000
Perfluoro-n-undecanoic acid	.05000
Sodium perfluoro-1-pentanesulfonate	.05000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180705-02	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 9/13/2019

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:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA86**

Description: PFAS - DoD Calibration L1

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)
JY23	PFAS - DoD Low ICAL Stock	Solution	~0	07/16/19	---	---	200 uL	1	10	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 methanol/milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA86

Description: PFAS - DoD Calibration L1

Stock Id: JY23

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	200	0.01	---	---	1	10	0.00010
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	200	0.01	---	---	1	10	0.00010
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	200	0.01	---	---	1	10	0.00010
(Na) Perfluoro-1-decanesulfonate	200	0.01	---	---	1	10	0.00010
(NA) Perfluoro-1-heptanesulfonate	200	0.01	---	---	1	10	0.00010
(Na) Perfluoro-1-nonanesulfonate	200	0.01	---	---	1	10	0.00010
N-ethylperfluoro-octanesulfonamidoacetic acid	200	0.01	---	---	1	10	0.00010
N-methylperfluoro-1-octanesulfonamidoacetic acid	200	0.01	---	---	1	10	0.00010
Perfluoro-1-butanesulfonate	200	0.01	---	---	1	10	0.00010
Perfluoro-1-hexanesulfonate	200	0.01	---	---	1	10	0.00010
Perfluoro-1-octanesulfonamide	200	0.01	---	---	1	10	0.00010
Perfluoro-1-octanesulfonate	200	0.01	---	---	1	10	0.00010
Perfluoro-n-butanoic Acid	200	0.01	---	---	1	10	0.00010
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-octanoic Acid	200	0.01	---	---	1	10	0.00010
Perfluorononanoic Acid	200	0.01	---	---	1	10	0.00010
Perfluoro-n-pentanoic 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
Sodium perfluoro-1-pentanesulfonate	200	0.01	---	---	1	10	0.00010

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 methanol/milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA86

Description: PFAS - DoD Calibration L1

13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00010
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00010
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00010
(Na) Perfluoro-1-decanesulfonate	.00010
(NA) Perfluoro-1-heptanesulfonate	.00010
(Na) Perfluoro-1-nonanesulfonate	.00010
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 methanol/milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA86**

Description: PFAS - DoD Calibration L1

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00010
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00010
Perfluoro-1-butanesulfonate	.00010
Perfluoro-1-hexanesulfonate	.00010
Perfluoro-1-octanesulfonamide	.00010
Perfluoro-1-octanesulfonate	.00010
Perfluoro-n-butanoic Acid	.00010
Perfluoro-n-decanoic Acid	.00010
Perfluoro-n-dodecanoic acid	.00010
Perfluoro-n-heptanoic Acid	.00010
Perfluoro-n-hexanoic acid	.00010
Perfluoro-n-octanoic Acid	.00010
Perfluorononanoic Acid	.00010
Perfluoro-n-pentanoic acid	.00010
Perfluoro-n-tetradecanoic acid	.00010
Perfluoro-n-tridecanoic acid	.00010
Perfluoro-n-undecanoic acid	.00010
Sodium perfluoro-1-pentanesulfonate	.00010

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY23	Pipette	B814657482
JY25	Pipette	B814659662
JY27	Pipette	B814659662

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 methanol/milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA87**

Description: PFAS - DoD Calibration L2

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)
JY23	PFAS - DoD Low ICAL Stock	Solution	~0	07/16/19	---	---	500 uL	1	10	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

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It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA87

Description: PFAS - DoD Calibration L2

Stock Id: JY23

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	500	0.01	---	---	1	10	0.00025
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	500	0.01	---	---	1	10	0.00025
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	500	0.01	---	---	1	10	0.00025
(Na) Perfluoro-1-decanesulfonate	500	0.01	---	---	1	10	0.00025
(NA) Perfluoro-1-heptanesulfonate	500	0.01	---	---	1	10	0.00025
(Na) Perfluoro-1-nonanesulfonate	500	0.01	---	---	1	10	0.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	500	0.01	---	---	1	10	0.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	0.01	---	---	1	10	0.00025
Perfluoro-1-butanesulfonate	500	0.01	---	---	1	10	0.00025
Perfluoro-1-hexanesulfonate	500	0.01	---	---	1	10	0.00025
Perfluoro-1-octanesulfonamide	500	0.01	---	---	1	10	0.00025
Perfluoro-1-octanesulfonate	500	0.01	---	---	1	10	0.00025
Perfluoro-n-butanoic Acid	500	0.01	---	---	1	10	0.00025
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-octanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluorononanoic Acid	500	0.01	---	---	1	10	0.00025
Perfluoro-n-pentanoic 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
Sodium perfluoro-1-pentanesulfonate	500	0.01	---	---	1	10	0.00025

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA87

Description: PFAS - DoD Calibration L2

13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00025
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00025
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00025
(Na) Perfluoro-1-decanesulfonate	.00025
(NA) Perfluoro-1-heptanesulfonate	.00025
(Na) Perfluoro-1-nonanesulfonate	.00025
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA87**

Description: PFAS - DoD Calibration L2

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00025
Perfluoro-1-butanesulfonate	.00025
Perfluoro-1-hexanesulfonate	.00025
Perfluoro-1-octanesulfonamide	.00025
Perfluoro-1-octanesulfonate	.00025
Perfluoro-n-butanoic Acid	.00025
Perfluoro-n-decanoic Acid	.00025
Perfluoro-n-dodecanoic acid	.00025
Perfluoro-n-heptanoic Acid	.00025
Perfluoro-n-hexanoic acid	.00025
Perfluoro-n-octanoic Acid	.00025
Perfluorononanoic Acid	.00025
Perfluoro-n-pentanoic acid	.00025
Perfluoro-n-tetradecanoic acid	.00025
Perfluoro-n-tridecanoic acid	.00025
Perfluoro-n-undecanoic acid	.00025
Sodium perfluoro-1-pentanesulfonate	.00025

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY23	Pipette	B820865811
JY25	Pipette	B814659662
JY27	Pipette	B814659662

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA88**

Description: PFAS - DoD Calibration 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)
KA85	PFAS - DoD High ICAL Stock	Solution	~0	09/13/19	---	---	100 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA88

Description: PFAS - DoD Calibration L3

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023
13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Stock Id: KA85

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	100	0.05	---	---	1	10	0.00051
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	100	0.05	---	---	1	10	0.00051
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	100	0.05	---	---	1	10	0.00050
(Na) Perfluoro-1-decanesulfonate	100	0.05	---	---	1	10	0.00051
(NA) Perfluoro-1-heptanesulfonate	100	0.05	---	---	1	10	0.00050
(Na) Perfluoro-1-nonanesulfonate	100	0.05	---	---	1	10	0.00051

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA88**

Description: PFAS - DoD Calibration L3

N-ethylperfluoro-octanesulfonamidoacetic acid	100	0.05	---	---	1	10	0.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	100	0.05	---	---	1	10	0.00050
Perfluoro-1-butanesulfonate	100	0.05	---	---	1	10	0.00051
Perfluoro-1-hexanesulfonate	100	0.05	---	---	1	10	0.00051
Perfluoro-1-octanesulfonamide	100	0.05	---	---	1	10	0.00050
Perfluoro-1-octanesulfonate	100	0.05	---	---	1	10	0.00050
Perfluoro-n-butanoic Acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-decanoic Acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-dodecanoic acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-heptanoic Acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-hexanoic acid	100	0.05	---	---	1	10	0.00051
Perfluoro-n-octanoic Acid	100	0.05	---	---	1	10	0.00050
Perfluorononanoic Acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-pentanoic acid	100	0.05	---	---	1	10	0.00051
Perfluoro-n-tetradecanoic acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-tridecanoic acid	100	0.05	---	---	1	10	0.00050
Perfluoro-n-undecanoic acid	100	0.05	---	---	1	10	0.00050
Sodium perfluoro-1-pentanesulfonate	100	0.05	---	---	1	10	0.00050

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00051
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00051
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00050
(Na) Perfluoro-1-decanesulfonate	.00051
(NA) Perfluoro-1-heptanesulfonate	.00050
(Na) Perfluoro-1-nonanesulfonate	.00051
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA88**

Description: PFAS - DoD Calibration L3

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00050
Perfluoro-1-butanesulfonate	.00051
Perfluoro-1-hexanesulfonate	.00051
Perfluoro-1-octanesulfonamide	.00050
Perfluoro-1-octanesulfonate	.00050
Perfluoro-n-butanoic Acid	.00050
Perfluoro-n-decanoic Acid	.00050
Perfluoro-n-dodecanoic acid	.00050
Perfluoro-n-heptanoic Acid	.00050
Perfluoro-n-hexanoic acid	.00051
Perfluoro-n-octanoic Acid	.00050
Perfluorononanoic Acid	.00050
Perfluoro-n-pentanoic acid	.00051
Perfluoro-n-tetradecanoic acid	.00050
Perfluoro-n-tridecanoic acid	.00050
Perfluoro-n-undecanoic acid	.00050
Sodium perfluoro-1-pentanesulfonate	.00050

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	B814659662
JY27	Pipette	B814659662
KA85	Pipette	B814659662

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA89**

Description: PFAS - DoD Calibration 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)
KA85	PFAS - DoD High ICAL Stock	Solution	~0	09/13/19	---	---	200 uL	1	10	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA89

Description: PFAS - DoD Calibration L4

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023
13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Stock Id: KA85

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	200	0.05	---	---	1	10	0.00101
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	200	0.05	---	---	1	10	0.00101
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	200	0.05	---	---	1	10	0.00100
(Na) Perfluoro-1-decanesulfonate	200	0.05	---	---	1	10	0.00101
(NA) Perfluoro-1-heptanesulfonate	200	0.05	---	---	1	10	0.00100
(Na) Perfluoro-1-nonanesulfonate	200	0.05	---	---	1	10	0.00101

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA89

Description: PFAS - DoD Calibration L4

N-ethylperfluoro-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	200	0.05	---	---	1	10	0.00100
Perfluoro-1-butanesulfonate	200	0.05	---	---	1	10	0.00101
Perfluoro-1-hexanesulfonate	200	0.05	---	---	1	10	0.00101
Perfluoro-1-octanesulfonamide	200	0.05	---	---	1	10	0.00100
Perfluoro-1-octanesulfonate	200	0.05	---	---	1	10	0.00100
Perfluoro-n-butanoic Acid	200	0.05	---	---	1	10	0.00100
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	0.00101
Perfluoro-n-octanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluorononanoic Acid	200	0.05	---	---	1	10	0.00100
Perfluoro-n-pentanoic acid	200	0.05	---	---	1	10	0.00101
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
Sodium perfluoro-1-pentanesulfonate	200	0.05	---	---	1	10	0.00100

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00101
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00101
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00100
(Na) Perfluoro-1-decanesulfonate	.00101
(NA) Perfluoro-1-heptanesulfonate	.00100
(Na) Perfluoro-1-nonanesulfonate	.00101
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA89**

Description: PFAS - DoD Calibration L4

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanesulfonate	.00101
Perfluoro-1-hexanesulfonate	.00101
Perfluoro-1-octanesulfonamide	.00100
Perfluoro-1-octanesulfonate	.00100
Perfluoro-n-butanoic Acid	.00100
Perfluoro-n-decanoic Acid	.00100
Perfluoro-n-dodecanoic acid	.00100
Perfluoro-n-heptanoic Acid	.00100
Perfluoro-n-hexanoic acid	.00101
Perfluoro-n-octanoic Acid	.00100
Perfluorononanoic Acid	.00100
Perfluoro-n-pentanoic acid	.00101
Perfluoro-n-tetradecanoic acid	.00100
Perfluoro-n-tridecanoic acid	.00100
Perfluoro-n-undecanoic acid	.00100
Sodium perfluoro-1-pentanesulfonate	.00100

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	B814659662
JY27	Pipette	B814659662
KA85	Pipette	B814657482

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:27:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA90**

Description: PFAS - DoD Calibration 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)
KA85	PFAS - DoD High ICAL Stock	Solution	~0	09/13/19	---	---	500 uL	1	10	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	50 uL	1	10	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA90

Description: PFAS - DoD Calibration L5

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.05	---	---	1	10	0.00025
13C2-PFOA	50	0.05	---	---	1	10	0.00025
13C3-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFOS	50	0.05	---	---	1	10	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	50	0.05	---	---	1	10	0.00023
13C2-6:2FTS	50	0.05	---	---	1	10	0.00024
13C2-8:2FTS	50	0.05	---	---	1	10	0.00024
13C2-PFDoA	50	0.05	---	---	1	10	0.00025
13C2-PFTeDA	50	0.05	---	---	1	10	0.00025
13C3-PFBS	50	0.05	---	---	1	10	0.00023
13C3-PFHxS	50	0.05	---	---	1	10	0.00024
13C4-PFBA	50	0.05	---	---	1	10	0.00025
13C4-PFHpA	50	0.05	---	---	1	10	0.00025
13C5-PFHxA	50	0.05	---	---	1	10	0.00025
13C5-PFPeA	50	0.05	---	---	1	10	0.00025
13C6-PFDA	50	0.05	---	---	1	10	0.00025
13C7-PFUnA	50	0.05	---	---	1	10	0.00025
13C8-FOSA	50	0.05	---	---	1	10	0.00025
13C8-PFOA	50	0.05	---	---	1	10	0.00025
13C8-PFOS	50	0.05	---	---	1	10	0.00024
13C9-PFNA	50	0.05	---	---	1	10	0.00025
d3-MeFOSAA	50	0.05	---	---	1	10	0.00025
d5-EtFOSAA	50	0.05	---	---	1	10	0.00025

Stock Id: KA85

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	500	0.05	---	---	1	10	0.00253
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	500	0.05	---	---	1	10	0.00253
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	500	0.05	---	---	1	10	0.00250
(Na) Perfluoro-1-decanesulfonate	500	0.05	---	---	1	10	0.00253
(NA) Perfluoro-1-heptanesulfonate	500	0.05	---	---	1	10	0.00250
(Na) Perfluoro-1-nonanesulfonate	500	0.05	---	---	1	10	0.00253

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA90**

Description: PFAS - DoD Calibration L5

N-ethylperfluoro-octanesulfonamidoacetic acid	500	0.05	---	---	1	10	0.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	0.05	---	---	1	10	0.00250
Perfluoro-1-butanesulfonate	500	0.05	---	---	1	10	0.00253
Perfluoro-1-hexanesulfonate	500	0.05	---	---	1	10	0.00253
Perfluoro-1-octanesulfonamide	500	0.05	---	---	1	10	0.00250
Perfluoro-1-octanesulfonate	500	0.05	---	---	1	10	0.00250
Perfluoro-n-butanoic Acid	500	0.05	---	---	1	10	0.00250
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	0.00253
Perfluoro-n-octanoic Acid	500	0.05	---	---	1	10	0.00250
Perfluorononanoic Acid	500	0.05	---	---	1	10	0.00250
Perfluoro-n-pentanoic acid	500	0.05	---	---	1	10	0.00253
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
Sodium perfluoro-1-pentanesulfonate	500	0.05	---	---	1	10	0.00250

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.00253
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.00253
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.00250
(Na) Perfluoro-1-decanesulfonate	.00253
(NA) Perfluoro-1-heptanesulfonate	.00250
(Na) Perfluoro-1-nonanesulfonate	.00253
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA90**

Description: PFAS - DoD Calibration L5

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00250
Perfluoro-1-butanesulfonate	.00253
Perfluoro-1-hexanesulfonate	.00253
Perfluoro-1-octanesulfonamide	.00250
Perfluoro-1-octanesulfonate	.00250
Perfluoro-n-butanoic Acid	.00250
Perfluoro-n-decanoic Acid	.00250
Perfluoro-n-dodecanoic acid	.00250
Perfluoro-n-heptanoic Acid	.00250
Perfluoro-n-hexanoic acid	.00253
Perfluoro-n-octanoic Acid	.00250
Perfluorononanoic Acid	.00250
Perfluoro-n-pentanoic acid	.00253
Perfluoro-n-tetradecanoic acid	.00250
Perfluoro-n-tridecanoic acid	.00250
Perfluoro-n-undecanoic acid	.00250
Sodium perfluoro-1-pentanesulfonate	.00250

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	B814659662
JY27	Pipette	B814659662
KA85	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA91**

Description: PFAS - DoD Calibration 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)
KA85	PFAS - DoD High ICAL Stock	Solution	~0	09/13/19	---	---	1000 uL	1	5	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	25 uL	1	5	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	25 uL	1	5	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA91

Description: PFAS - DoD Calibration L6

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	25	0.05	---	---	1	5	0.00025
13C2-PFOA	25	0.05	---	---	1	5	0.00025
13C3-PFBA	25	0.05	---	---	1	5	0.00025
13C4-PFOS	25	0.05	---	---	1	5	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	25	0.05	---	---	1	5	0.00023
13C2-6:2FTS	25	0.05	---	---	1	5	0.00024
13C2-8:2FTS	25	0.05	---	---	1	5	0.00024
13C2-PFDoA	25	0.05	---	---	1	5	0.00025
13C2-PFTeDA	25	0.05	---	---	1	5	0.00025
13C3-PFBS	25	0.05	---	---	1	5	0.00023
13C3-PFHxS	25	0.05	---	---	1	5	0.00024
13C4-PFBA	25	0.05	---	---	1	5	0.00025
13C4-PFHpA	25	0.05	---	---	1	5	0.00025
13C5-PFHxA	25	0.05	---	---	1	5	0.00025
13C5-PFPeA	25	0.05	---	---	1	5	0.00025
13C6-PFDA	25	0.05	---	---	1	5	0.00025
13C7-PFUnA	25	0.05	---	---	1	5	0.00025
13C8-FOSA	25	0.05	---	---	1	5	0.00025
13C8-PFOA	25	0.05	---	---	1	5	0.00025
13C8-PFOS	25	0.05	---	---	1	5	0.00024
13C9-PFNA	25	0.05	---	---	1	5	0.00025
d3-MeFOSAA	25	0.05	---	---	1	5	0.00025
d5-EtFOSAA	25	0.05	---	---	1	5	0.00025

Stock Id: KA85

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	1000	0.05	---	---	1	5	0.01010
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	1000	0.05	---	---	1	5	0.01010
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	1000	0.05	---	---	1	5	0.01000
(Na) Perfluoro-1-decanesulfonate	1000	0.05	---	---	1	5	0.01010
(NA) Perfluoro-1-heptanesulfonate	1000	0.05	---	---	1	5	0.01000
(Na) Perfluoro-1-nonanesulfonate	1000	0.05	---	---	1	5	0.01010

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA91

Description: PFAS - DoD Calibration L6

N-ethylperfluoro-octanesulfonamidoacetic acid	1000	0.05	---	---	1	5	0.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-1-butanesulfonate	1000	0.05	---	---	1	5	0.01010
Perfluoro-1-hexanesulfonate	1000	0.05	---	---	1	5	0.01010
Perfluoro-1-octanesulfonamide	1000	0.05	---	---	1	5	0.01000
Perfluoro-1-octanesulfonate	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-butanoic Acid	1000	0.05	---	---	1	5	0.01000
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	0.01010
Perfluoro-n-octanoic Acid	1000	0.05	---	---	1	5	0.01000
Perfluorononanoic Acid	1000	0.05	---	---	1	5	0.01000
Perfluoro-n-pentanoic acid	1000	0.05	---	---	1	5	0.01010
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
Sodium perfluoro-1-pentanesulfonate	1000	0.05	---	---	1	5	0.01000

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.01010
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.01010
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.01000
(Na) Perfluoro-1-decanesulfonate	.01010
(NA) Perfluoro-1-heptanesulfonate	.01000
(Na) Perfluoro-1-nonanesulfonate	.01010
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA91**

Description: PFAS - DoD Calibration L6

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.01000
Perfluoro-1-butanesulfonate	.01010
Perfluoro-1-hexanesulfonate	.01010
Perfluoro-1-octanesulfonamide	.01000
Perfluoro-1-octanesulfonate	.01000
Perfluoro-n-butanoic Acid	.01000
Perfluoro-n-decanoic Acid	.01000
Perfluoro-n-dodecanoic acid	.01000
Perfluoro-n-heptanoic Acid	.01000
Perfluoro-n-hexanoic acid	.01010
Perfluoro-n-octanoic Acid	.01000
Perfluorononanoic Acid	.01000
Perfluoro-n-pentanoic acid	.01010
Perfluoro-n-tetradecanoic acid	.01000
Perfluoro-n-tridecanoic acid	.01000
Perfluoro-n-undecanoic acid	.01000
Sodium perfluoro-1-pentanesulfonate	.01000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	B814659662
JY27	Pipette	B814657482
KA85	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **KA92**

Description: PFAS - DoD Calibration 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)
KA85	PFAS - DoD High ICAL Stock	Solution	~0	09/13/19	---	---	2000 uL	1	5	~0.0000
JY27	PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)	Solution	~0	07/16/19	---	---	25 uL	1	5	~0.0000
JY25	PFAS - DoD Internal Standard Stock Solution	Solution	~0	07/16/19	---	---	25 uL	1	5	~0.0000

Solution Prepared By	Schultz, Stephanie	**Date Prepared:**	9/13/2018	**Expiration Date**	7/16/2019
Solution Volume	40 **mL X** 1 **Vials**	**Refrigerator/Freezer No:**	LC Laboratory: Refrigerator - R0107		

Balance ID: _____

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: KA92

Description: PFAS - DoD Calibration L7

Stock Id: JY25

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	25	0.05	---	---	1	5	0.00025
13C2-PFOA	25	0.05	---	---	1	5	0.00025
13C3-PFBA	25	0.05	---	---	1	5	0.00025
13C4-PFOS	25	0.05	---	---	1	5	0.00024

Stock Id: JY27

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	25	0.05	---	---	1	5	0.00023
13C2-6:2FTS	25	0.05	---	---	1	5	0.00024
13C2-8:2FTS	25	0.05	---	---	1	5	0.00024
13C2-PFDoA	25	0.05	---	---	1	5	0.00025
13C2-PFTeDA	25	0.05	---	---	1	5	0.00025
13C3-PFBS	25	0.05	---	---	1	5	0.00023
13C3-PFHxS	25	0.05	---	---	1	5	0.00024
13C4-PFBA	25	0.05	---	---	1	5	0.00025
13C4-PFHpA	25	0.05	---	---	1	5	0.00025
13C5-PFHxA	25	0.05	---	---	1	5	0.00025
13C5-PFPeA	25	0.05	---	---	1	5	0.00025
13C6-PFDA	25	0.05	---	---	1	5	0.00025
13C7-PFUnA	25	0.05	---	---	1	5	0.00025
13C8-FOSA	25	0.05	---	---	1	5	0.00025
13C8-PFOA	25	0.05	---	---	1	5	0.00025
13C8-PFOS	25	0.05	---	---	1	5	0.00024
13C9-PFNA	25	0.05	---	---	1	5	0.00025
d3-MeFOSAA	25	0.05	---	---	1	5	0.00025
d5-EtFOSAA	25	0.05	---	---	1	5	0.00025

Stock Id: KA85

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	2000	0.05	---	---	1	5	0.02020
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	2000	0.05	---	---	1	5	0.02020
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	2000	0.05	---	---	1	5	0.02000
(Na) Perfluoro-1-decanesulfonate	2000	0.05	---	---	1	5	0.02020
(NA) Perfluoro-1-heptanesulfonate	2000	0.05	---	---	1	5	0.02000
(Na) Perfluoro-1-nonanesulfonate	2000	0.05	---	---	1	5	0.02020

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA92**

Description: PFAS - DoD Calibration L7

N-ethylperfluoro-octanesulfonamidoacetic acid	2000	0.05	---	---	1	5	0.02000
N-methylperfluoro-1-octanesulfonamidoacetic acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-1-butanesulfonate	2000	0.05	---	---	1	5	0.02020
Perfluoro-1-hexanesulfonate	2000	0.05	---	---	1	5	0.02020
Perfluoro-1-octanesulfonamide	2000	0.05	---	---	1	5	0.02000
Perfluoro-1-octanesulfonate	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-butanoic Acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-decanoic Acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-dodecanoic acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-heptanoic Acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-hexanoic acid	2000	0.05	---	---	1	5	0.02020
Perfluoro-n-octanoic Acid	2000	0.05	---	---	1	5	0.02000
Perfluorononanoic Acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-pentanoic acid	2000	0.05	---	---	1	5	0.02020
Perfluoro-n-tetradecanoic acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-tridecanoic acid	2000	0.05	---	---	1	5	0.02000
Perfluoro-n-undecanoic acid	2000	0.05	---	---	1	5	0.02000
Sodium perfluoro-1-pentanesulfonate	2000	0.05	---	---	1	5	0.02000

Final Concentrations:

Analyte:	Conc (ug/mL):
(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate	.02020
(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate	.02020
(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate	.02000
(Na) Perfluoro-1-decanesulfonate	.02020
(NA) Perfluoro-1-heptanesulfonate	.02000
(Na) Perfluoro-1-nonanesulfonate	.02020
13C2-4:2FTS	.00023
13C2-6:2FTS	.00024
13C2-8:2FTS	.00024
13C2-PFDA	.00025
13C2-PFDoA	.00025
13C2-PFOA	.00025
13C2-PFTeDA	.00025
13C3-PFBA	.00025
13C3-PFBS	.00023
13C3-PFHxS	.00024
13C4-PFBA	.00025
13C4-PFHpA	.00025

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **KA92**

Description: PFAS - DoD Calibration L7

13C4-PFOS	.00024
13C5-PFHxA	.00025
13C5-PFPeA	.00025
13C6-PFDA	.00025
13C7-PFUnA	.00025
13C8-FOSA	.00025
13C8-PFOA	.00025
13C8-PFOS	.00024
13C9-PFNA	.00025
d3-MeFOSAA	.00025
d5-EtFOSAA	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.02000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.02000
Perfluoro-1-butanesulfonate	.02020
Perfluoro-1-hexanesulfonate	.02020
Perfluoro-1-octanesulfonamide	.02000
Perfluoro-1-octanesulfonate	.02000
Perfluoro-n-butanoic Acid	.02000
Perfluoro-n-decanoic Acid	.02000
Perfluoro-n-dodecanoic acid	.02000
Perfluoro-n-heptanoic Acid	.02000
Perfluoro-n-hexanoic acid	.02020
Perfluoro-n-octanoic Acid	.02000
Perfluorononanoic Acid	.02000
Perfluoro-n-pentanoic acid	.02020
Perfluoro-n-tetradecanoic acid	.02000
Perfluoro-n-tridecanoic acid	.02000
Perfluoro-n-undecanoic acid	.02000
Sodium perfluoro-1-pentanesulfonate	.02000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JY25	Pipette	B814659662
JY27	Pipette	B814659662
KA85	Pipette	OU16914

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 9/13/2018 **Expiration Date:** 7/16/2019

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

Comment: 80/20 Methanol/Milli-q water

Approved By: Schumitz, Denise **Date:** 9/14/2018 2:28:00 PM

BATTELLE
It can be done

BDO Id: 170724-01

Reagent Receipt Report

Approved: ☐ **Authorized** ☐

Name: PFOA- 2nd Source
Vendor: ABSOLUTE STANDARDS
Catalogue No: 99207
Type: Solution
Lot No: 032217
Quantity: 5 ea mL **% Moisture:**
Description: PFOA - 2nd Source

Received: 7/24/2017
Custodian: Schumitz, Matt
Expires: 3/22/2022
Consumed:
Stored In: LC Laboratory - F0111

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
(Na) 1H,1H,2H,2H-Perfluorodecane	39108-34-4	1.0100	100.00	--	--	☐			
(Na) 1H,1H,2H,2H-Perfluorohexane s	414911-30-1	1.0000	100.00	--	--	☐			
(Na) 1H,1H,2H,2H-Perfluorooctane s	27619-97-2	1.0000	100.00	--	--	☐			
(Na) Perfluoro-1-decanesulfonate	2806-15-7	1.0100	100.00	--	--	☐			
(NA) Perfluoro-1-heptanesulfonate	375-92-8	1.0000	100.00	--	--	☐			
(Na) Perfluoro-1-nonanesulfonate	98789-57-2	1.0100	100.00	--	--	☐			
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	1.0000	100.00	--	--	☐			
N-methylperfluoro-1-octanesulfonami	2355-31-9	1.0000	100.00	--	--	☐			
Perfluoro-1-butanesulfonate	375-73-5	1.0100	100.00	--	--	☐			
Perfluoro-1-hexanesulfonate	355-46-4	1.0100	100.00	--	--	☐			
Perfluoro-1-octanesulfonamide	754-91-6	1.0000	100.00	--	--	☐			
Perfluoro-1-octanesulfonate	1763-23-1	1.0000	100.00	--	--	☐			
Perfluoro-n-butanoic Acid	375-22-4	1.0000	100.00	--	--	☐			
Perfluoro-n-decanoic Acid	335-76-2	1.0000	100.00	--	--	☐			
Perfluoro-n-dodecanoic acid	307-55-1	1.0000	100.00	--	--	☐			
Perfluoro-n-heptanoic Acid	375-85-9	1.0000	100.00	--	--	☐			
Perfluoro-n-hexanoic acid	307-24-4	1.0100	100.00	--	--	☐			
Perfluoro-n-octanoic Acid	335-67-1	1.0000	100.00	--	--	☐			
Perfluorononanoic Acid	375-95-1	1.0000	100.00	--	--	☐			
Perfluoro-n-pentanoic acid	2706-90-3	1.0000	100.00	--	--	☐			
Perfluoro-n-tetradecanoic acid	376-06-7	1.0000	100.00	--	--	☐			
Perfluoro-n-tridecanoic acid	72629-94-8	1.0000	100.00	--	--	☐			
Perfluoro-n-undecanoic acid	2058-94-8	1.0000	100.00	--	--	☐			
Sodium perfluoro-1-pentanesulfonate	2706-91-4	1.0000	100.00	--	--	☐			

Total Analytes: 24

Notes:

Approved by: _____ **Approved on:** _____

Authorized by: _____ **Authorized on:** _____

CERTIFIED WEIGHT REPORT

170704-01

Part Number: 99207
Lot Number: 032217
Description: PFOA - DOD
24 components
Expiration Date: 032222
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): 1.0
NIST Test ID#: 822-275872-11

Solvent(s):	Lot#	
Methanol (1 mM KOH)	031317	(98%)
2-Propanol	23214	(2%)

5E-05 Balance Uncertainty
0.007 Flask Uncertainty

Volume(s) shown below were combined and diluted to (mL): 50.0

Paul Barron		032217
Formulated By:	Paul Barron	DATE
Pedro Rentas		032217
Reviewed By:	Pedro L. Rentas	DATE

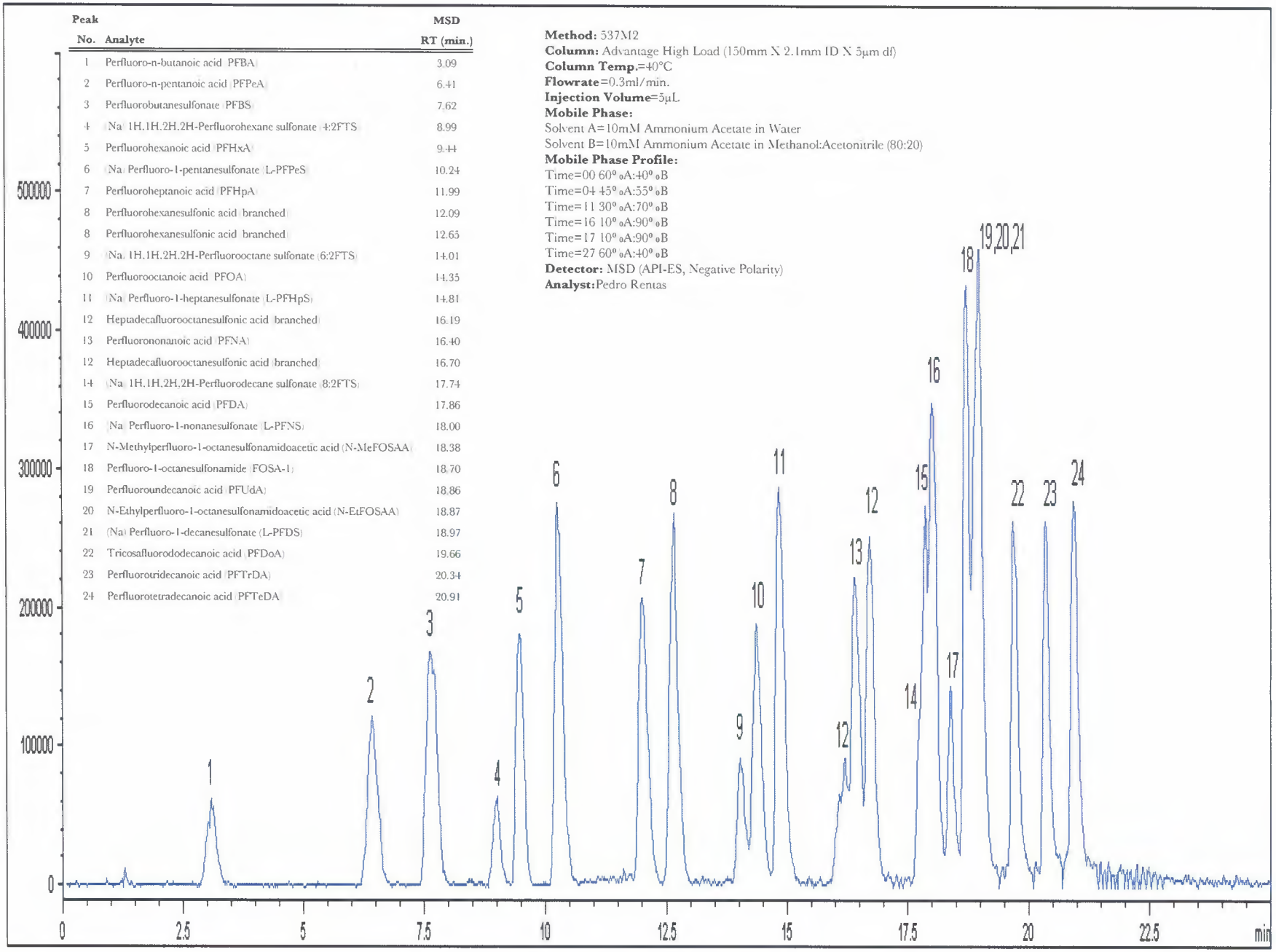
Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(µg/mL)	Final Conc.(µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanoic acid	3670	PFBA0516	0.02	1.00	0.004	50.0	1.00	0.01	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid	3669	PFPeA0516	0.02	1.00	0.004	50.0	1.00	0.01	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid	99199	030617	0.02	1.00	0.004	50.3	1.01	0.01	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid	99197	030517	0.02	1.00	0.004	50.1	1.00	0.01	375-85-9	N/A	N/A
5. Perfluorooctanoic acid	99202	030617	0.02	1.00	0.004	50.2	1.00	0.01	335-67-1	N/A	ipr-rat 189mg/kg
6. Perfluorononanoic acid	99200	030617	0.02	1.00	0.004	50.1	1.00	0.01	375-95-1	N/A	N/A
7. Perfluorodecanoic acid	99195	030617	0.02	1.00	0.004	50.1	1.00	0.01	335-76-2	N/A	orl-rat 57mg/kg
8. Perfluoroundecanoic acid	99205	030617	0.02	1.00	0.004	50.1	1.00	0.01	2058-94-8	N/A	N/A
9. Tricosafluorododecanoic acid	99196	030617	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid	99204	030617	0.02	1.00	0.004	50.1	1.00	0.01	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid	99203	030617	0.02	1.00	0.004	50.1	1.00	0.01	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide	3677	FOSA0916I	0.02	1.00	0.004	50.0	1.00	0.01	754-91-6	N/A	N/A
13. N-Methylperfluoro-1-octanesulfonamidoacetic acid	3667	NMeFOSAA0117	0.02	1.00	0.004	50.0	1.00	0.01	2355-31-9	N/A	N/A
14. N-Ethylperfluoro-1-octanesulfonamidoacetic acid	3664	NEtFOSAA0117	0.02	1.00	0.004	50.0	1.00	0.01	2991-50-6	N/A	N/A
15. Perfluorobutanesulfonic acid	99194	031017	0.02	1.00	0.004	50.7	1.01	0.01	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid	3956	LPFPeS0117	0.0214	1.07	0.004	46.9	1.00	0.01	00-00-0	N/A	N/A
17. Perfluorohexanesulfonic acid (branched)	99198	030617	0.02	1.00	0.004	50.6	1.01	0.01	3871-99-6	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid	3672	LPFHpS1016	0.021	1.05	0.004	47.6	1.00	0.01	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (branched)	99201	030617	0.02	1.00	0.004	50.2	1.00	0.01	1763-23-1	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid	3957	LPFNS0516	0.021	1.05	0.004	48.0	1.01	0.01	98789-57-2	N/A	N/A
21. Perfluoro-1-decanesulfonic acid	3671	LPFDS0217	0.021	1.05	0.004	48.2	1.01	0.01	2806-15-7	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid	3955	42FTS1216	0.0214	1.07	0.004	46.7	1.00	0.01	00-00-0	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid	3661	62FTS0616	0.021	1.05	0.004	47.4	1.00	0.01	27619-97-2	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid	3662	82FTS1216	0.021	1.05	0.004	47.9	1.01	0.01	39108-34-4	N/A	N/A

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

Peak No.	Analyte	MSD RT (min.)
1	Perfluoro-n-butanoic acid (PFBA)	3.09
2	Perfluoro-n-pentanoic acid (PFPeA)	6.41
3	Perfluorobutanesulfonate (PFBS)	7.62
4	(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2FTS)	8.99
5	Perfluorohexanoic acid (PFHxA)	9.44
6	(Na) Perfluoro-1-pentanesulfonate (L-PFPeS)	10.24
7	Perfluoroheptanoic acid (PFHpA)	11.99
8	Perfluorohexanesulfonic acid (branched)	12.09
8	Perfluorohexanesulfonic acid (branched)	12.65
9	(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2FTS)	14.01
10	Perfluorooctanoic acid (PFOA)	14.35
11	(Na) Perfluoro-1-heptanesulfonate (L-PFHpS)	14.81
12	Heptadecafluorooctanesulfonic acid (branched)	16.19
13	Perfluorononanoic acid (PFNA)	16.40
12	Heptadecafluorooctanesulfonic acid (branched)	16.70
14	(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2FTS)	17.74
15	Perfluorodecanoic acid (PFDA)	17.86
16	(Na) Perfluoro-1-nonanesulfonate (L-PFNS)	18.00
17	N-Methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	18.38
18	Perfluoro-1-octanesulfonamide (FOSA-1)	18.70
19	Perfluoroundecanoic acid (PFUdA)	18.86
20	N-Ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	18.87
21	(Na) Perfluoro-1-decanesulfonate (L-PFDS)	18.97
22	Tricosafluorododecanoic acid (PFDoA)	19.66
23	Perfluorotridecanoic acid (PFTrDA)	20.34
24	Perfluorotetradecanoic acid (PFTeDA)	20.91

Method: 537M2
Column: Advantage High Load (150mm X 2.1mm ID X 5µm df)
Column Temp.=40°C
Flowrate=0.3ml/min.
Injection Volume=5µL
Mobile Phase:
Solvent A=10mM Ammonium Acetate in Water
Solvent B=10mM Ammonium Acetate in Methanol:Acetonitrile (80:20)
Mobile Phase Profile:
Time=00 60% A:40% B
Time=04 45% A:55% B
Time=11 30% A:70% B
Time=16 10% A:90% B
Time=17 10% A:90% B
Time=27 60% A:40% B
Detector: MSD (API-ES, Negative Polarity)
Analyst: Pedro Rentas



BATTELLE

It can be done

BDO Id: 171025-01

Reagent Receipt Report

Approved: ☐ ☐

Name: PFOA - 2nd Source
Vendor: ABSOLUTE STANDARDS
Catalogue No: 99207
Type: Solution
Lot No: 032217
Quantity: 5 ea ml
% Moisture:
Description: PFOA-DOD

Received: 10/25/2017
Custodian: Schumitz, Matt
Expires: 3/22/2022
Consumed:
Stored In: LC Laboratory - F0111

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
(Na) 1H,1H,2H,2H-Perfluorodecane	39108-34-4	1.0100	100.00	--	--	☐			
(Na) 1H,1H,2H,2H-Perfluorohexane	BDO-2205	1.0000	100.00	--	--	☐			
(Na) 1H,1H,2H,2H-Perfluorooctane s	27619-97-2	1.0000	100.00	--	--	☐			
(Na) Perfluoro-1-decanesulfonate	2806-15-7	1.0100	100.00	--	--	☐			
(NA) Perfluoro-1-heptanesulfonate	375-92-8	1.0000	100.00	--	--	☐			
(Na) Perfluoro-1-nonanesulfonate	98789-57-2	1.0100	100.00	--	--	☐			
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	1.0000	100.00	--	--	☐			
N-methylperfluoro-1-octanesulfonami	2355-31-9	1.0000	100.00	--	--	☐			
Perfluoro-1-butanesulfonic Acid	375-73-5	1.0100	100.00	--	--	☐			
Perfluoro-1-hexanesulfonic Acid	355-46-4	1.0100	100.00	--	--	☐			
Perfluoro-1-octanesulfonamide	754-91-6	1.0000	100.00	--	--	☐			
Perfluoro-1-octanesulphonic Acid	1763-23-1	1.0000	100.00	--	--	☐			
Perfluoro-n-butanoic Acid	375-22-4	1.0000	100.00	--	--	☐			
Perfluoro-n-decanoic Acid	335-76-2	1.0000	100.00	--	--	☐			
Perfluoro-n-dodecanoic acid	307-55-1	1.0000	100.00	--	--	☐			
Perfluoro-n-heptanoic Acid	375-85-9	1.0000	100.00	--	--	☐			
Perfluoro-n-hexanoic acid	307-24-4	1.0100	100.00	--	--	☐			
Perfluoro-n-octanoic Acid	335-67-1	1.0000	100.00	--	--	☐			
Perfluorononanoic Acid	375-95-1	1.0000	100.00	--	--	☐			
Perfluoro-n-pentanoic acid	2706-90-3	1.0000	100.00	--	--	☐			
Perfluoro-n-tetradecanoic acid	376-06-7	1.0000	100.00	--	--	☐			
Perfluoro-n-tridecanoic acid	72629-94-8	1.0000	100.00	--	--	☐			
Perfluoro-n-undecanoic acid	2058-94-8	1.0000	100.00	--	--	☐			
Sodium perfluoro-1-pentanesulfonat	BDO-2114	1.0000	100.00	--	--	☐			

Total Analytes: 24

Notes:

Approved by: _____ **Approved on:** _____

Authorized by: _____ **Authorized on:** _____

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Analytical Reference Material ARM

ISO 9001 QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

1710250d

Part Number: 99207
Lot Number: 101717
Description: PFOA - DOD
24 components
Expiration Date: 101722
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): 1.0
NIST Test ID#: 2506734D

Solvent(s):	Lot#	
Methanol (1 mM KOH)	031317	(98%)
2-Propanol	23214	(2%)

5E-05 Balance Uncertainty
Volume(s) shown below were combined and diluted to (mL): 50.0 0.007 Flask Uncertainty

Formulated By: Mario Luis 101717 DATE

Reviewed By: Pedro L. Rentas 101717 DATE

Note: All assigned values are anion concentrations.

	Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(µg/mL)	Final Conc.(µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	Perfluoro-n-butanoic acid	3670	PFBA0516	0.02	1.00	0.004	50.0	1.00	0.01	375-22-4	N/A	N/A
2.	Perfluoro-n-pentanoic acid	3669	PFPeA0617	0.02	1.00	0.004	50.0	1.00	0.01	2706-90-3	N/A	N/A
3.	Perfluorohexanoic acid	99199	030617	0.02	1.00	0.004	50.3	1.01	0.01	307-24-4	N/A	N/A
4.	Perfluoroheptanoic acid	99197	030517	0.02	1.00	0.004	50.1	1.00	0.01	375-85-9	N/A	N/A
5.	Perfluorooctanoic acid	99202	030617	0.02	1.00	0.004	50.2	1.00	0.01	335-67-1	N/A	ipr-rat 189mg/kg
6.	Perfluorononanoic acid	99200	030617	0.02	1.00	0.004	50.1	1.00	0.01	375-95-1	N/A	N/A
7.	Perfluorodecanoic acid	99195	030617	0.02	1.00	0.004	50.1	1.00	0.01	335-76-2	N/A	orl-rat 57mg/kg
8.	Perfluoroundecanoic acid	99205	030617	0.02	1.00	0.004	50.1	1.00	0.01	2058-94-8	N/A	N/A
9.	Tricosafluorododecanoic acid	99196	030617	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10.	Perfluorotridecanoic acid	99204	030617	0.02	1.00	0.004	50.1	1.00	0.01	72629-94-8	N/A	N/A
11.	Perfluorotetradecanoic acid	99203	030617	0.02	1.00	0.004	50.1	1.00	0.01	376-06-7	N/A	N/A
12.	Perfluoro-1-octanesulfonamide	3677	FOSA0916I	0.02	1.00	0.004	50.0	1.00	0.01	754-91-6	N/A	N/A
13.	N-Methylperfluoro-1-octanesulfonamidoacetic acid	3667	NMeFOSAA0117	0.02	1.00	0.004	50.0	1.00	0.01	2355-31-9	N/A	N/A
14.	N-Ethylperfluoro-1-octanesulfonamidoacetic acid	3664	NEtFOSAA0117	0.02	1.00	0.004	50.0	1.00	0.01	2991-50-6	N/A	N/A
15.	Perfluorobutanesulfonic acid	99194	031017	0.02	1.00	0.004	50.7	1.01	0.01	375-73-5	N/A	N/A
16.	Perfluoro-1-pentanesulfonic acid	3956	LPFPeS0117	0.0214	1.07	0.004	46.9	1.00	0.01	630402-22-1	N/A	N/A
17.	Perfluorohexanesulfonic acid (branched)	99198	030617	0.02	1.00	0.004	50.6	1.01	0.01	3871-99-6	N/A	N/A
18.	Perfluoro-1-heptanesulfonic acid	3672	LPFHpS0817	0.021	1.05	0.004	47.6	1.00	0.01	375-92-8	N/A	N/A
19.	Heptadecafluorooctanesulfonic acid (branched)	99201	030617	0.02	1.00	0.004	50.2	1.00	0.01	1763-23-1	N/A	N/A
20.	Perfluoro-1-nonanesulfonic acid	3957	LPFNS0516	0.021	1.05	0.004	48.0	1.01	0.01	98789-57-2	N/A	N/A
21.	Perfluoro-1-decanesulfonic acid	3671	LPFDS0217	0.021	1.05	0.004	48.2	1.01	0.01	2806-15-7	N/A	N/A
22.	1H,1H,2H,2H-Perfluorohexane sulfonic acid	3955	42FTS1216	0.0214	1.07	0.004	46.7	1.00	0.01	00-00-0	N/A	N/A
23.	1H,1H,2H,2H-Perfluorooctane sulfonic acid	3661	62FTS0616	0.021	1.05	0.004	47.4	1.00	0.01	27619-97-2	N/A	N/A
24.	1H,1H,2H,2H-Perfluorodecane sulfonic acid	3662	82FTS1216	0.021	1.05	0.004	47.9	1.01	0.01	39108-34-4	N/A	N/A

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

BATTELLE

It can be done

BDO Id: 180618-02

Reagent Receipt Report

Approved: ☐ Authorized ☐

Name:	Branched NEtFOSAA Standard (50 µ	Received:	6/18/2018
Vendor:	Wellington Laboratories	Custodian:	Thorn, Jonathan
Catalogue No:	br-NEtFOSAAA	Expires:	1/17/2023
Type:	Solution	Consumed:	
Lot No:	brNEtFOSAA0118	Stored In:	Sample Preparation - C0103
Quantity:	1 ea mL % Moisture: 0		
Description:	Branched NEtFOSAA Standard (50 µg/mL)		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:

Notes:

Approved by: _____ Approved on: _____

Authorized by: _____ Authorized on: _____

180618-02

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSAA

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

PRODUCT CODE:	br-NEtFOSAA
LOT NUMBER:	brNEtFOSAA0118
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2018
LAST TESTED: (mm/dd/yyyy)	01/17/2018
EXPIRY DATE: (mm/dd/yyyy)	01/17/2023
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED 17034 REFERENCE MATERIAL PRODUCER

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

Table A: **br-NEtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

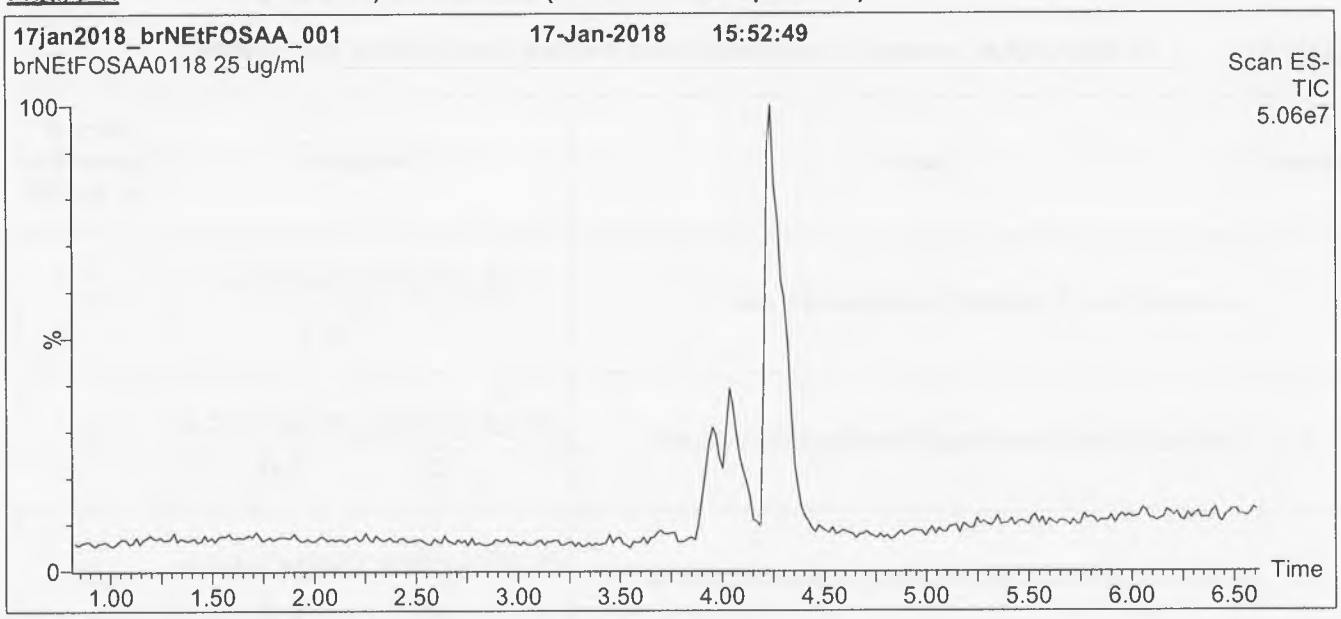
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	0.3
9	Other Unidentified Isomers		1.3

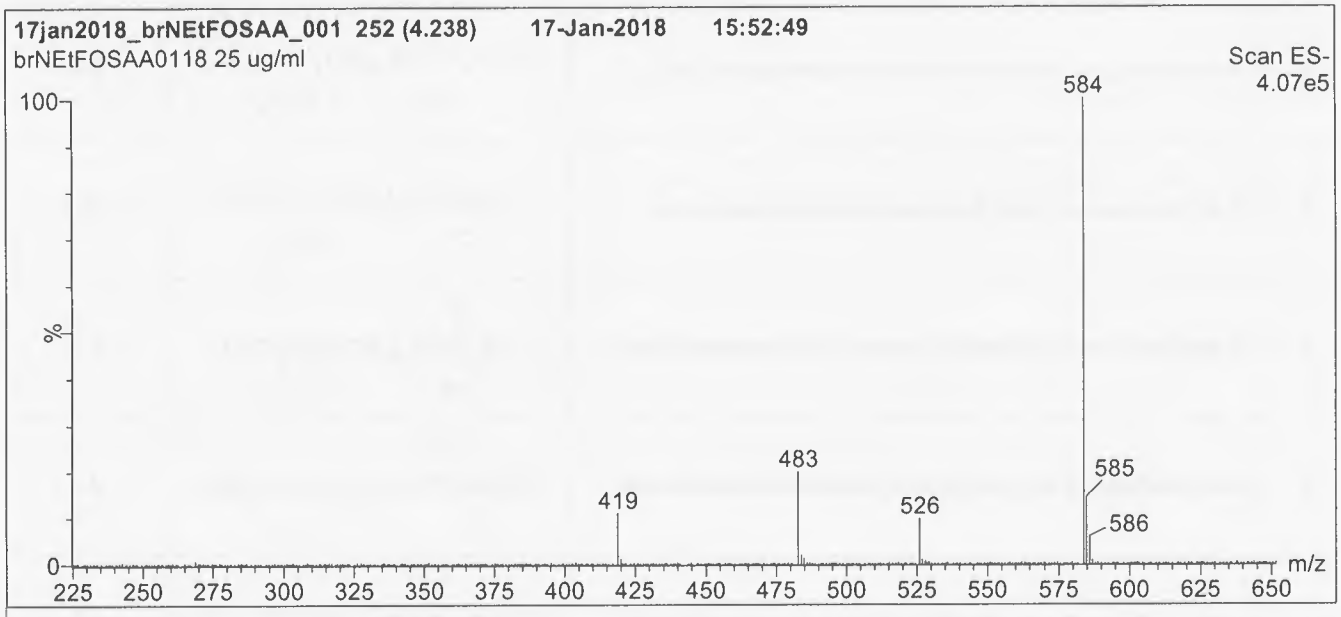
* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Certified By: _____ **Date:** 03/22/2018
(mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **br-NEtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

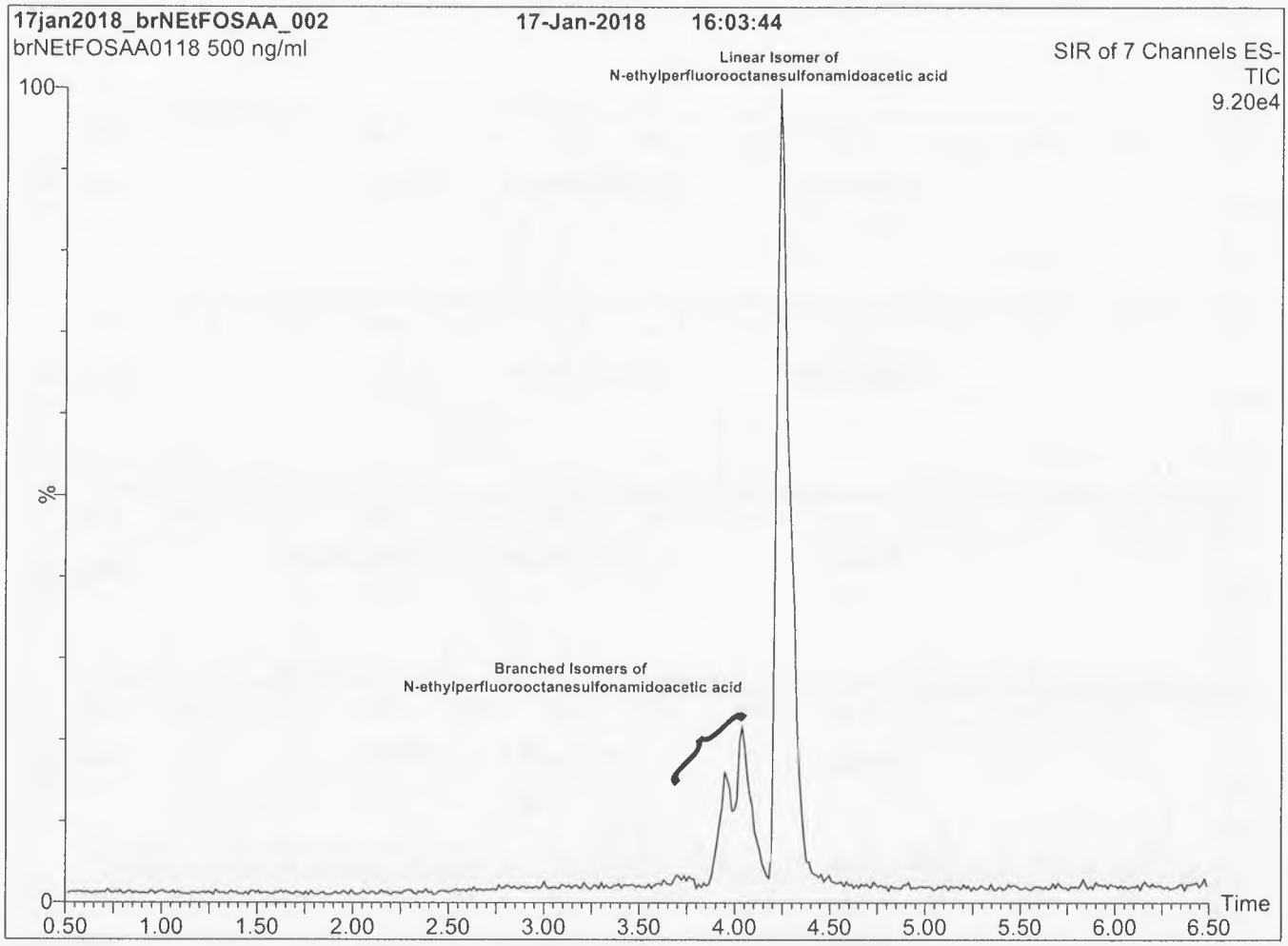
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **br-NEtFOSAA; LC/MS Data (SIR)**



Conditions for Figure 2:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

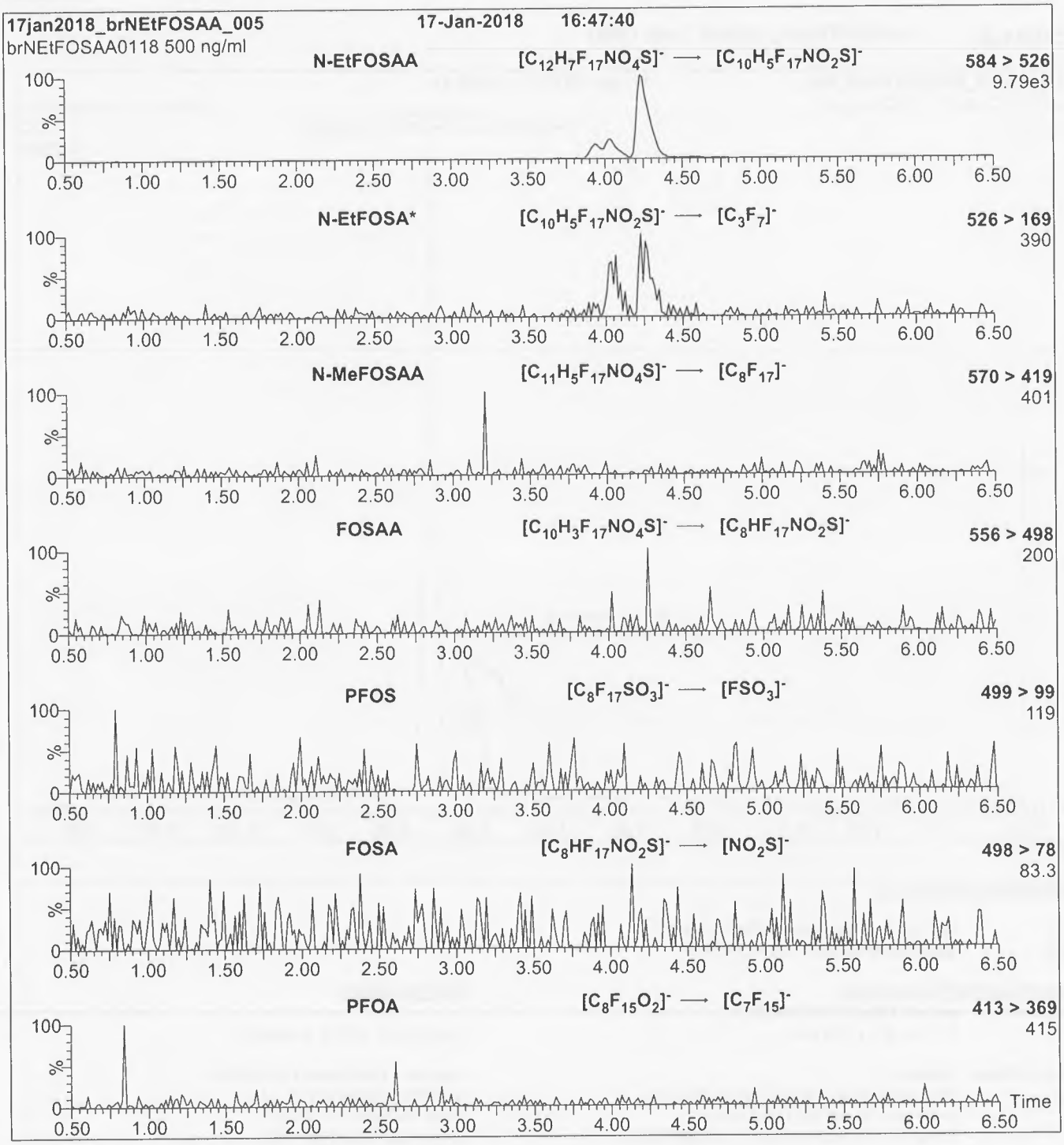
Flow: 300 µl/min

MS Parameters

Experiment: SIR (7 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15-60
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 3: **br-NEtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



***Note**: N-EtFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 11-40 (variable)

BATTELLE
It can be done

BDO Id: 180618-03

Reagent Receipt Report

Approved: ☐ Authorized ☐

Name:	Branched NMeFOSAA Standard (50	Received:	6/18/2018
Vendor:	Wellington Laboratories	Custodian:	Thorn, Jonathan
Catalogue No:	brNMeFOSAA	Expires:	1/17/2023
Type:	Solution	Consumed:	
Lot No:	brNMeFOSAA0118	Stored In:	Sample Preparation - C0103
Quantity:	1 ea mL % Moisture: 0		
Description:	Branched NMeFOSAA Standard (50 µg/mL)		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:

Notes:

Approved by: _____ Approved on: _____

Authorized by: _____ Authorized on: _____

180618-03

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSAA

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

PRODUCT CODE:	br-NMeFOSAA
LOT NUMBER:	brNMeFOSAA0118
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2018
LAST TESTED: (mm/dd/yyyy)	01/17/2018
EXPIRY DATE: (mm/dd/yyyy)	01/17/2023
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER

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

Table A: **br-NMeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

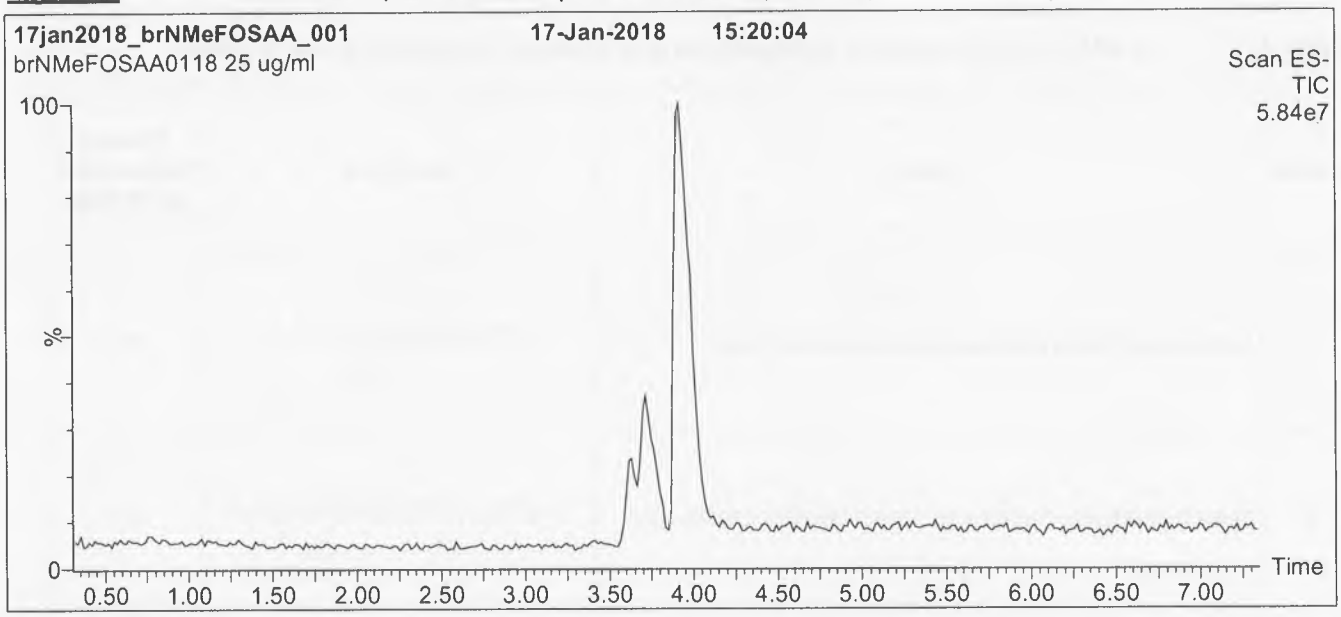
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2
7	Other Unidentified Isomers		1.1

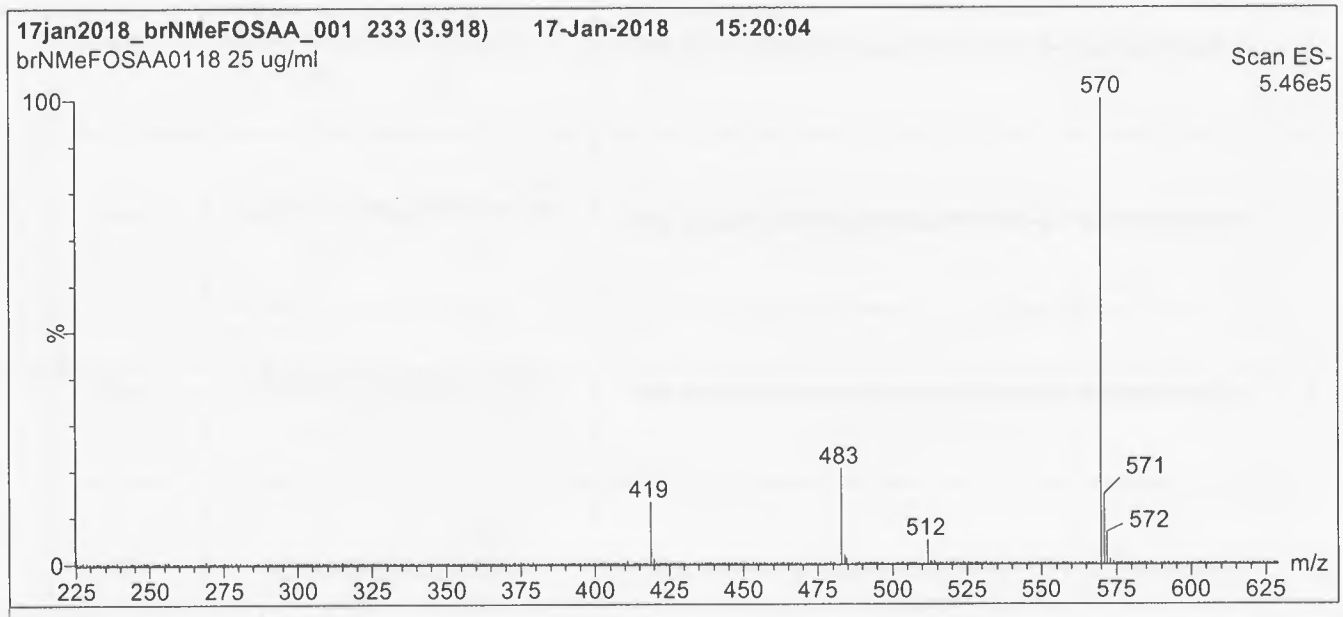
* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Certified By: _____ **Date:** 03/22/2018 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **br-NMeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

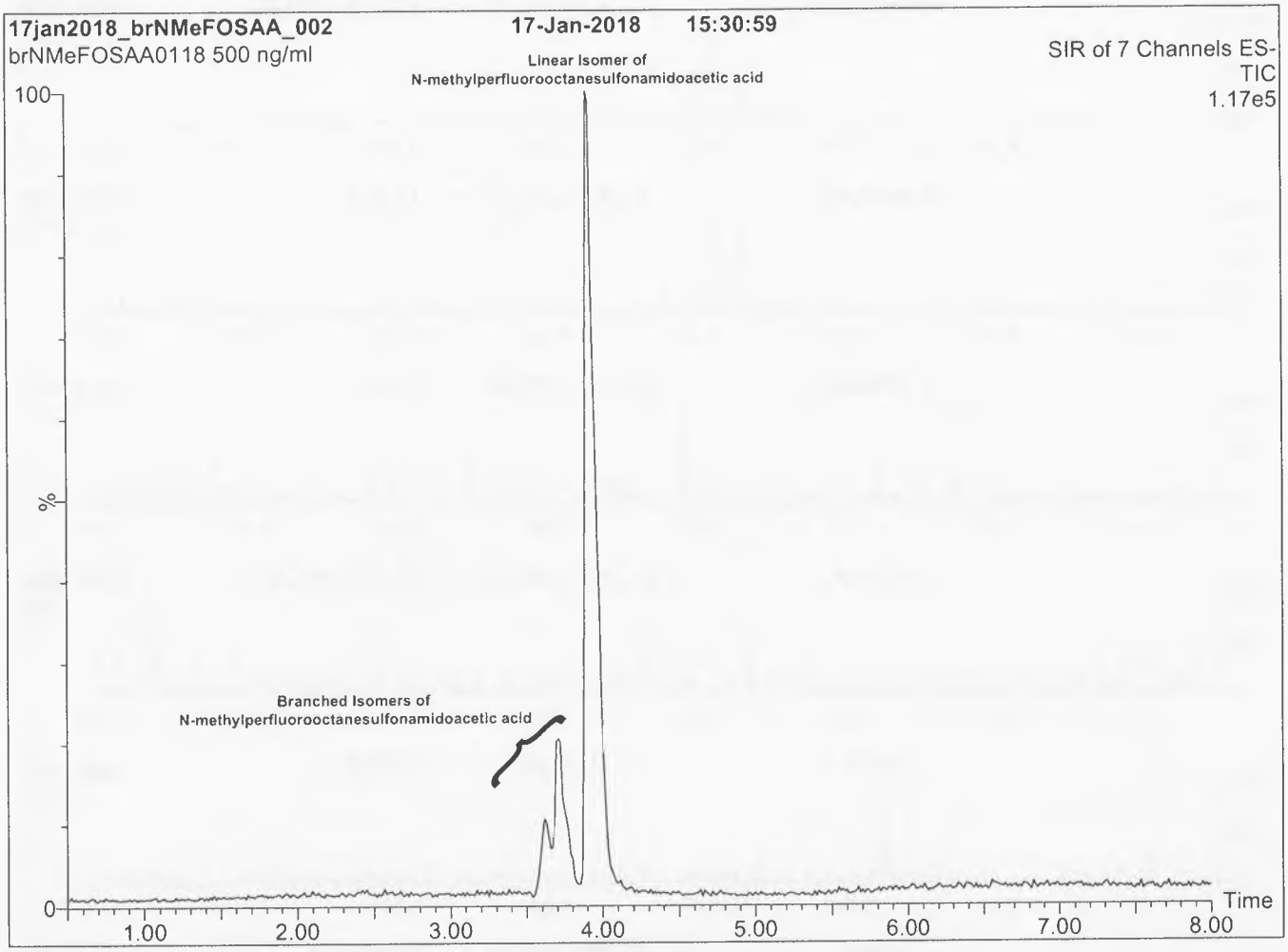
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 35.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **br-NMeFOSAA; LC/MS Data (SIR)**



Conditions for Figure 2:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% (80:20 MeOH:ACN) / 45% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 0.5 min.

Time: 10 min

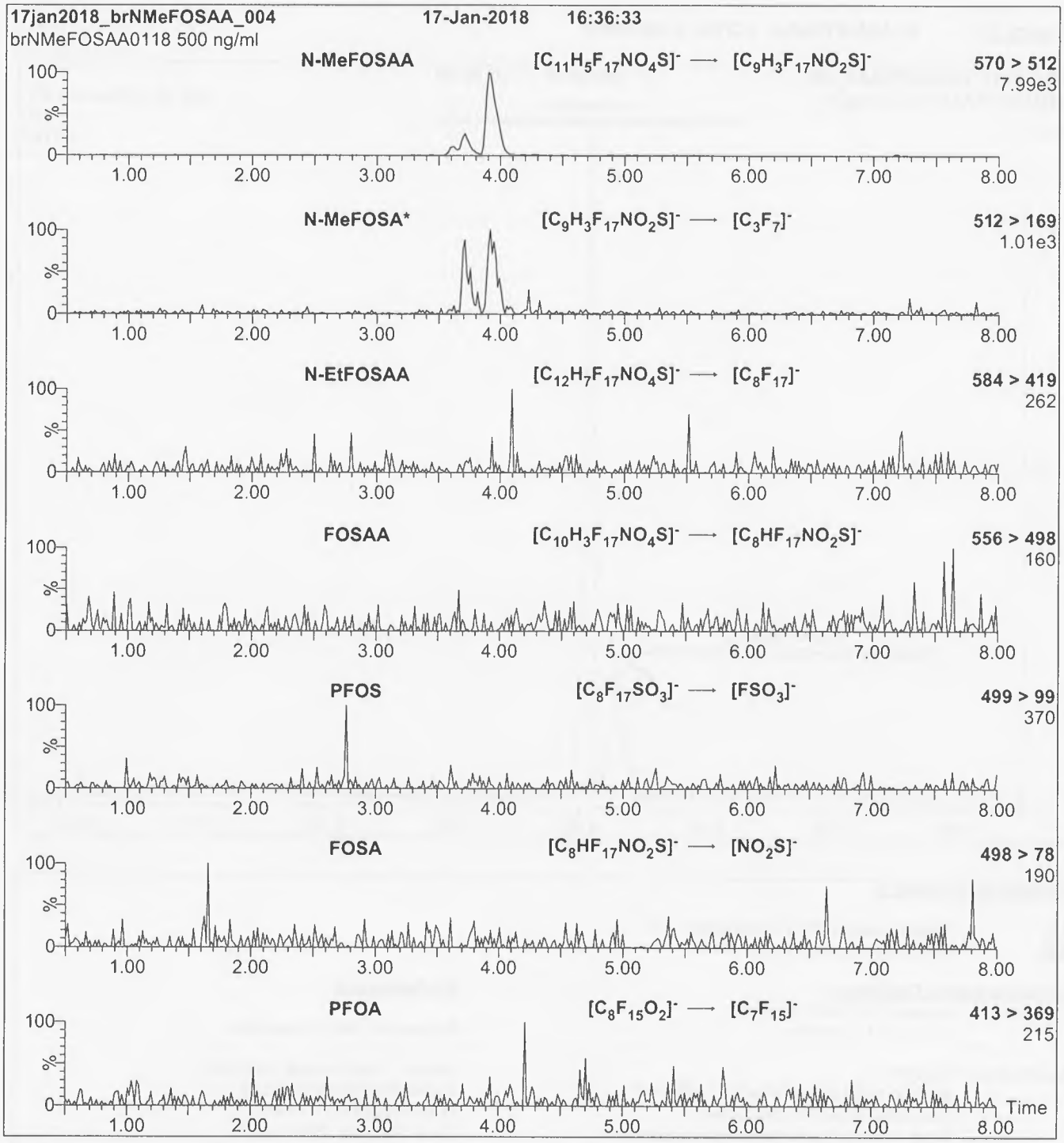
Flow: 300 µl/min

MS Parameters

Experiment: SIR (7 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15-60
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 3: **br-NMeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



*Note: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 11-40 (variable)

BATTELLE

It can be done

BDO Id: 180618-04

Reagent Receipt Report

Approved: ☐ Authorized ☐

Name:	PFOA - Technical Mix	Received:	6/18/2018
Vendor:	Wellington Laboratories	Custodian:	Thorn, Jonathan
Catalogue No:	T-PFOA	Expires:	2/16/2022
Type:	Solution	Consumed:	
Lot No:	TPFOA0217	Stored In:	Sample Preparation - C0103
Quantity:	1 ea mL % Moisture: 0		
Description:	PFOA - Technical Mix		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:

Notes:

Approved by: _____ Approved on: _____

Authorized by: _____ Authorized on: _____

180618-04

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	T-PFOA	**LOT NUMBER:**	TPFOA0217
COMPOUND:	Technical Ammonium Perfluorooctanoate		
STRUCTURE:	(see Table A)	**CAS #:**	95328-99-7 (for linear ammonium perfluorooctanoate)

MOLECULAR FORMULA:	$C_8F_{15}O_2NH_4$
CONCENTRATION:	50 ± 2.5 µg/ml (gravimetric)
CHEMICAL PURITY:	Technical material
SOLVENT(S):	Methanol/Water (<1%)
LAST TESTED: (mm/dd/yyyy)	02/16/2017
EXPIRY DATE: (mm/dd/yyyy)	02/16/2022
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)
Figure 4: LC/MS Elution Profile of the Perfluorooctanoic Acid Isomers

ADDITIONAL INFORMATION:

- See page 2 for further details.
- This technical mixture is >97% ammonium perfluorooctanoate (branched and linear isomers). The remaining 3% consists of common impurities such as the perfluoroheptanoic and perfluorohexanoic acids.
- It is recommended that this solution be used as a *qualitative or semi-quantitative standard only*.
- Contains 4 mole eq. of NaOH to prevent conversion of any carboxylic acids to their corresponding methyl esters.
- The molecular weight of perfluoro-n-octanoic acid is 414.07 g/mol.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim **Date:** 02/22/2017 (mm/dd/yyyy)

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 for the identification and/or semi-quantitative determination of the specific chemical compound(s) 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.

CHARACTERIZATION / HOMOGENEITY:

This product is a technical mixture obtained from an industrial manufacturer. It has been characterized as to its content and components 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. Testing of samples in solution has shown it to be homogeneous. As this product is a technical mixture, it should not be used to quantitate any of the listed components.

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

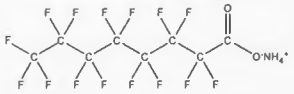
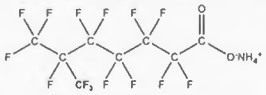
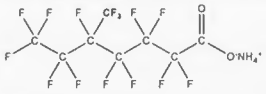
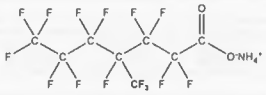
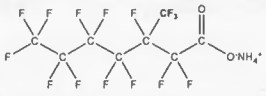
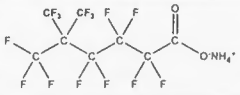
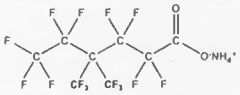
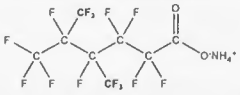
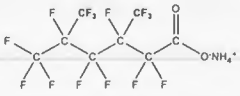
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

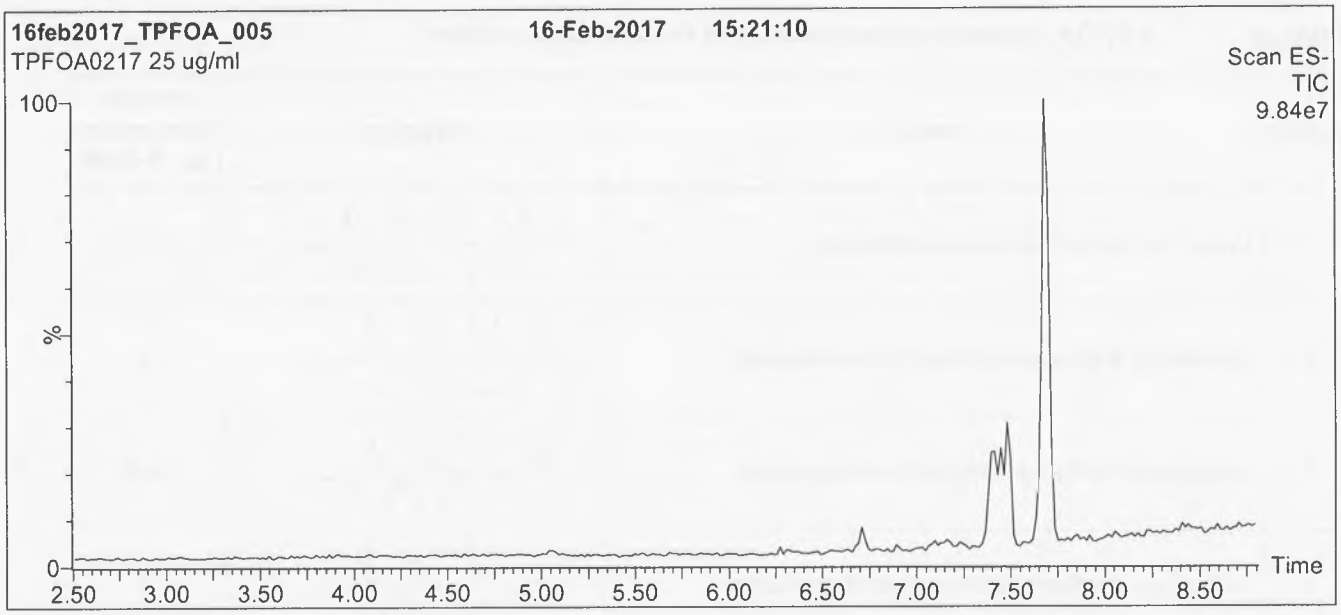
Table A: **T-PFOA; Isomeric Components and Percent Composition***

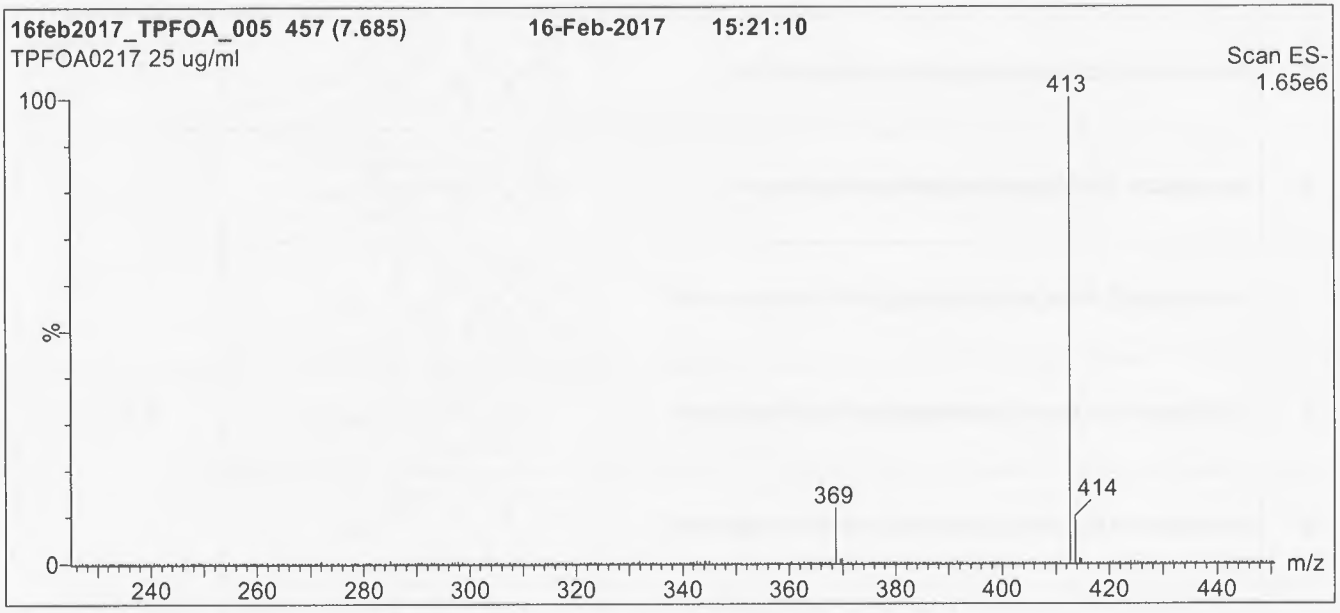
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Linear ammonium perfluoro-n-octanoate		79
2	Ammonium 6-trifluoromethylperfluoroheptanoate		9
3	Ammonium 5-trifluoromethylperfluoroheptanoate		4.5
4	Ammonium 4-trifluoromethylperfluoroheptanoate		4
5	Ammonium 3-trifluoromethylperfluoroheptanoate		3
6[a]	Ammonium 2-trifluoromethylperfluoroheptanoate		0.5
7	Ammonium 5,5-bis(trifluoromethyl)perfluorohexanoate		
8	Ammonium 4,4-bis(trifluoromethyl)perfluorohexanoate		
9[a]	Ammonium 4,5-bis(trifluoromethyl)perfluorohexanoate		
10	Ammonium 3,5-bis(trifluoromethyl)perfluorohexanoate		

* Percent Composition was determined by ^{19}F-NMR. The percentages displayed are of total ammonium perfluorooctanoate isomers only (isomers are labelled in Figure 4).

[a] Presence of this isomer could not be verified by LC/MS due to co-elution.

Figure 1: **T-PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

Column: Kinetex PFP
2.6 µm, 4.6 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 50% organic over 5 min. Ramp to
90% organic over 5 min and hold for 1.5 min.
Return to initial conditions over 0.5 min.
Time: 13 min

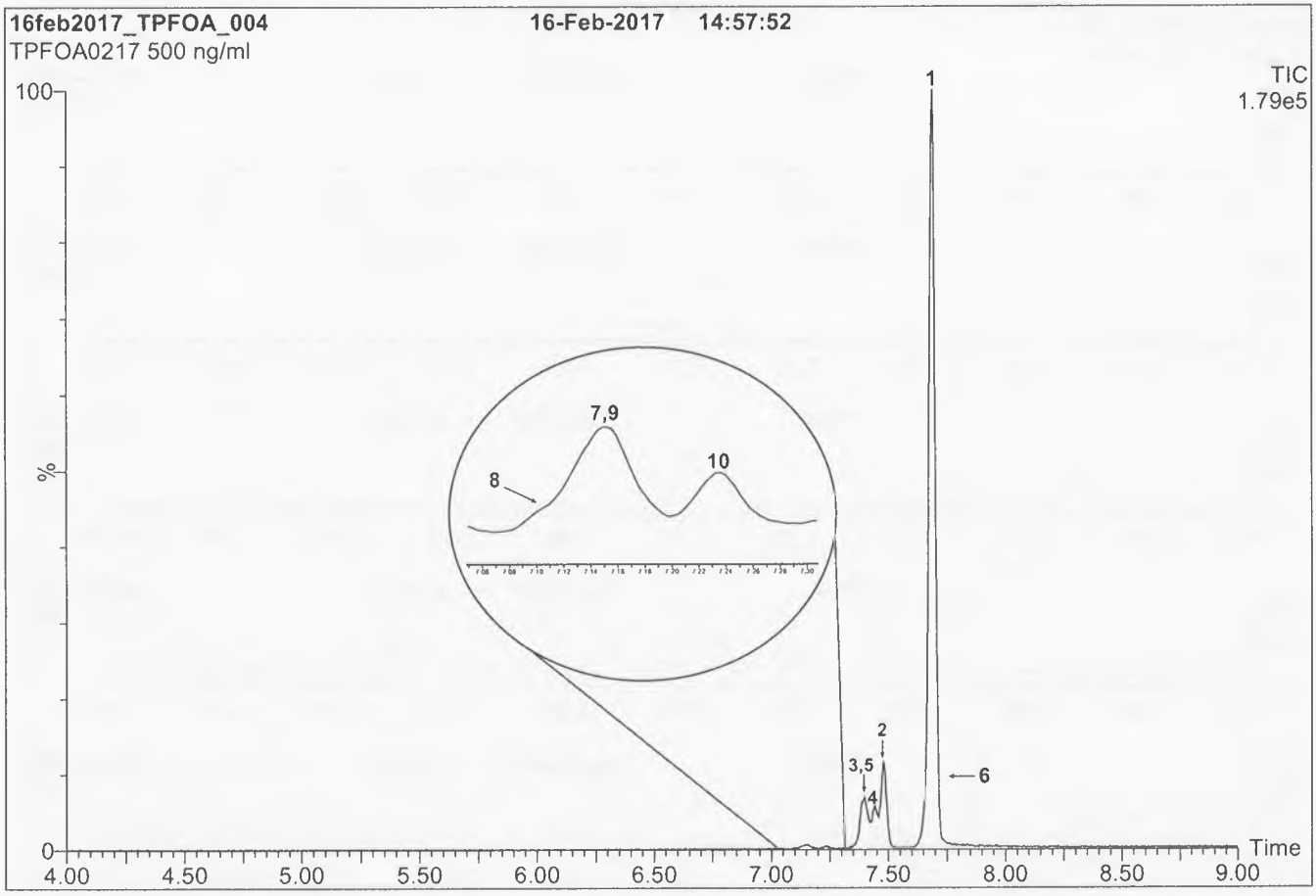
Flow: 1.0 ml/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 15.00
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: **T-PFOA; LC/MS Data (SIR)**



Conditions for Figure 2:

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

Chromatographic Conditions:

Column: Kinetex PFP
2.6 µm, 4.6 x 100 mm

Mobile phase: Gradient
Start: 30% (80:20 MeOH:ACN) / 70% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 50% organic over 5 min. Ramp to
90% organic over 5 min and hold for 1.5 min.
Return to initial conditions over 0.5 min.
Time: 13 min

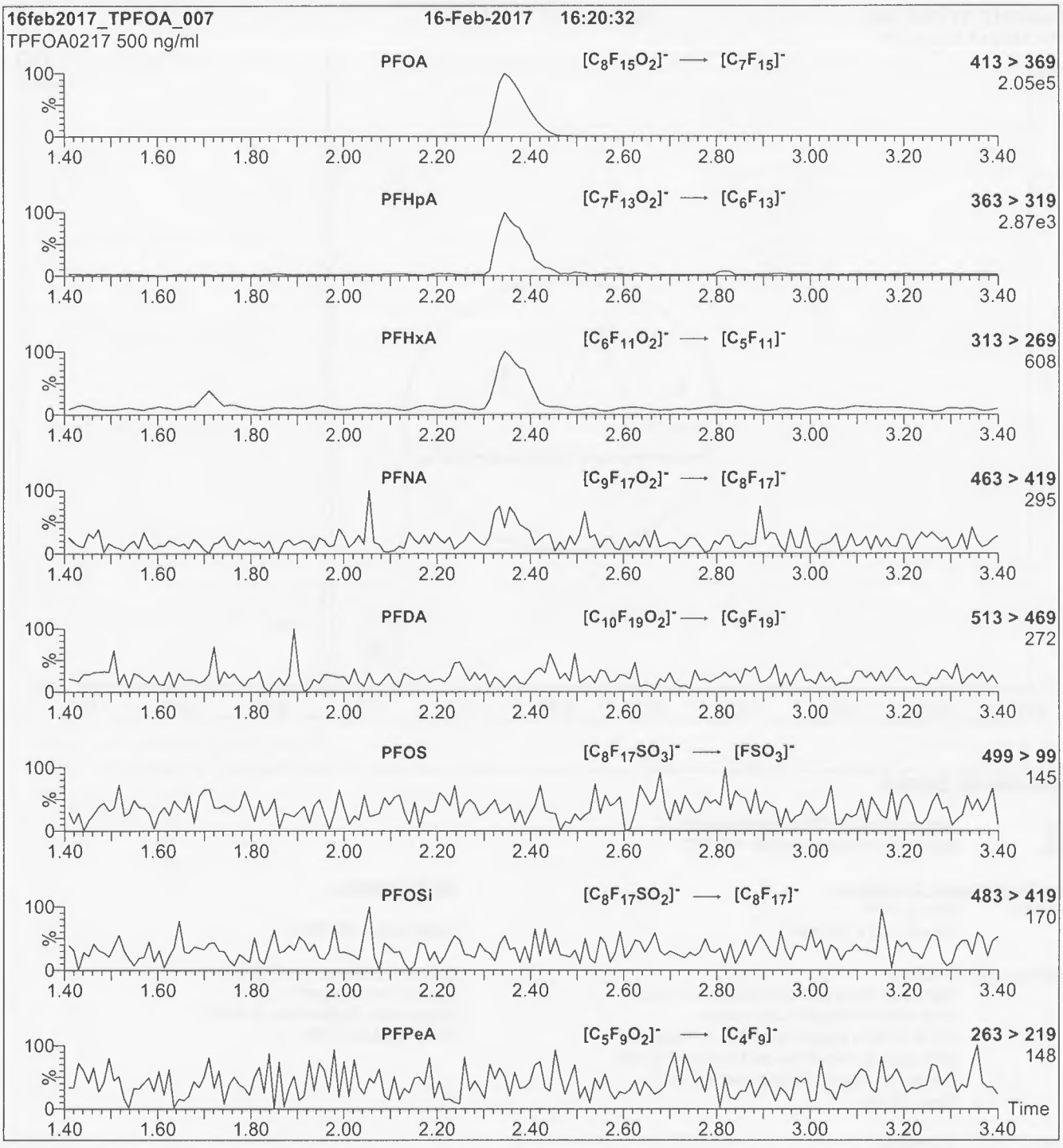
Flow: 1.0 ml/min

MS Parameters:

Experiment: SIR (ES^-)

Source conditions: see Figure 1
Source Temperature = 110 °C
Desolvation Temperature = 325 °C
Cone Voltage = 15V

Figure 3: **T-PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml T-PFOA)

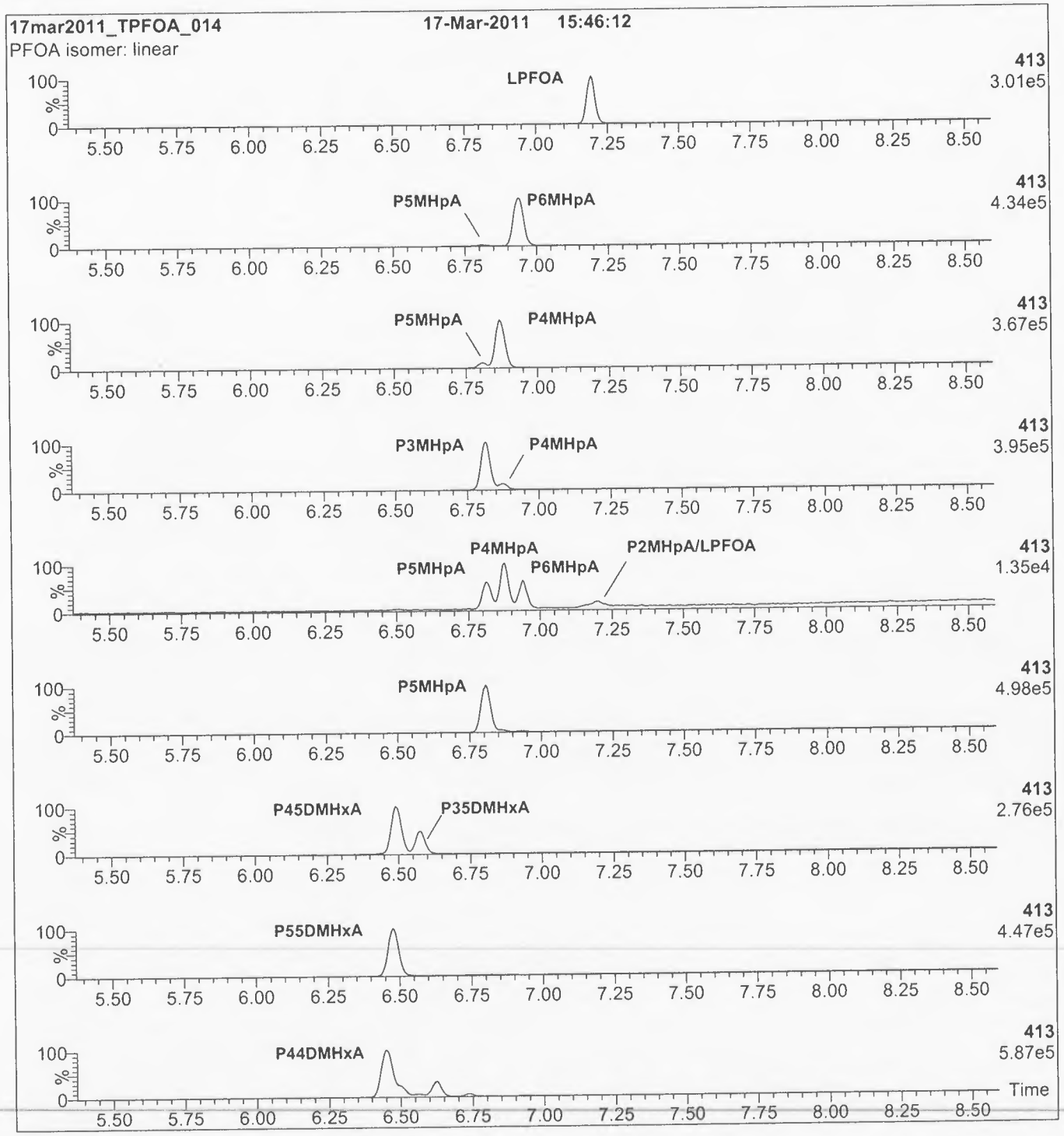
Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = variable (9-40)

Figure 4: **T-PFOA; LC/MS Elution Profile of the Perfluorooctanoic Acid Isomers**



Conditions for Figure 4:

Same as Figure 2.

BATTELLE

It can be done

BDO Id: 180618-06

Reagent Receipt Report

Approved: ☐ Authorized ☐

Name:	Branched PFHxS Standard (50 µg/m	Received:	6/18/2018
Vendor:	Wellington Laboratories	Custodian:	Thorn, Jonathan
Catalogue No:	br-PFHxSK	Expires:	1/4/2022
Type:	Solution	Consumed:	
Lot No:	brPFHxSK0117	Stored In:	Sample Preparation - C0103
Quantity:	1 ea mL % Moisture: 0		
Description:	Branched PFHxS Standard (50 µg/mL)		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:

Notes:

Approved by: _____ Approved on: _____

Authorized by: _____ Authorized on: _____

180618-06

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFHxSK

Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFHxSK
LOT NUMBER:	brPFHxSK0117
CONCENTRATION:	50.0 ± 2.5 µg/ml (total potassium salt)
	45.5 ± 2.3 µg/ml (total PFHxS anion)
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	01/03/2017
LAST TESTED: (mm/dd/yyyy)	01/04/2017
EXPIRY DATE: (mm/dd/yyyy)	01/04/2022
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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 are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

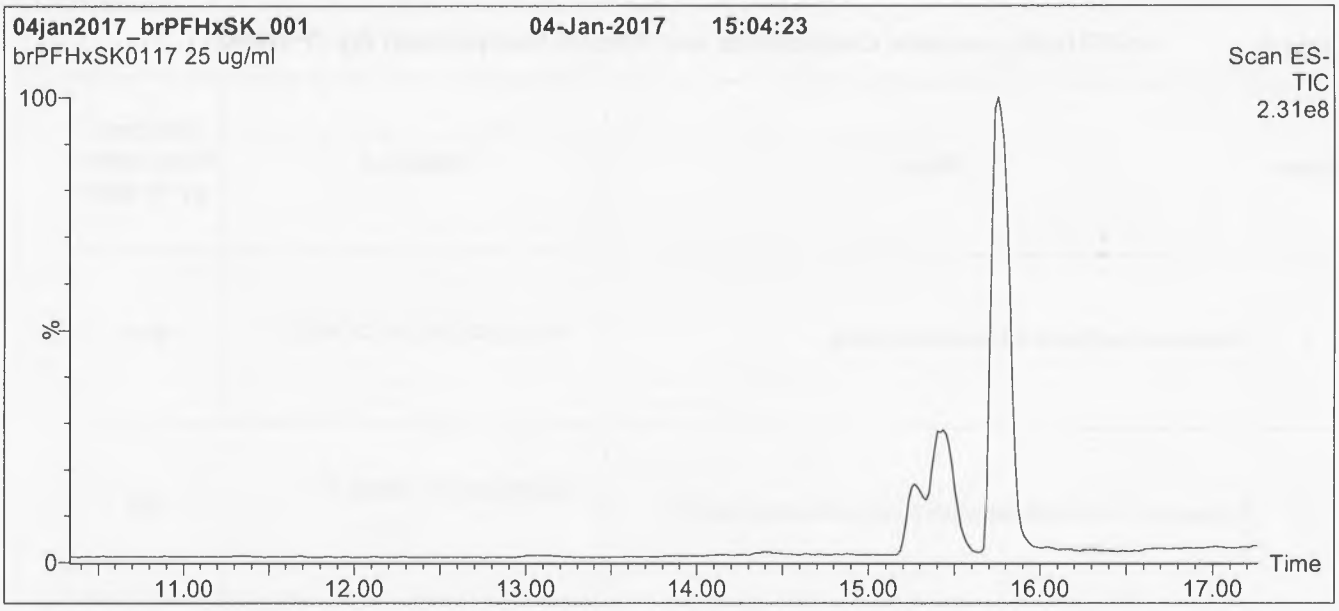
Table A: **br-PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

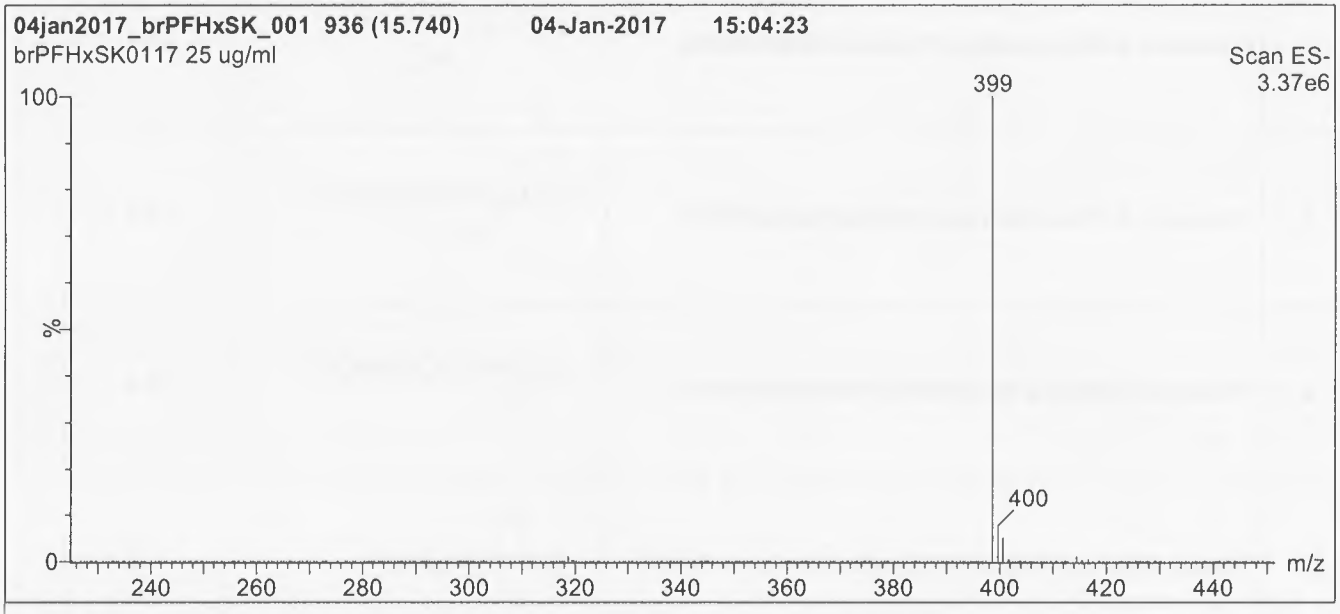
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)_2CF_2CF_2SO_3^-K^+$	0.2
7	Other Unidentified Isomers		0.5

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

Certified By: B.G. Chittim **Date:** 01/20/2017 (mm/dd/yyyy)

Figure 1: **br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 50% organic over 14 min. Ramp to 90% organic over 3 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 20 min

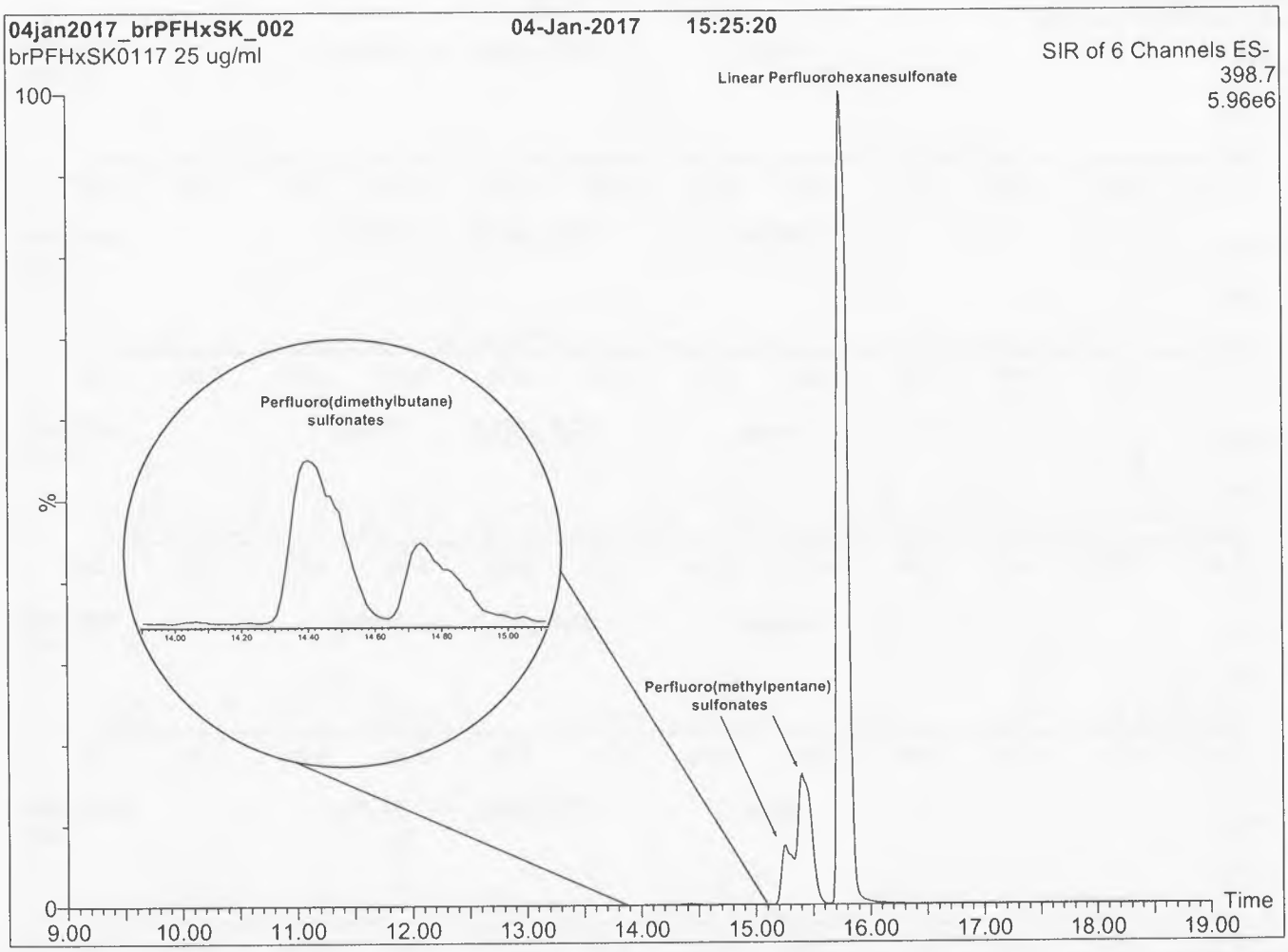
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 50.00
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 2: **br-PFHxSK; LC/MS Data (SIR)**



Conditions for Figure 2:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 20% (80:20 MeOH:ACN) / 80% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 50% organic over 14 min. Ramp to 90% organic over 3 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 20 min

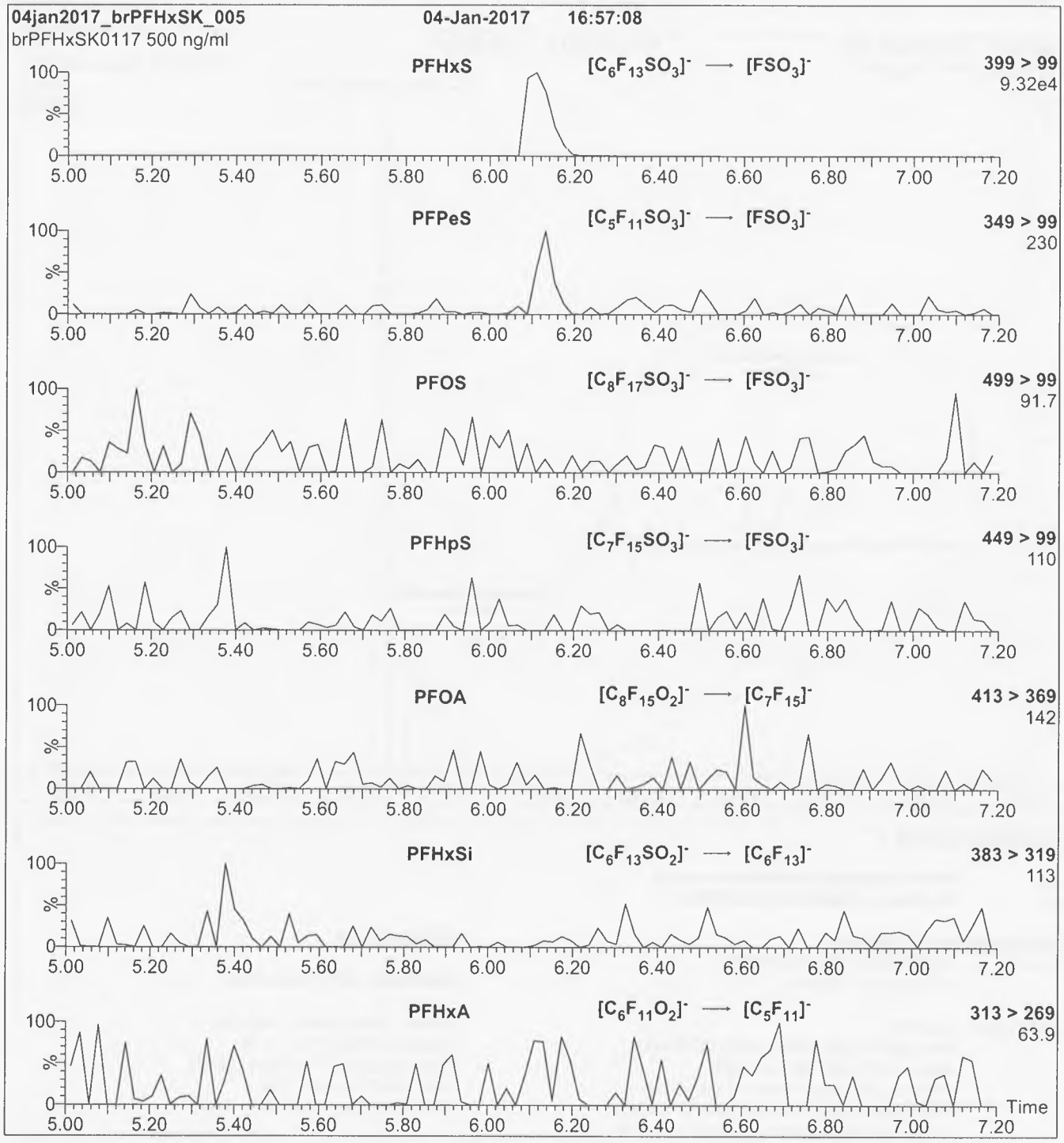
Flow: 300 µl/min

MS Parameters

Experiment: SIR (6 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = variable (15-62)
Cone Gas Flow (l/hr) = 60
Desolvation Gas Flow (l/hr) = 750

Figure 3: **br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: Direct loop injection
10 µl (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 30

BATTELLE

It can be done

BDO Id: 180618-07

Reagent Receipt Report

Approved: ☐ Authorized ☐

Name:	Branched PFOS Standard (50 µg/mL	**Received:**	6/18/2018
Vendor:	Wellington Laboratories	**Custodian:**	Thorn, Jonathan
Catalogue No:	br-PFOSK	**Expires:**	1/12/2022
Type:	Solution	**Consumed:**	
Lot No:	brPFOSK0117	**Stored In:**	Sample Preparation - C0103
Quantity:	1 ea mL **% Moisture:** 0		
Description:	Branched PFOS Standard (50 µg/mL)		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:

Notes:

Approved by: _____ Approved on: _____

Authorized by: _____ Authorized on: _____

180618-07

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFOSK
LOT NUMBER:	brPFOSK0117
CONCENTRATION:	50 ± 2.5 µg/ml (total potassium salt)
	46.4 ± 2.3 µg/ml (total PFOS anion)
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	01/09/2017
LAST TESTED: (mm/dd/yyyy)	01/12/2017
EXPIRY DATE: (mm/dd/yyyy)	01/12/2022
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories 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 are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

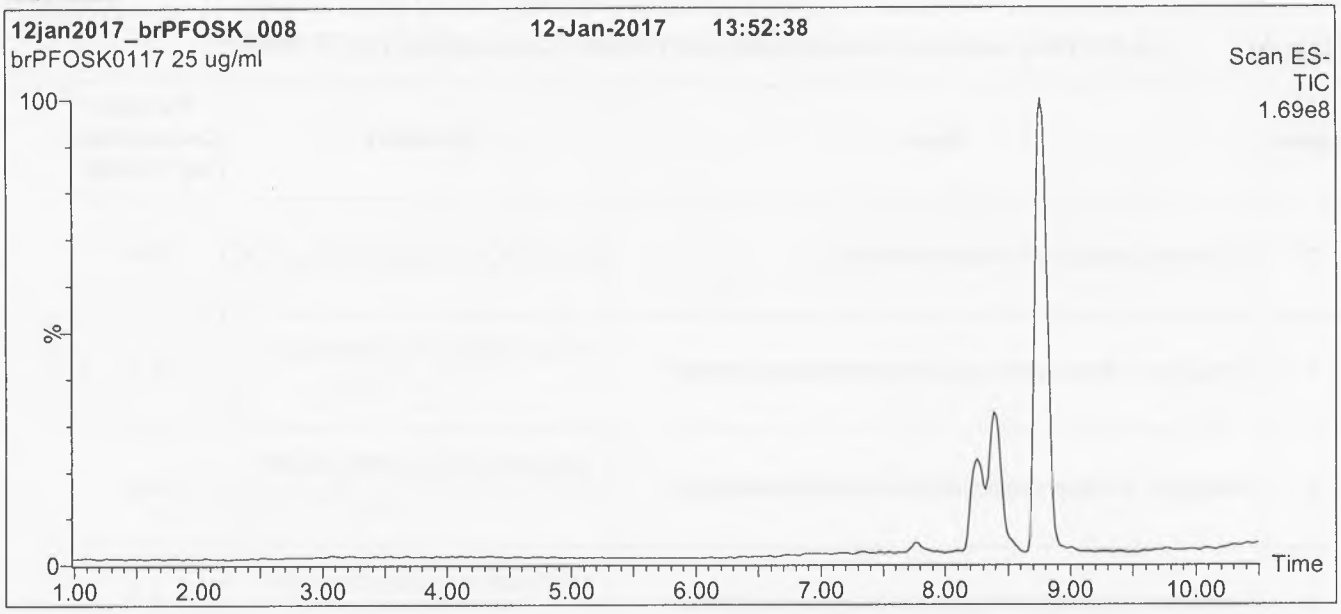
Table A: **br-PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

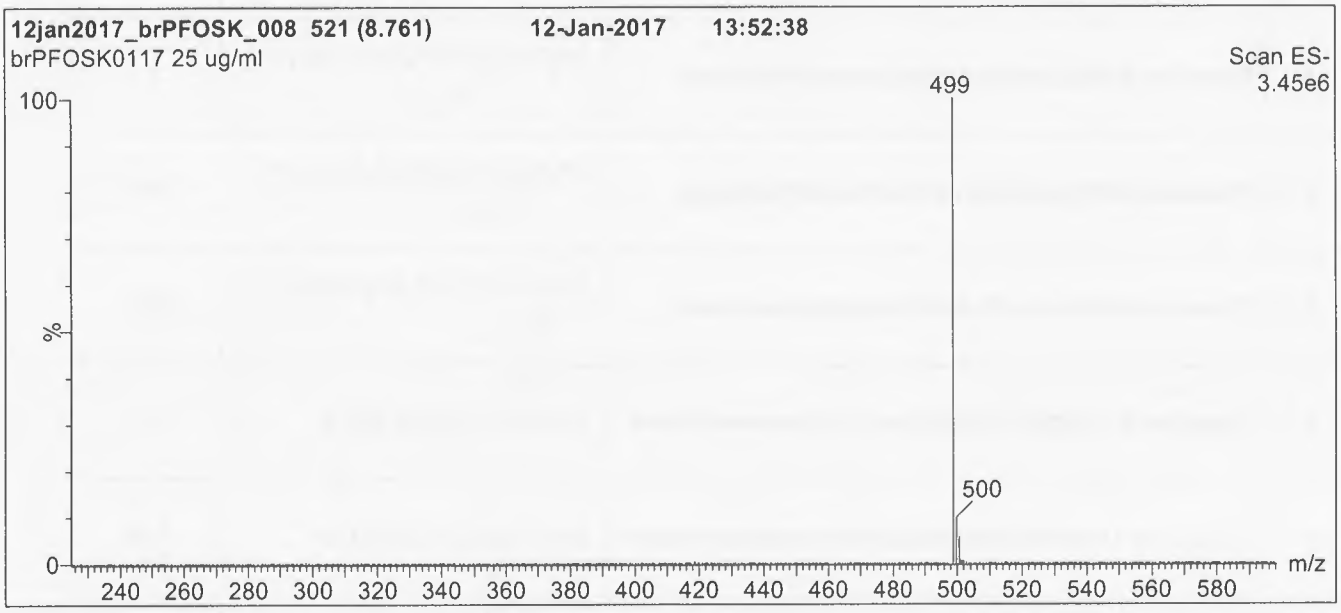
Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.4
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2SO_3^-K^+$	0.07

* Percent of total perfluorooctanesulfonate isomers only. Isomers are labelled in Figure 2.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: B.G. Chittim **Date:** 01/20/2017 (mm/dd/yyyy)

Figure 1: **br-PFOSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% (80:20 MeOH:ACN) / 55% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 12 min and hold for 2 min.
Return to initial conditions over 0.5 min.
Time: 16 min

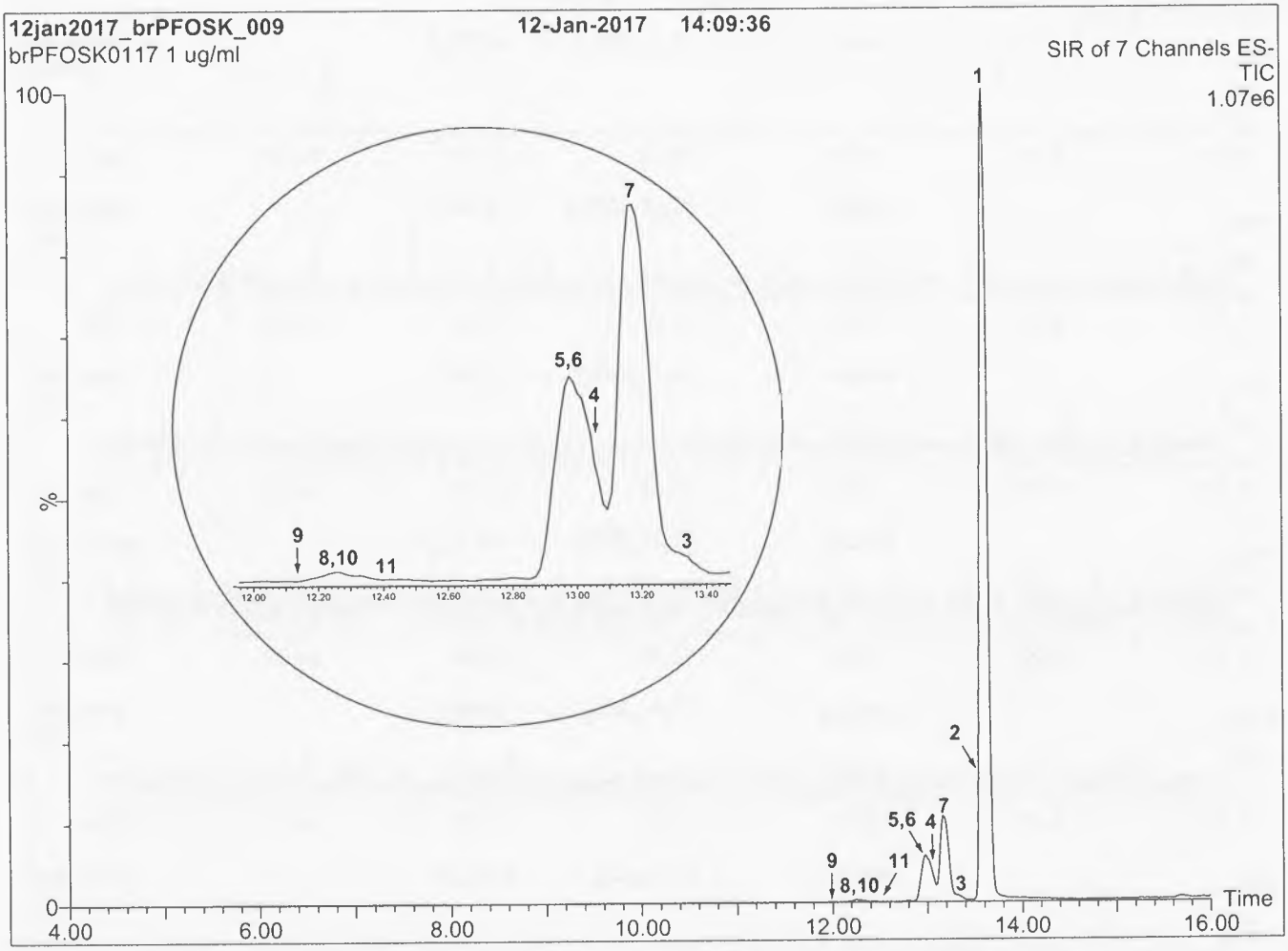
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = 60.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **br-PFOSK; LC/MS Data (SIR)**



Conditions for Figure 2:

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

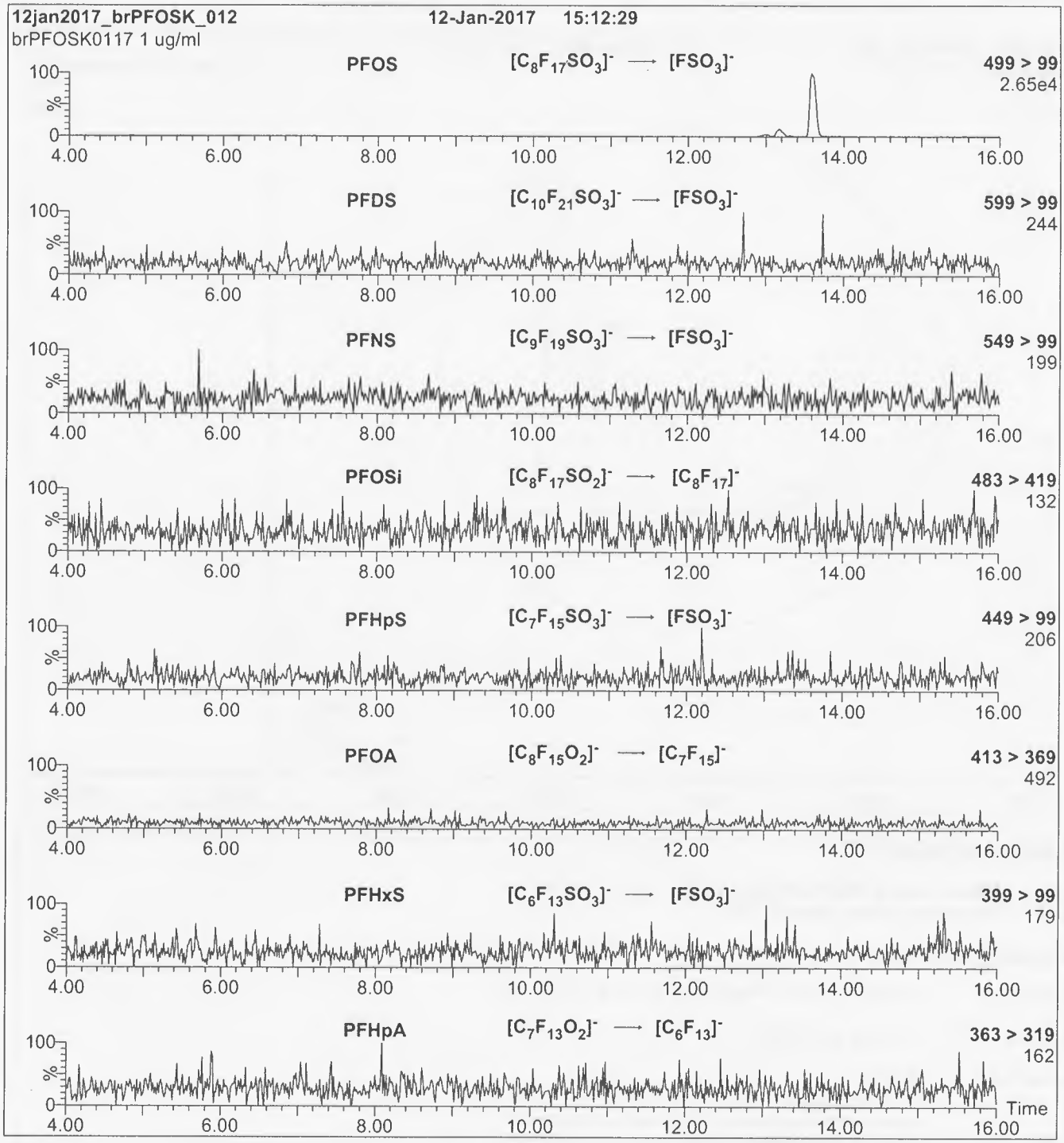
Chromatographic Conditions:

Column:	Acquity UPLC BEH Shield RP_{18} (1.7 µm, 2.1 x 100 mm)
Injection:	1.0 µg/ml of br-PFOSK
Mobile Phase:	Gradient 45% (80:20 MeOH:ACN) / 55% H_2O (both with 10 mM NH_4OAc buffer) Ramp to 90% organic over 15 min and hold for 3 min. Return to initial conditions over 1 min. Time: 20 min
Flow:	300 µl/min

MS Conditions:

SIR (ES-)
Source = 110 °C
Desolvation = 325 °C
Cone Voltage = 60V

Figure 3: **br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 11-50 (variable)

CERTIFIED WEIGHT REPORT

180705-02

Part Number: 99207
Lot Number: 061918
Description: PFOA - DOD
24 components
Expiration Date: 061923
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): 1.0
NIST Test ID#: 2684186

Solvent(s):	Lot#	
Methanol (1 mM KOH)	061918	(98%)
2-Propanol	23214	(2%)

5E-05 Balance Uncertainty
Volume(s) shown below were combined and diluted to (mL): 50.0 0.007 Flask Uncertainty

Formulated By:	Mario Luis	061918 DATE
Reviewed By:	Pedro L. Rentas	061918 DATE

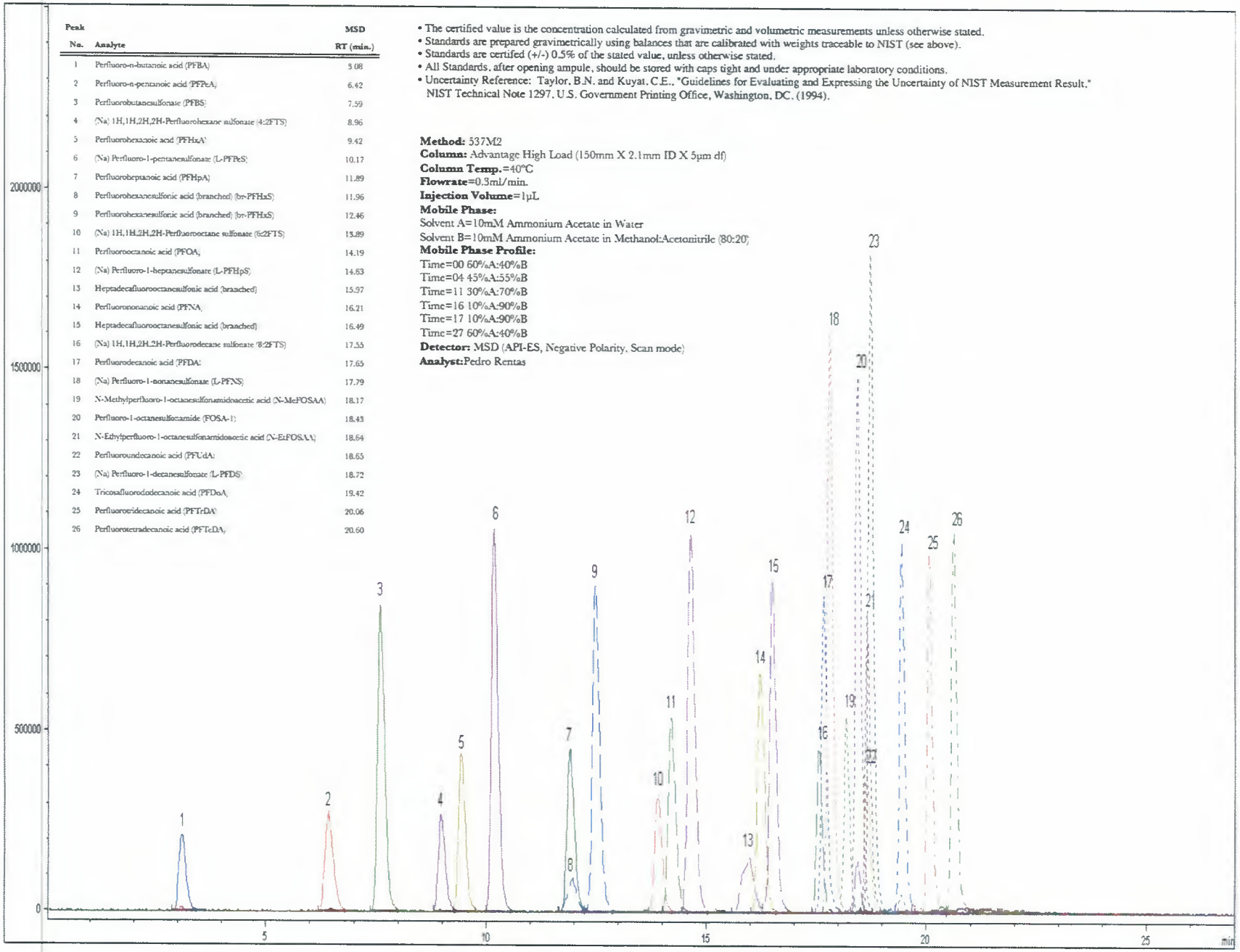
Note: All assigned values are anion concentrations.

	Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(µg/mL)	Final Conc.(µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	Perfluoro-n-butanoic acid (linear)	99542	110317	0.02	1.00	0.004	50.2	1.00	0.01	375-22-4	N/A	N/A
2.	Perfluoro-n-pentanoic acid	99543	110317	0.02	1.00	0.004	50.7	1.01	0.01	2706-90-3	N/A	N/A
3.	Perfluorohexanoic acid	99199	030617	0.02	1.00	0.004	50.3	1.01	0.01	307-24-4	N/A	N/A
4.	Perfluoroheptanoic acid	99197	030517	0.02	1.00	0.004	50.1	1.00	0.01	375-85-9	N/A	N/A
5.	Perfluorooctanoic acid	99202	030617	0.02	1.00	0.004	50.2	1.00	0.01	335-67-1	N/A	ipr-rat 189mg/kg
6.	Perfluorononanoic acid	99200	030617	0.02	1.00	0.004	50.1	1.00	0.01	375-95-1	N/A	N/A
7.	Perfluorodecanoic acid	99195	030617	0.02	1.00	0.004	50.1	1.00	0.01	335-76-2	N/A	orl-rat 57mg/kg
8.	Perfluoroundecanoic acid	99205	030617	0.02	1.00	0.004	50.1	1.00	0.01	2058-94-8	N/A	N/A
9.	Tricosafluorododecanoic acid	99196	030617	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10.	Perfluorotridecanoic acid	99204	030617	0.02	1.00	0.004	50.1	1.00	0.01	72629-94-8	N/A	N/A
11.	Perfluorotetradecanoic acid	99203	030617	0.02	1.00	0.004	50.1	1.00	0.01	376-06-7	N/A	N/A
12.	Perfluoro-1-octanesulfonamide	3677	FOSA0817I	0.02	1.00	0.004	50.0	1.00	0.01	754-91-6	N/A	N/A
13.	N-Methylperfluoro-1-octanesulfonamidoacetic acid	3667	NMeFOSAA0118	0.02	1.00	0.004	50.0	1.00	0.01	2355-31-9	N/A	N/A
14.	N-Ethylperfluoro-1-octanesulfonamidoacetic acid	3664	NEtFOSAA0118	0.02	1.00	0.004	50.0	1.00	0.01	2991-50-6	N/A	N/A
15.	Perfluorobutanesulfonic acid	99194	031017	0.02	1.00	0.004	50.7	1.01	0.01	375-73-5	N/A	N/A
16.	Perfluoro-1-pentanesulfonate	99544	111017	0.02	0.98	0.004	51.3	1.00	0.01	630402-22-1	N/A	N/A
17.	Perfluorohexanesulfonic acid (branched)	99198	030617	0.02	1.00	0.004	50.6	1.01	0.01	3871-99-6	N/A	N/A
18.	Perfluoro-1-heptanesulfonic acid	3672	LPFHpS0817	0.021	1.05	0.004	47.6	1.00	0.01	375-92-8	N/A	N/A
19.	Heptadecafluorooctanesulfonic acid (branched)	99201	030617	0.02	1.00	0.004	50.2	1.00	0.01	1763-23-1	N/A	N/A
20.	Perfluoro-1-nonanesulfonic acid	3957	LPFNS0917	0.021	1.05	0.004	48.0	1.01	0.01	98789-57-2	N/A	N/A
21.	Perfluoro-1-decanesulfonic acid	3671	LPFDS0217	0.021	1.05	0.004	48.2	1.01	0.01	2806-15-7	N/A	N/A
22.	1H,1H,2H,2H-Perfluorohexane sulfonic acid	3955	42FTS1216	0.0214	1.07	0.004	46.7	1.00	0.01	00-00-0	N/A	N/A
23.	1H,1H,2H,2H-Perfluorooctane sulfonic acid	3661	62FTS0616	0.021	1.05	0.004	47.4	1.00	0.01	27619-97-2	N/A	N/A
24.	1H,1H,2H,2H-Perfluorodecane sulfonic acid	3662	82FTS1216	0.021	1.05	0.004	47.9	1.01	0.01	39108-34-4	N/A	N/A

Peak No.	Analyte	MSD RT (min.)
1	Perfluoro-n-butanoic acid (PFBA)	5.08
2	Perfluoro-n-pentanoic acid (PFPeA)	6.42
3	Perfluorobutanesulfonate (PFBS)	7.59
4	(Na) 1H,1H,2H,2H-Perfluorohexane sulfonate (4:2FTS)	8.96
5	Perfluorohexanoic acid (PFHxA)	9.42
6	(Na) Perfluoro-1-pentanesulfonate (L-PFPeS)	10.17
7	Perfluoroheptanoic acid (PFHpA)	11.89
8	Perfluorohexanesulfonic acid (branched) (br-PFHxS)	11.96
9	Perfluorohexanesulfonic acid (branched) (br-PFHxS)	12.46
10	(Na) 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2FTS)	13.89
11	Perfluorooctanoic acid (PFOA)	14.19
12	(Na) Perfluoro-1-heptanesulfonate (L-PFHpS)	14.63
13	Heptadecafluorooctanesulfonic acid (branched)	15.97
14	Perfluorononanoic acid (PFNA)	16.21
15	Heptadecafluorooctanesulfonic acid (branched)	16.49
16	(Na) 1H,1H,2H,2H-Perfluorodecane sulfonate (8:2FTS)	17.55
17	Perfluorodecanoic acid (PFDA)	17.65
18	(Na) Perfluoro-1-nonanesulfonate (L-PFNS)	17.79
19	N-Methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	18.17
20	Perfluoro-1-octanesulfonamide (FOSA-1)	18.43
21	N-Ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	18.64
22	Perfluoroundecanoic acid (PFUdA)	18.65
23	(Na) Perfluoro-1-decanesulfonate (L-PFDS)	18.72
24	Tricosafluorododecanoic acid (PFDoA)	19.42
25	Perfluorotridecanoic acid (PFTrDA)	20.06
26	Perfluorotetradecanoic acid (PFTeDA)	20.60

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

Method: 537M2
Column: Advantage High Load (150mm X 2.1mm ID X 5µm df)
Column Temp.=40°C
Flowrate=0.3mL/min.
Injection Volume=1µL
Mobile Phase:
Solvent A=10mM Ammonium Acetate in Water
Solvent B=10mM Ammonium Acetate in Methanol:Acetonitrile (80:20)
Mobile Phase Profile:
Time=00 60%A:40%B
Time=04 45%A:55%B
Time=11 30%A:70%B
Time=16 10%A:90%B
Time=17 10%A:90%B
Time=27 60%A:40%B
Detector: MSD (API-ES, Negative Polarity, Scan mode)
Analyst: Pedro Rentas



BATTELLE
It can be done

BDO Id: 180726-04

Reagent Receipt Report

Approved: ☑ Authorized ☐

Name:	Mass-labelled PFAS injection standar	**Received:**	7/26/2018
Vendor:	Wellington Laboratories	**Custodian:**	Thorn, Jonathan
Catalogue No:	MPFAC-C-IS	**Expires:**	5/2/2022
Type:	Solution	**Consumed:**	
Lot No:	MPFACCIS0516	**Stored In:**	LC Laboratory - R0107
Quantity:	2 ea 1.2 mL **% Moisture:** 0		
Description:	Mass-labelled PFAS injection standards		

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
13C2-PFDA	BDO-2110	2.0000	100.00	--	--	☐			
13C2-PFOA	BDO-2107	2.0000	100.00	--	--	☐			
13C3-PFBA	BDO-2231	2.0000	100.00	--	--	☐			
13C4-PFOS	BDO-2121	1.9140	100.00	--	--	☐			

Total Analytes: 4

Notes:

Approved by: Lizotte Jr, Robert **Approved on:** 7/27/2018 11:10:00 AM

Authorized by: **Authorized on:**

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-C-IS

Mass-Labelled Perfluorinated Compound Injection Standards Solution

PRODUCT CODE:	MPFAC-C-IS
LOT NUMBER:	MPFACCIS0516
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	05/24/2016
LAST TESTED: (mm/dd/yyyy)	05/02/2017
EXPIRY DATE: (mm/dd/yyyy)	05/02/2022
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-C-IS is a solution/mixture of mass-labelled (^{13}C) perfluoroalkylcarboxylic acids and a mass-labelled (^{13}C) perfluoroalkylsulfonate. The components and their concentrations are given in Table A.

MPFAC-C-IS was designed for, and prepared to be used with, PFC-CVS-C.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkylsulfonate all have chemical purities of >98% and isotopic purities of ≥99%.

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.
- The mass-labelled perfluoroalkylsulfonate compound concentration is reported as the salt.
- 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 $x_1, x_2, \ldots x_n$ on which it depends is:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17025 REFERENCE MATERIAL PRODUCER

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

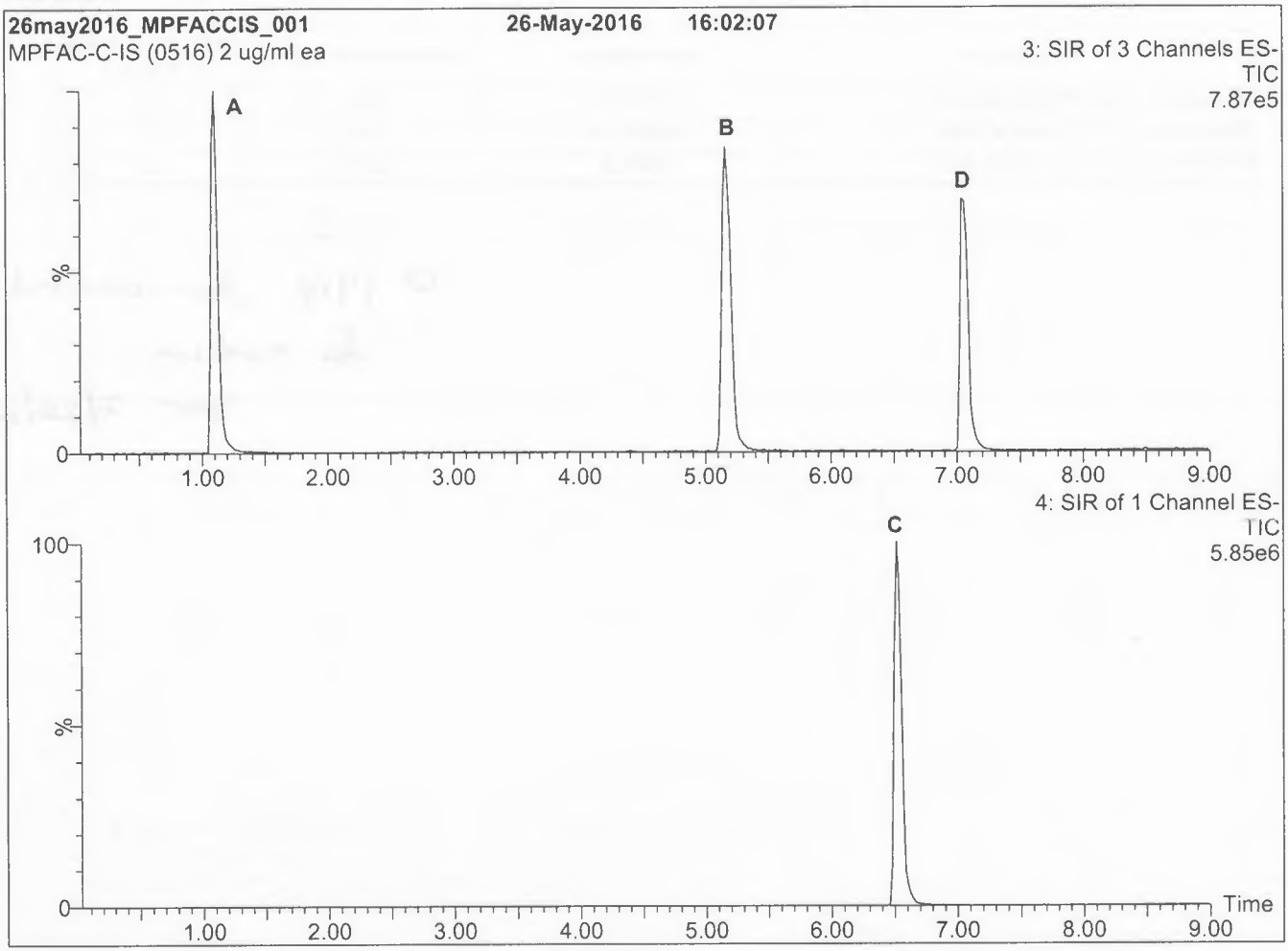
Table A: **MPFAC-C-IS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-[2,3,4-$^{13}C_3$]butanoic acid	M3PFBA	2000	A
Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid	M2PFOA	2000	B
Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid	MPFDA	2000	D
Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate	MPFOS	2000 ①	C

① 1914 when corrected for sodium
JMS 7/26/2017

Certified By: _____ **Date:** 05/04/2017
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **MPFAC-C-IS; LC/MS Data (Total Ion Current Chromatogram; SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min
and hold for 2 min before returning
to initial conditions in 1 min.
Time: 12 min

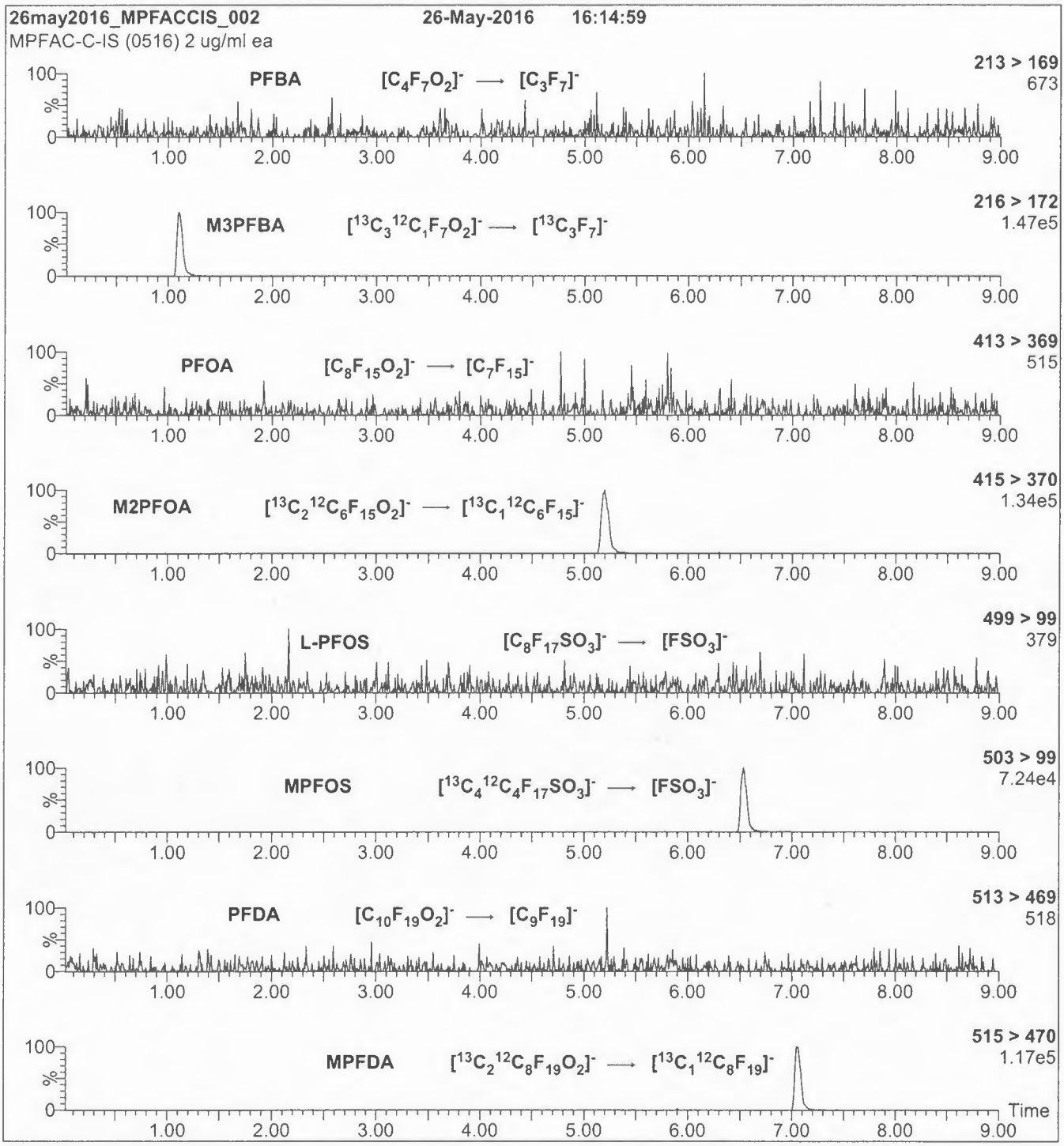
Flow: 300 µl/min

MS Parameters

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (10-80)
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

Figure 2: **MPFAC-C-IS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFAC-C-IS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3

Collision Energy (eV) = 8-50 (variable)

BATTELLE

It can be done

BDO Id: 180726-05

Reagent Receipt Report

Approved: ☑ Authorized ☐

Name: Mass-labelled PFAS Extraction Stand
Vendor: Wellington Laboratories
Catalogue No: MPFAC-24ES
Type: Solution
Lot No: MPFAC24ES0218
Quantity: 2 ea 1.2 mL **% Moisture:** 0
Description: Mass-labelled PFAS Extraction Standard Solution

Received: 7/26/2018
Custodian: Thorn, Jonathan
Expires: 2/7/2023
Consumed:
Stored In: LC Laboratory - R0107

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
13C2-4:2FTS	BDO-2229	0.9350	100.00	--	--	☐			
13C2-6:2FTS	BDO-2230	0.9490	100.00	--	--	☐			
13C2-8:2FTS	BDO-2220	0.9580	100.00	--	--	☐			
13C2-PFDoA	BDO-2112	1.0000	100.00	--	--	☐			
13C2-PFTeDA	BDO-2224	1.0000	100.00	--	--	☐			
13C3-PFBS	BDO-2226	0.9290	100.00	--	--	☐			
13C3-PFHxS	BDO-2227	0.9460	100.00	--	--	☐			
13C4-PFBA	BDO-2105	1.0000	100.00	--	--	☐			
13C4-PFHpA	BDO-2218	1.0000	100.00	--	--	☐			
13C5-PFHxA	BDO-2217	1.0000	100.00	--	--	☐			
13C5-PFPeA	BDO-2216	1.0000	100.00	--	--	☐			
13C6-PFDA	BDO-2222	1.0000	100.00	--	--	☐			
13C7-PFUnA	BDO-2223	1.0000	100.00	--	--	☐			
13C8-FOSA	BDO-2225	1.0000	100.00	--	--	☐			
13C8-PFOA	BDO-2219	1.0000	100.00	--	--	☐			
13C8-PFOS	BDO-2228	0.9570	100.00	--	--	☐			
13C9-PFNA	BDO-2221	1.0000	100.00	--	--	☐			
d3-MeFOSAA	BDO-1838	1.0000	100.00	--	--	☐			
d5-EtFOSAA	BDO-1839	1.0000	100.00	--	--	☐			

Total Analytes: 19

Notes:

Approved by: Lizotte Jr, Robert **Approved on:** 7/27/2018 11:10:00 AM
Authorized by: **Authorized on:**

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-24ES

Mass-Labelled Per- and Poly-fluoroalkyl Substance Extraction Standard Solution

PRODUCT CODE:	MPFAC-24ES
LOT NUMBER:	MPFAC24ES0218
SOLVENT(S):	Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	02/07/2018
LAST TESTED: (mm/dd/yyyy)	02/07/2018
EXPIRY DATE: (mm/dd/yyyy)	02/07/2023
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-24ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4-C_{12} and C_{14}), three mass-labelled (^{13}C) perfluoroalkylsulfonates (C_4, C_6, and C_8), three mass-labelled (^{13}C) telomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, and perfluoro-1-[$^{13}C_8$]octanesulfonamide. The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids, mass-labelled perfluoroalkylsulfonates, mass-labelled telomer sulfonates, and perfluoro-1-[$^{13}C_8$]octanesulfonamide all have chemical purities of >98% and isotopic purities of ≥99%. The individual mass-labelled perfluorooctanesulfonamidoacetic acids all have chemical purities of >98% and isotopic 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 $x_1, x_2, \ldots x_n$ on which it depends is:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED 9017034 REFERENCE MATERIAL PRODUCER

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Table A: **MPFAC-24ES; Components and Concentrations (ng/ml, ± 5% in Methanol / Isopropanol (2%) / Water (<1%))**

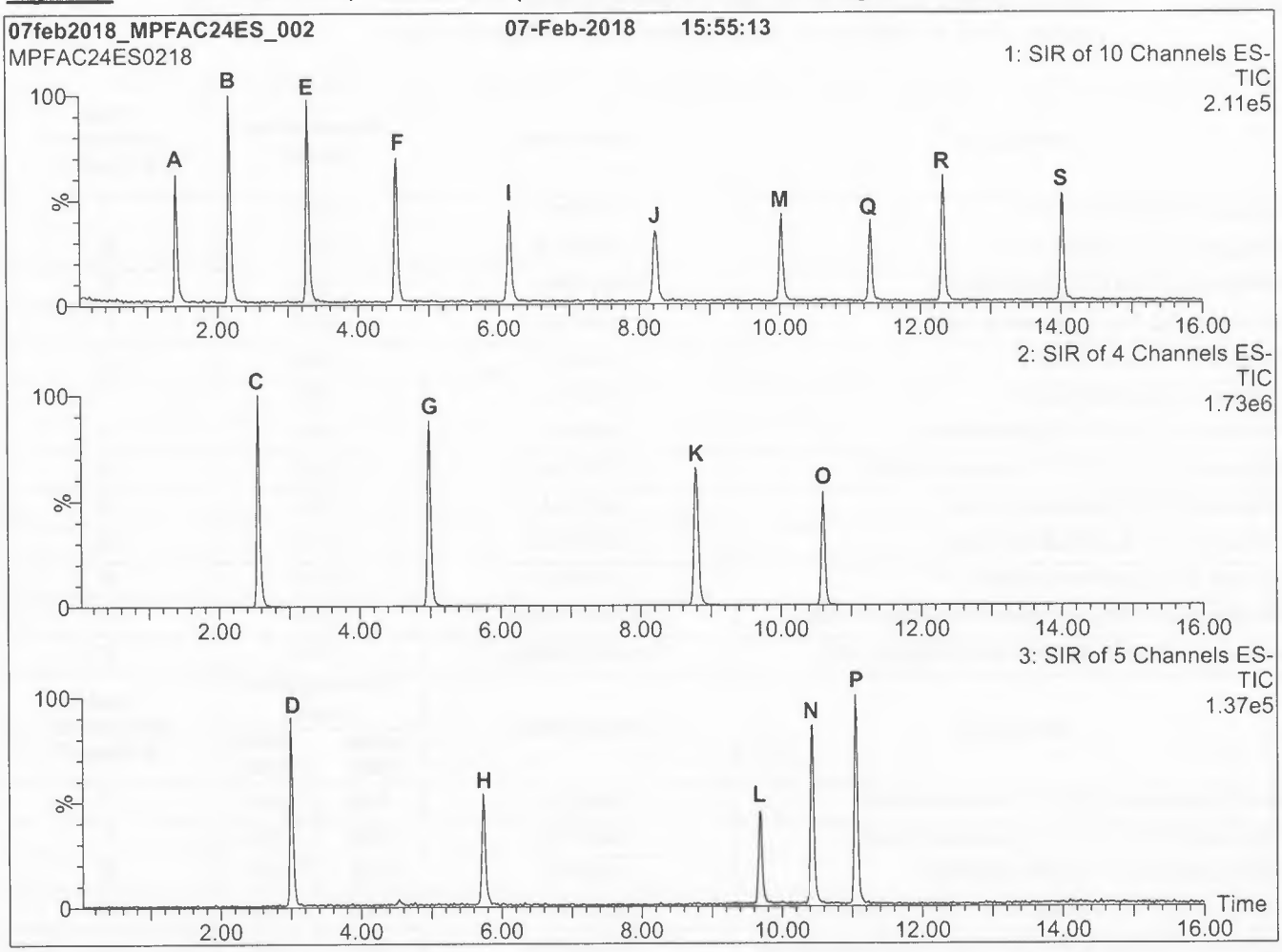
Compound	Abbreviation	Concentration (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-[$^{13}C_4$]butanoic acid	MPFBA	1000	A
Perfluoro-n-[$^{13}C_5$]pentanoic acid	M5PFPeA	1000	B
Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid	M5PFHxA	1000	E
Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid	M4PFHpA	1000	F
Perfluoro-n-[$^{13}C_8$]octanoic acid	M8PFOA	1000	I
Perfluoro-n-[$^{13}C_9$]nonanoic acid	M9PFNA	1000	J
Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid	M6PFDA	1000	M
Perfluoro-n-[1,2,3,4,5,6,7-$^{13}C_7$]undecanoic acid	M7PFUdA	1000	Q
Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid	MPFDoA	1000	R
Perfluoro-n-[1,2-$^{13}C_2$]tetradecanoic acid	M2PFTeDA	1000	S
Perfluoro-1-[$^{13}C_8$]octanesulfonamide	M8FOSA	1000	O
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	N
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	P

Compound	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Sodium perfluoro-1-[2,3,4-$^{13}C_3$]butanesulfonate	M3PFBS	1000	929	C
Sodium perfluoro-1-[1,2,3-$^{13}C_3$]hexanesulfonate	M3PFHxS	1000	946	G
Sodium perfluoro-1-[$^{13}C_8$]octanesulfonate	M8PFOS	1000	957	K
Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-$^{13}C_2$]hexanesulfonate	M2-4:2FTS	1000	935	D
Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-$^{13}C_2$]octanesulfonate	M2-6:2FTS	1000	949	H
Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-$^{13}C_2$]decanesulfonate	M2-8:2FTS	1000	958	L

Certified By: _____ **Date:** 02/09/2018 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **MPFAC-24ES; LC/MS Data (Total Ion Current Chromatogram; SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 55% organic over 3.5 min.
Ramp to 70% organic over 6.5 min.
Ramp to 85% organic over 5 min and hold for
1 min before returning to initial conditions in 0.5 min.
Time: 17 min

Flow: 300 µl/min

MS Parameters

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 3.00
Cone Voltage (V) = variable (10-60)
Cone Gas Flow (l/hr) = 100
Desolvation Gas Flow (l/hr) = 750

Figure 2: **MPFAC-24ES; LC/MS/MS Data (Selected MRM Transitions)**

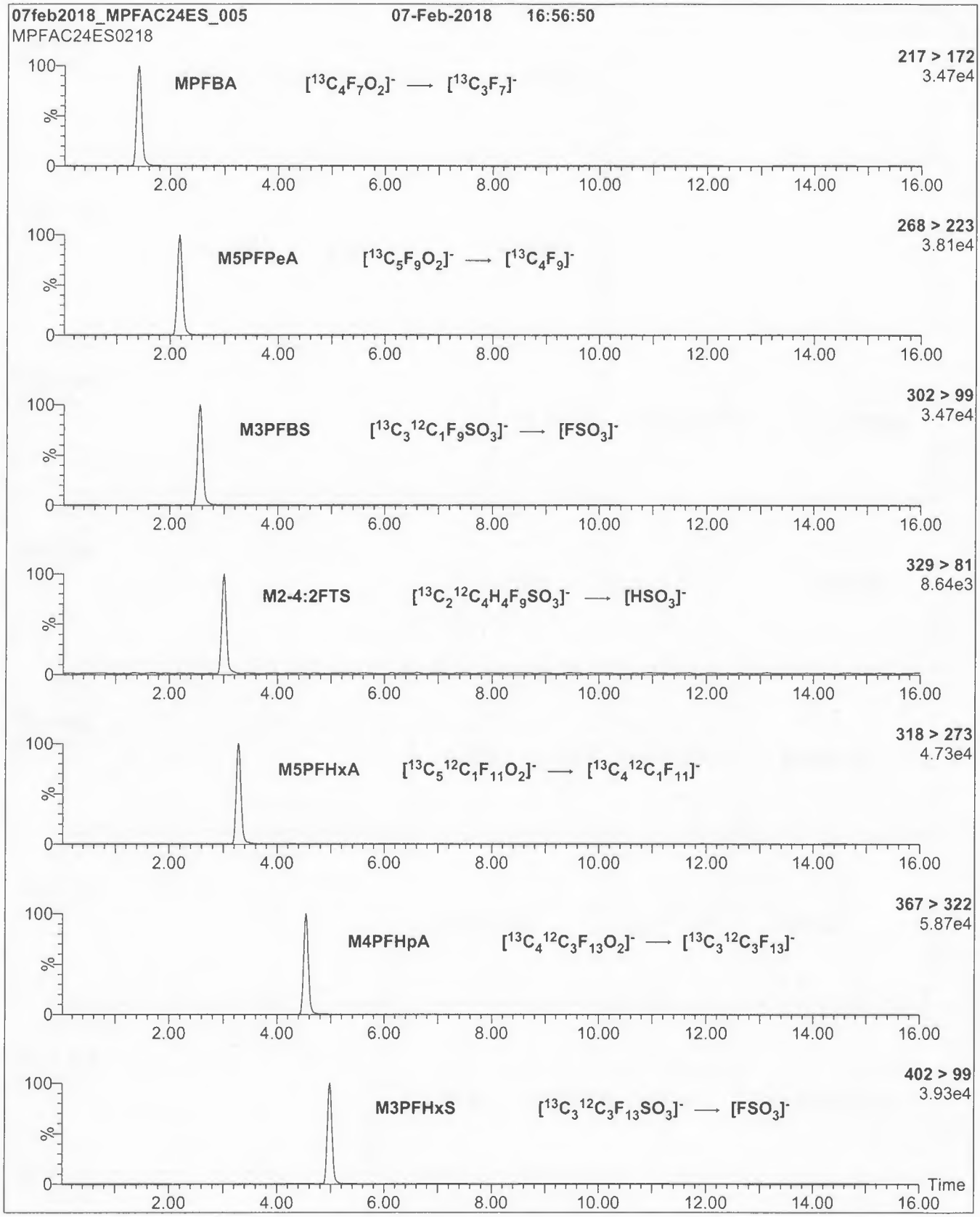


Figure 2: **MPFAC-24ES; LC/MS/MS Data (Selected MRM Transitions)**

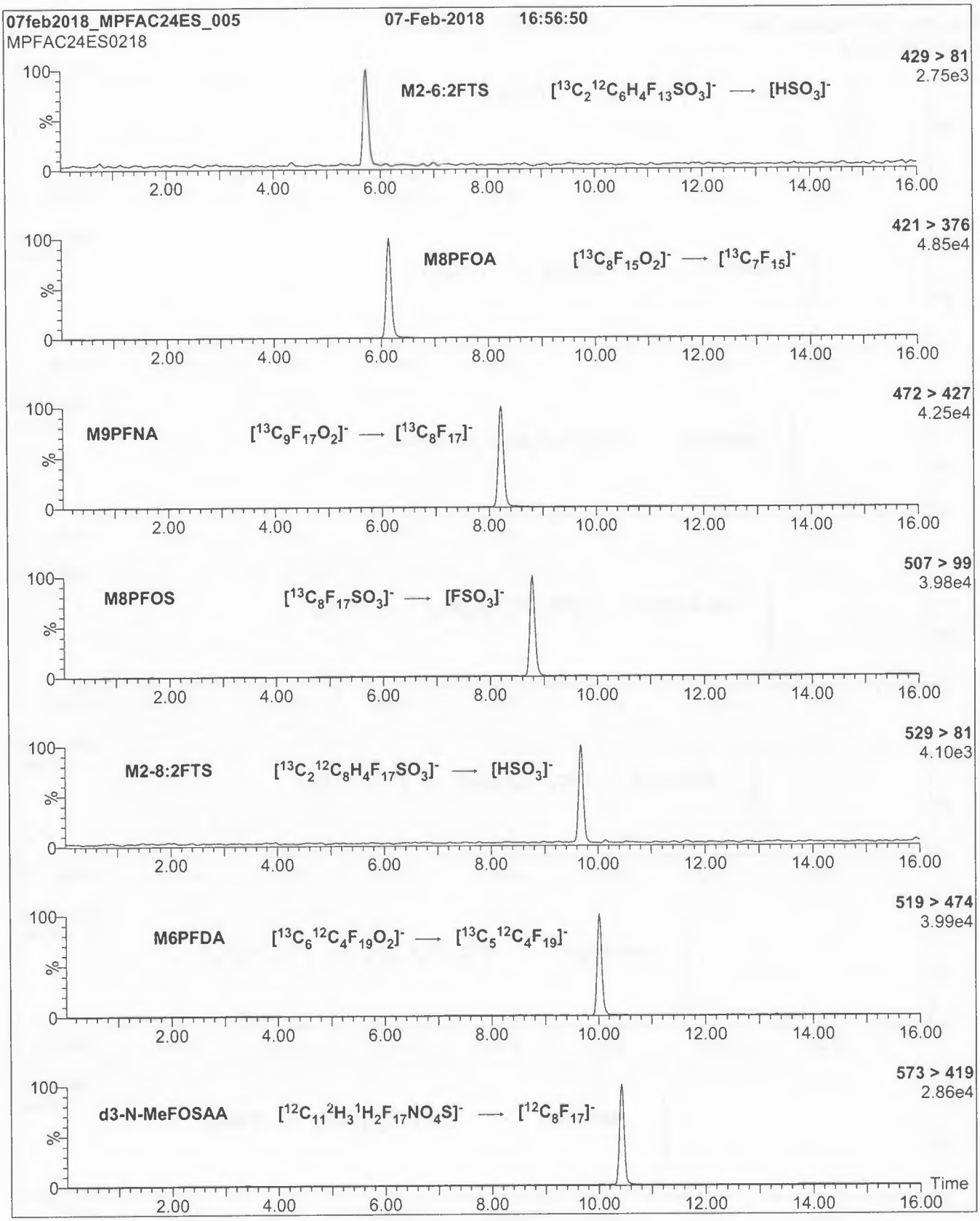
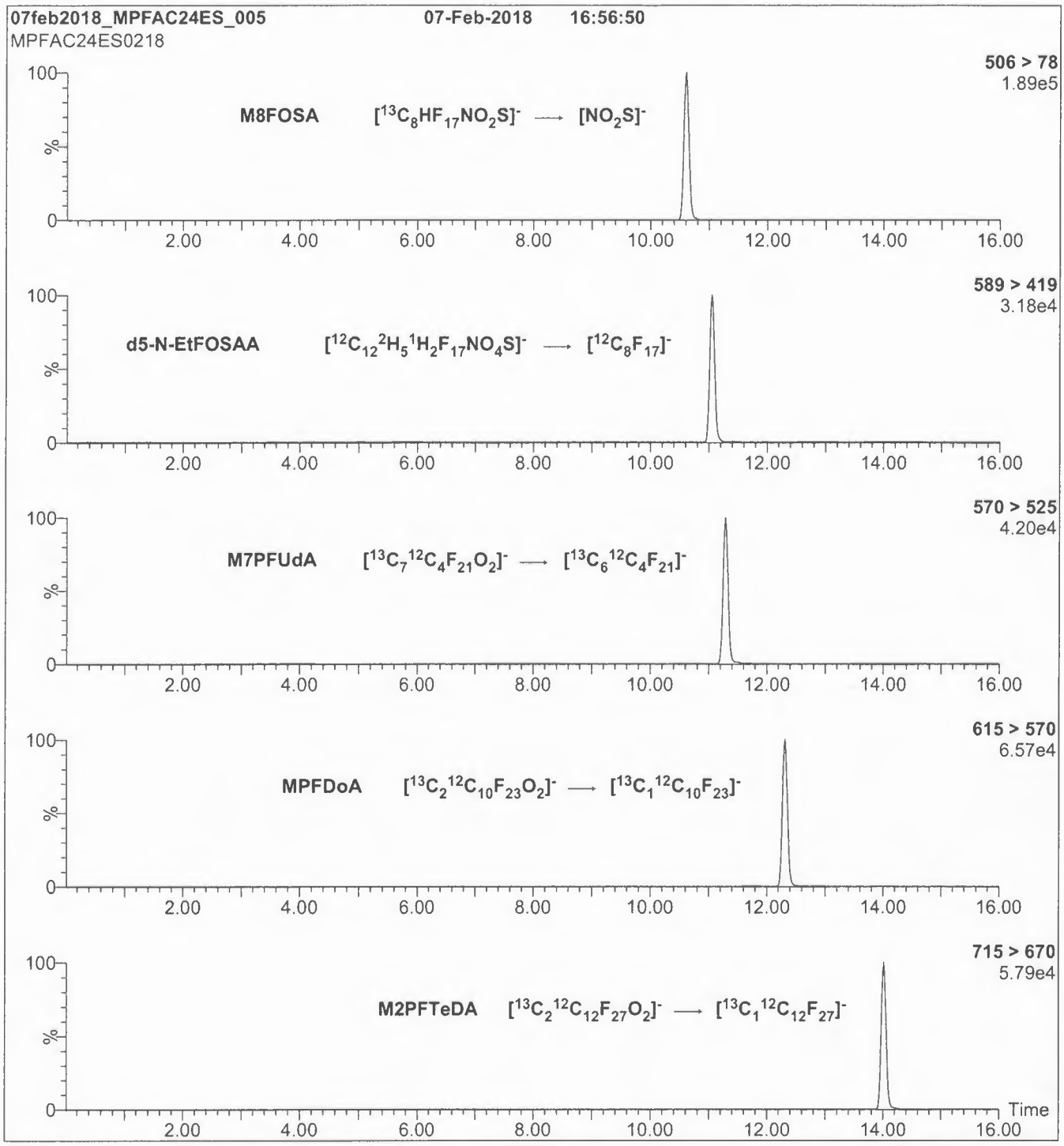


Figure 2: **MPFAC-24ES; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFAC-24ES)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3

Collision Energy (eV) = 8-40 (variable)

Sample Preparation

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BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

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

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

SOP Numbers (see workplan for modifications)

ExtractionSOP No. 5-370

This Batch Contains The Following Samples:	
CR815PB-FS	J7783-FS
CR816LCS-FS	
J7781-FS	
J7782-FS	
J7782MS-FS	
J7782MSD-FS	

Laboratory Preparation Records

COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	09/19/2018	DMS

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SAMPLE IDENTIFICATION PAGE

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID	Description
CR815PB-FS	Procedural Blank
CR816LCS-FS	Laboratory Control Sample - Ottawa Sand (180507-02)
J7781-FS	JAX-TCC-SD02-09112018
J7782-FS	JAX-TCC-SD03-09112018
J7782MS-FS	Matrix Spike of JAX-TCC-SD03-09112018
J7782MSD-FS	Matrix Spike Duplicate of JAX-TCC-SD03-09112018
J7783-FS	JAX-TCC-SD04-09112018

Samples Assigned By: Jonathan Thorn Date : September 13, 2018

Comments:

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SAMPLE CUSTODY LOG

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Requested On/By:	09/17/2018 SAS	**Purpose:**	Sample Preparation
Relinquished On/By:	09/17/2018 MDS	**Last Activity:**	Return

Accepted On/By:	09/17/2018 SAS	**Returned On/To:**	09/17/2018 MDS
Stored In Facility:	Sample Preparation	**Returned To Facility:**	Custody: NA
Stored Until	09/17/2018		
Stored Comment:	NA	**Returned Comment:**	NA

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	J7781	1	--	Intact	NA
2	J7782	1	--	Intact	NA
3	J7783	1	--	Intact	NA

Total Samples 3 * "C" = Consumed Container

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BATTELLE - NORWELL OPERATIONS
ELECTRONIC DRY WEIGHT DETERMINATION

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Ctrs.	*	Tare Wt. (g)	Aliquot Wt. (g)	Dry Wt. (g)	Sample Wet Wt. (g)	% Dry Wt.	% Moisture	Sample Dry Wt. (g)
CR815PB-FS	NA	--	NA	NA	NA	2.07	100.00	0.00	2.07
CR816LCS-FS	NA	--	NA	NA	NA	1.99	100.00	0.00	1.99
J7781-FS	1	--	1.09	6.13	4.95	1.97	76.59	23.41	1.51
J7782-FS	1	--	1.08	6.98	5.52	2.02	75.25	24.75	1.52
J7782MS-FS	1	--	1.11	6.35	5.08	2.06	75.76	24.24	1.56
J7782MSD-FS	1	--	1.12	7.50	5.86	2.06	74.29	25.71	1.53
J7783-FS	1	--	1.09	7.86	6.08	1.98	73.71	26.29	1.46

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] * 100
Sample Dry Wt. (%) = [(Sample Wet Wt. (g) * (Percent Dry Wt./100)]
* "C" = Sample Container Is Consumed

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It can be done

BATTELLE - NORWELL OPERATIONS
ELECTRONIC DRY WEIGHT DETERMINATION

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Ctrs.	*	Tare Wt. (g)	Aliquot Wt. (g)	Dry Wt. (g)	Sample Wet Wt. (g)	% Dry Wt.	% Moisture	Sample Dry Wt. (g)

Task: Wet Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	09/17/2018 SAS	BAL-015
CR816LCS-FS	09/17/2018 SAS	BAL-015
J7781-FS	09/17/2018 SAS	BAL-015
J7782-FS	09/17/2018 SAS	BAL-015
J7782MS-FS	09/17/2018 SAS	BAL-015
J7782MSD-FS	09/17/2018 SAS	BAL-015
J7783-FS	09/17/2018 SAS	BAL-015

Task: Tare Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	--	--
CR816LCS-FS	--	--
J7781-FS	09/17/2018 SAS	BAL-015
J7782-FS	09/17/2018 SAS	BAL-015
J7782MS-FS	09/17/2018 SAS	BAL-015
J7782MSD-FS	09/17/2018 SAS	BAL-015
J7783-FS	09/17/2018 SAS	BAL-015

Task: Aliquot Wet Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	--	--
CR816LCS-FS	--	--
J7781-FS	09/17/2018 SAS	BAL-015
J7782-FS	09/17/2018 SAS	BAL-015
J7782MS-FS	09/17/2018 SAS	BAL-015
J7782MSD-FS	09/17/2018 SAS	BAL-015
J7783-FS	09/17/2018 SAS	BAL-015

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] * 100
Sample Dry Wt. (%) = [(Sample Wet Wt. (g) * (Percent Dry Wt./100)]
* "C" = Sample Container Is Consumed

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BATTELLE - NORWELL OPERATIONS
ELECTRONIC DRY WEIGHT DETERMINATION

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Ctrs.	*	Tare Wt. (g)	Aliquot Wt. (g)	Dry Wt. (g)	Sample Wet Wt. (g)	% Dry Wt.	% Moisture	Sample Dry Wt. (g)

Task: Aliquot Dry Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	--	--
CR816LCS-FS	--	--
J7781-FS	09/18/2018 SAS	BAL-015
J7782-FS	09/18/2018 SAS	BAL-015
J7782MS-FS	09/18/2018 SAS	BAL-015
J7782MSD-FS	09/18/2018 SAS	BAL-015
J7783-FS	09/18/2018 SAS	BAL-015

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] * 100
Sample Dry Wt. (%) = [(Sample Wet Wt. (g) * (Percent Dry Wt./100)]
* "C" = Sample Container Is Consumed

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BATTELLE - NORWELL OPERATIONS
SURROGATE SPIKE FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR815PB-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
CR816LCS-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
CR816LCS-FS	JZ88	LCS/MS	1	400	09/17/18 SAS	JCT	NA
J7781-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782MS-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782MS-FS	JZ88	LCS/MS	1	1000	09/17/18 SAS	JCT	NA
J7782MSD-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782MSD-FS	JZ88	LCS/MS	1	1000	09/17/18 SAS	JCT	NA
J7783-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JY27	Pipette	B814659662
JZ88	Pipette	B820865811

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SAMPLE EXTRACTION FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
CR815PB-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA
CR816LCS-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA
J7781-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA
J7782-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA
J7782MS-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA
J7782MSD-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA
J7783-FS	09/17/18 SAS	09/17/18 SAS	NA	NA	NA	NA	NA	NA

Solvents/Reagent Preparations:

Name	ID	Expires	Lot No	Procedure	Comments
0.4% NH3 in Methanol	RP-180917-3	09/17/18	181704	Per 100 mL, 3.5 mL ammonia solution brought to 100 mL with methanol	
0.4% NH3 in Methanol	RP-180917-3	09/17/18	SHBJ0412	Per 100 mL, 3.5 mL ammonia solution brought to 100 mL with methanol	

Solvents/Reagents:

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COLUMN FRACTIONATION FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Extract Id	Date	Init.	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comments
CR815PB-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
CR816LCS-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7781-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7782-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7782MS-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7782MSD-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7783-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA

Column Diameter: 13 mm **Procedure Comment:**

Elution Volume: 10 mL

Solvents

Reagents

Reagent Prep	Weight g	Name	Expires	Lot No	Procedure
RP-180917-3	Not Measured	0.4% NH3 in Methanol	09/17/18	181704	Per 100 mL, 3.5 mL am brought to 100 mL with
RP-180917-3	Not Measured	0.4% NH3 in Methanol	09/17/18	SHBJ0412	Per 100 mL, 3.5 mL am brought to 100 mL with
RP-180917-4	0.50	ENVI-CARB SPE	09/17/18	9025702	Rinse SPE cartridge wi

Fractions

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INTERNAL STANDARD SPIKING FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

(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
CR815PB-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
CR816LCS-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7781-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7782-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7782MS-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7782MSD-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7783-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JY26	Pipette	B814659662

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

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

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EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

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

Project No.(s)
100119154-SE0375

18-0559
CTO-SE0375: Sediment PFAS Analysis
SD

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Sep 13 2018 11:46AM LMG	**Received On/By:**	Sep 13 2018 11:46AM LMG
Relinquished From:	Sample Preparation: NA	**Received Location:**	LC Laboratory: NA
Relinquish Comment:	NA	**Received Comment:**	screening purposes only, see misc doc for details

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	J7781-FS(0)	NA	1	Intact	NA
2	J7782-FS(0)	NA	1	Intact	NA
3	J7783-FS(0)	NA	1	Intact	NA

Total Extracts: 3

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Sep 17 2018 5:14PM SAS	**Received On/By:**	Sep 17 2018 5:47PM 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	CR815PB-FS(3)	1000	10	Intact	NA
2	CR816LCS-FS(3)	1000	10	Intact	NA
3	J7781-FS(3)	1000	10	Intact	NA
4	J7782-FS(3)	1000	10	Intact	NA
5	J7782MS-FS(3)	1000	10	Intact	NA
6	J7782MSD-FS(3)	1000	10	Intact	NA
7	J7783-FS(3)	1000	10	Intact	NA

Total Extracts: 7

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BATTELLE - NORWELL OPERATIONS
PREPARATION EXTRACT SPLIT FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR815PB-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
CR815PB-FS	2	--	9/17/2018 11:43:00 AM	CR815PB-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
CR815PB-FS	3	--	9/17/2018 11:43:00 AM	CR815PB-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
CR816LCS-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
CR816LCS-FS	2	--	9/17/2018 11:43:00 AM	CR816LCS-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
CR816LCS-FS	3	--	9/17/2018 11:43:00 AM	CR816LCS-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7781-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
J7781-FS	2	--	9/17/2018 11:43:00 AM	J7781-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7781-FS	3	--	9/17/2018 11:43:00 AM	J7781-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7782-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
J7782-FS	2	--	9/17/2018 11:43:00 AM	J7782-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7782-FS	3	--	9/17/2018 11:43:00 AM	J7782-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7782MS-FS	0	C	9/17/2018 9:55:00 AM	NA		NA	NA	1.000	1.000	09/17/18 SAS
J7782MS-FS	2	--	9/17/2018 11:43:00 AM	J7782MS-FS	0	10000	9000	1.111	1.111	09/17/18 SAS

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

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BATTELLE - NORWELL OPERATIONS
PREPARATION EXTRACT SPLIT FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
J7782MS-FS	3	--	9/17/2018 11:43:00 AM	J7782MS-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7782MSD-FS	0	C	9/17/2018 9:55:00 AM	NA		NA	NA	1.000	1.000	09/17/18 SAS
J7782MSD-FS	2	--	9/17/2018 11:43:00 AM	J7782MSD-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7782MSD-FS	3	--	9/17/2018 11:43:00 AM	J7782MSD-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7783-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
J7783-FS	2	--	9/17/2018 11:43:00 AM	J7783-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7783-FS	3	--	9/17/2018 11:43:00 AM	J7783-FS	0	10000	1000	10.000	10.000	09/17/18 SAS

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE SPECIFIC COMMENTS

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Comment:	Date/Initials:
CR815PB-FS	NA	NA
CR816LCS-FS	NA	NA
J7781-FS	NA	NA
J7782-FS	NA	NA
J7782MS-FS	NA	NA
J7782MSD-FS	NA	NA
J7783-FS	NA	NA

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

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

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Entered By:	Lauren Griffith	**On:**	09/14/2018

For pre-screening by direct inject, an extract was prepared as follows:

After mixing the sample thoroughly, samples (BAL015) (target 1g) were weighed into a 50 mL polypropylene centrifuge tube. Actual weights were:
J7781-FS - 1.03g, J7782-FS - 0.99g, J7783-FS - 1.02g
20 mL of methanol (180724-02) were then added to the tube (pipette B641148506), and the sample was shaken on the geno grinder at 1200 rpm for 5 minutes. The extract
was then centrifuged at 3000 rpm for 5 minutes.

680 uL of methanol (180724-02) and 200uL MilliQ water were then pipetted (B820865811) into an eppendorf tube, followed by 50 uL each of JY26 and JY28 (pipette B814659662). Addition of standard solutions was witnessed by Bob Lizotte. A 20 uL aliquot (pipette I0793912B) of extract was then added to the eppendorf tube containing spiked methanol. The tube was then capped and vortexed to mix. An aliquot was then transferred to an autosampler vial and submitted for analysis.

Task Leader Approval:	Lauren Griffith	**On:**	09/18/2018
SupervisorApproval:	Denise Schumitz	**On:**	09/18/2018
PM Approval:	Jonathan Thorn	**On:**	09/19/2018

Analytical Calibrations

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Sequence Report

Created with Analyst Reporter
Printed: 18/09/2018 3:13:06 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		9/17/2018 6:08:24 PM	5-0369.dam	09172018.wiff
2	KA86	L1	9/17/2018 6:19:17 PM	5-0369.dam	09172018.wiff
3	KA87	L2	9/17/2018 6:30:11 PM	5-0369.dam	09172018.wiff
4	KA88	L3	9/17/2018 6:41:03 PM	5-0369.dam	09172018.wiff
5	KA89	L4	9/17/2018 6:51:56 PM	5-0369.dam	09172018.wiff
6	KA90	L5	9/17/2018 7:02:47 PM	5-0369.dam	09172018.wiff
7	KA91	L6	9/17/2018 7:13:39 PM	5-0369.dam	09172018.wiff
8	KA92	L7	9/17/2018 7:24:30 PM	5-0369.dam	09172018.wiff
9	JY46 IB	Instrument Blank	9/17/2018 7:35:21 PM	5-0369.dam	09172018.wiff
10	JY45 ICC	ICC	9/17/2018 7:46:13 PM	5-0369.dam	09172018.wiff
11	KA29 BRANCH	Branch Standard	9/17/2018 7:57:05 PM	5-0369.dam	09172018.wiff
12	MeOH		9/17/2018 8:07:57 PM	5-0369.dam	09172018.wiff
13	CR815PB-FS(3)	Procedural Blank	9/17/2018 8:18:50 PM	5-0369.dam	09172018.wiff
14	CR816LCS-FS(3)	Laboratory Control Sample	9/17/2018 8:29:42 PM	5-0369.dam	09172018.wiff
15	J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/2018 8:40:33 PM	5-0369.dam	09172018.wiff
16	J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/2018 8:51:25 PM	5-0369.dam	09172018.wiff
17	J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/2018 9:02:16 PM	5-0369.dam	09172018.wiff
18	J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/2018 9:13:07 PM	5-0369.dam	09172018.wiff
19	J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/2018 9:23:58 PM	5-0369.dam	09172018.wiff
6	KA90 CCV	CCV	9/17/2018 9:34:51 PM	5-0369.dam	09172018.wiff
20	MeOH		9/17/2018 9:45:43 PM	5-0369.dam	09172018.wiff
21	CR817PB-FS(0)	Procedural Blank	9/17/2018 9:56:35 PM	5-0369.dam	09172018.wiff
22	CR818LCS-FS(0)	Laboratory Control Sample	9/17/2018 10:07:27 PM	5-0369.dam	09172018.wiff
23	J7785-FS(0)	JAX-TCC-FRB-09112018	9/17/2018 10:18:19 PM	5-0369.dam	09172018.wiff
24	J7774-FS(0)	JAX-TCC-EB02-09112018	9/17/2018 10:29:11 PM	5-0369.dam	09172018.wiff
25	J7784-FS(0)	JAX-TCC-EB03-09112018	9/17/2018 10:40:02 PM	5-0369.dam	09172018.wiff
5	KA89 CCV	CCV	9/17/2018 10:50:54	5-0369.dam	09172018.wiff

1

1 - Not reported with this batch. BL 9/18/218

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Sequence Report

Created with Analyst Reporter
Printed: 18/09/2018 3:13:06 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
			PM		
26	MeOH		9/17/2018 11:01:47 PM	5-0369.dam	09172018.wiff
27	J7778-FS(0)	JAX-TCC-MWB1-09112018	9/17/2018 11:12:37 PM	5-0369.dam	09172018.wiff
28	J7778-FS-D(3)	JAX-TCC-MWB1-09112018	9/17/2018 11:23:29 PM	5-0369.dam	09172018.wiff
29	J7775-FS(0)	JAX-TCC-MWC3-09112018	9/17/2018 11:34:21 PM	5-0369.dam	09172018.wiff
30	J7775-FS-D(3)	JAX-TCC-MWC3-09112018	9/17/2018 11:45:13 PM	5-0369.dam	09172018.wiff
31	J7775-FS-D(5)	JAX-TCC-MWC3-09112018	9/17/2018 11:56:05 PM	5-0369.dam	09172018.wiff
32	J7776-FS(0)	JAX-TCC-MWC3-09112018-FD	9/18/2018 12:06:57 AM	5-0369.dam	09172018.wiff
33	J7776-FS-D(3)	JAX-TCC-MWC3-09112018-FD	9/18/2018 12:17:49 AM	5-0369.dam	09172018.wiff
34	J7776-FS-D(5)	JAX-TCC-MWC3-09112018-FD	9/18/2018 12:28:40 AM	5-0369.dam	09172018.wiff
26	MeOH		9/18/2018 12:39:31 AM	5-0369.dam	09172018.wiff
6	KA90 CCV	CCV	9/18/2018 12:50:22 AM	5-0369.dam	09172018.wiff
20	MeOH		9/18/2018 1:01:15 AM	5-0369.dam	09172018.wiff
35	J7779-FS(0)	JAX-TCC-SW01-09112018	9/18/2018 1:12:07 AM	5-0369.dam	09172018.wiff
36	J7779-FS-D(3)	JAX-TCC-SW01-09112018	9/18/2018 1:22:59 AM	5-0369.dam	09172018.wiff
37	J7779-FS-D(5)	JAX-TCC-SW01-09112018	9/18/2018 1:33:50 AM	5-0369.dam	09172018.wiff
38	J7780-FS(0)	JAX-TCC-SW02-09112018	9/18/2018 1:44:42 AM	5-0369.dam	09172018.wiff
39	J7780-FS-D(3)	JAX-TCC-SW02-09112018	9/18/2018 1:55:34 AM	5-0369.dam	09172018.wiff
40	J7780-FS-D(5)	JAX-TCC-SW02-09112018	9/18/2018 2:06:26 AM	5-0369.dam	09172018.wiff
41	J7777-FS(0)	JAX-TCC-MWI2-09112018	9/18/2018 2:17:18 AM	5-0369.dam	09172018.wiff
42	J7777-FS-D(3)	JAX-TCC-MWI2-09112018	9/18/2018 2:28:10 AM	5-0369.dam	09172018.wiff
43	J7777-FS-D(5)	JAX-TCC-MWI2-09112018	9/18/2018 2:39:01 AM	5-0369.dam	09172018.wiff
12	MeOH		9/18/2018 2:49:52 AM	5-0369.dam	09172018.wiff
5	KA89 CCV	CCV	9/18/2018 3:00:45 AM	5-0369.dam	09172018.wiff

1

1 - Not reported with this batch. BL 9/18/2018

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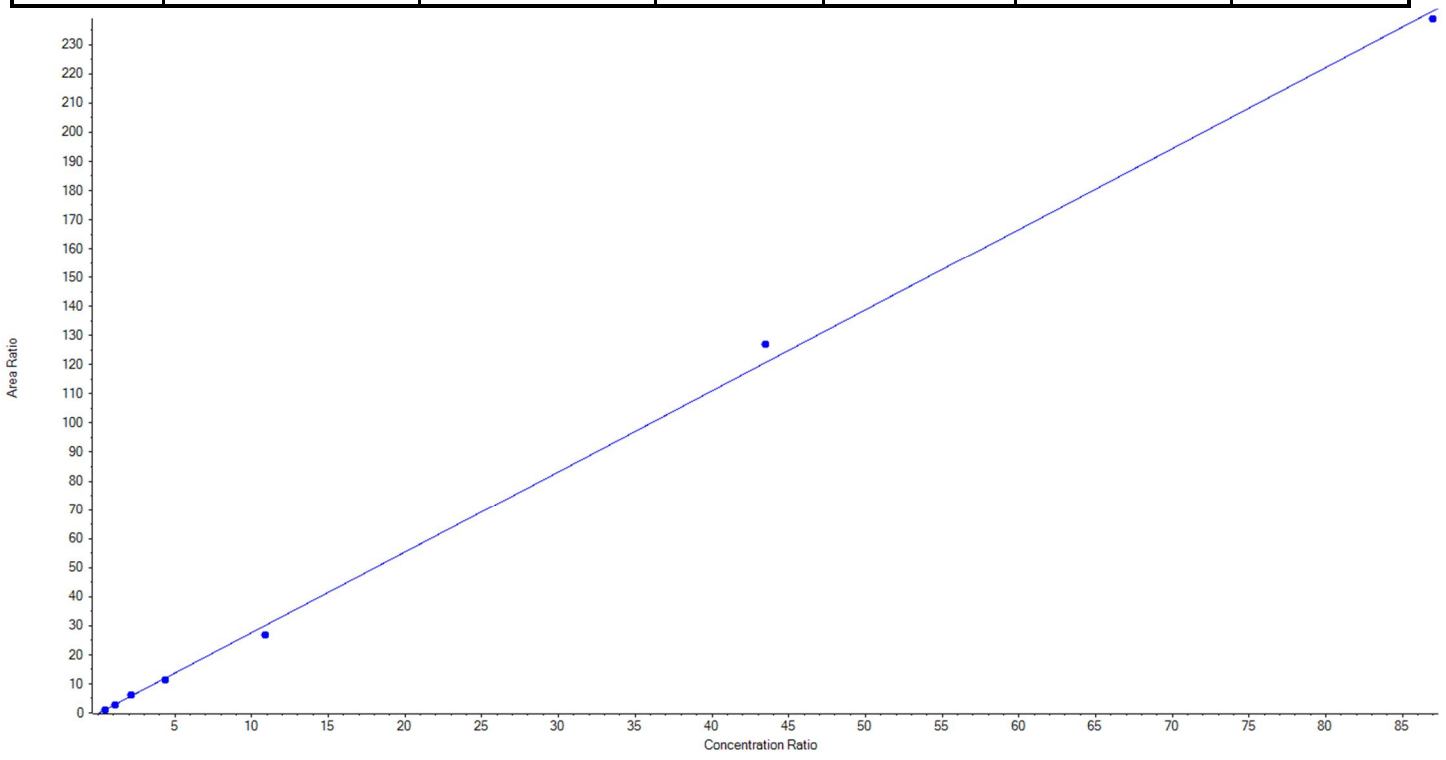
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFBS_1	**Data File**	09172018.wiff
MRM Transition	298.9 / 80.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFBS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 2.77909 x + -0.17589 (r = 0.99902) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	107.210507	106.2
3	KA87	L2	True	252.00	256.792877	101.9
4	KA88	L3	True	505.00	522.951445	103.6
5	KA89	L4	True	1010.00	961.467448	95.2
6	KA90	L5	True	2525.00	2251.753492	89.2
7	KA91	L6	True	10100.00	10619.448743	105.1
8	KA92	L7	True	20200.00	19973.375488	98.9



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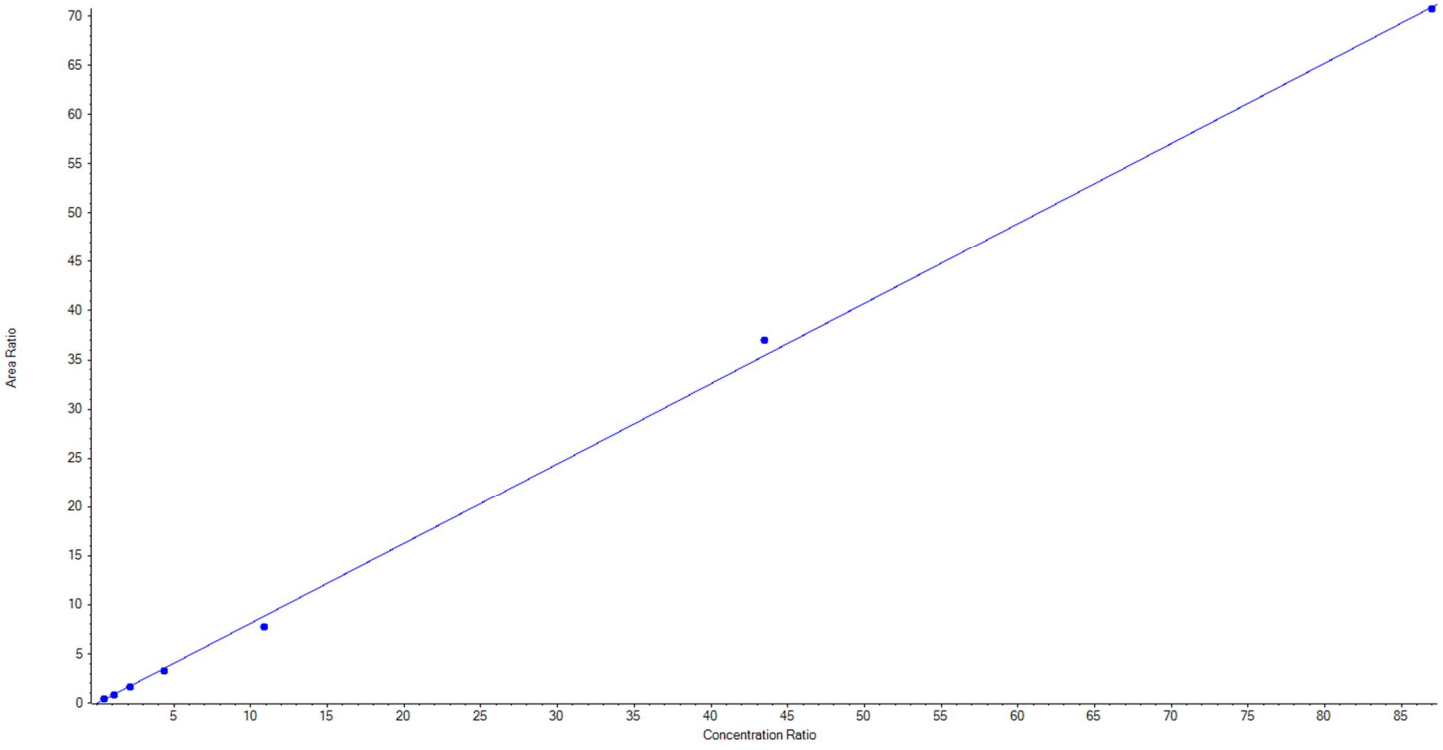
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFBS_2	**Data File**	09172018.wiff
MRM Transition	298.9 / 99.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFBS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.81561 x + -0.04043 (r = 0.99896) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	124.306355	123.1
3	KA87	L2	True	252.00	242.352302	96.2
4	KA88	L3	True	505.00	480.256328	95.1
5	KA89	L4	True	1010.00	947.233424	93.8
6	KA90	L5	True	2525.00	2218.136856	87.9
7	KA91	L6	True	10100.00	10531.345026	104.3
8	KA92	L7	True	20200.00	20149.369708	99.8



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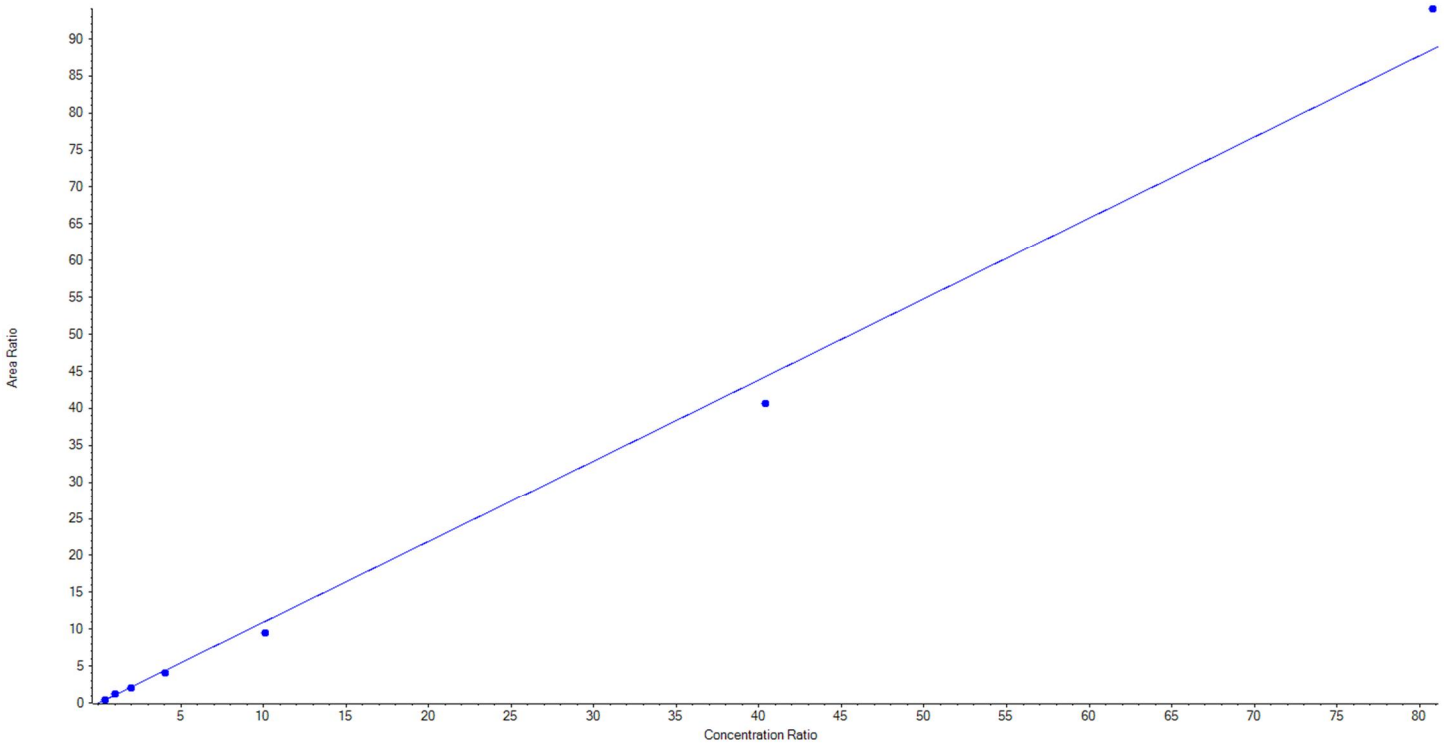
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxA_1	**Data File**	09172018.wiff
MRM Transition	313.0 / 269.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C5-PFHxA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.09727 x + -0.04646 (r = 0.99674) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	116.251169	115.1
3	KA87	L2	True	252.00	288.265557	114.4
4	KA88	L3	True	505.00	469.463253	93.0
5	KA89	L4	True	1010.00	946.375417	93.7
6	KA90	L5	True	2525.00	2171.771994	86.0
7	KA91	L6	True	10100.00	9261.678272	91.7
8	KA92	L7	True	20200.00	21439.194338	106.1



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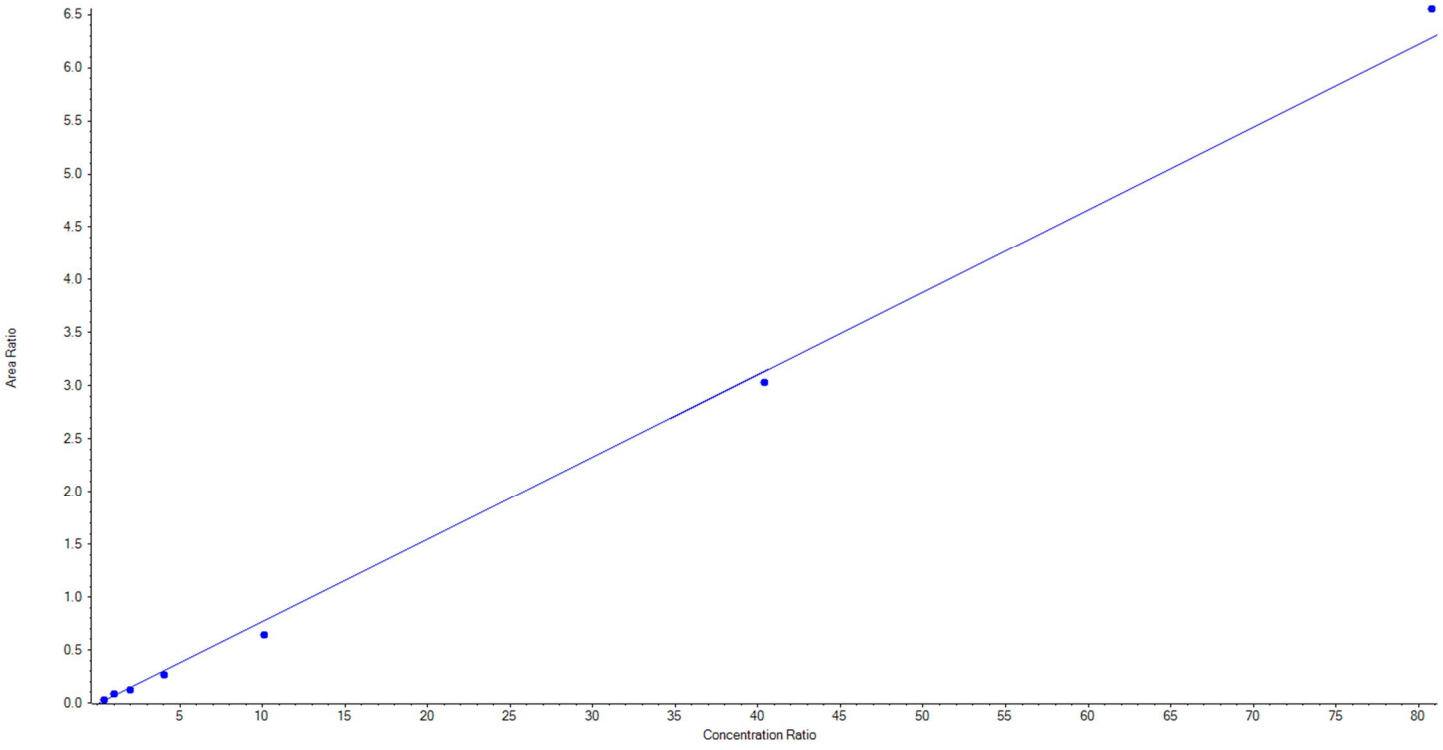
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxA_2	**Data File**	09172018.wiff
MRM Transition	313.0 / 119.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C5-PFHxA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.07785 x + -0.01012 (r = 0.99736) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	118.706895	117.5
3	KA87	L2	True	252.00	315.063029	125.0
4	KA88	L3	True	505.00	436.406684	86.4
5	KA89	L4	True	1010.00	880.568908	87.2
6	KA90	L5	True	2525.00	2088.102209	82.7
7	KA91	L6	True	10100.00	9776.953274	96.8
8	KA92	L7	True	20200.00	21077.199002	104.3



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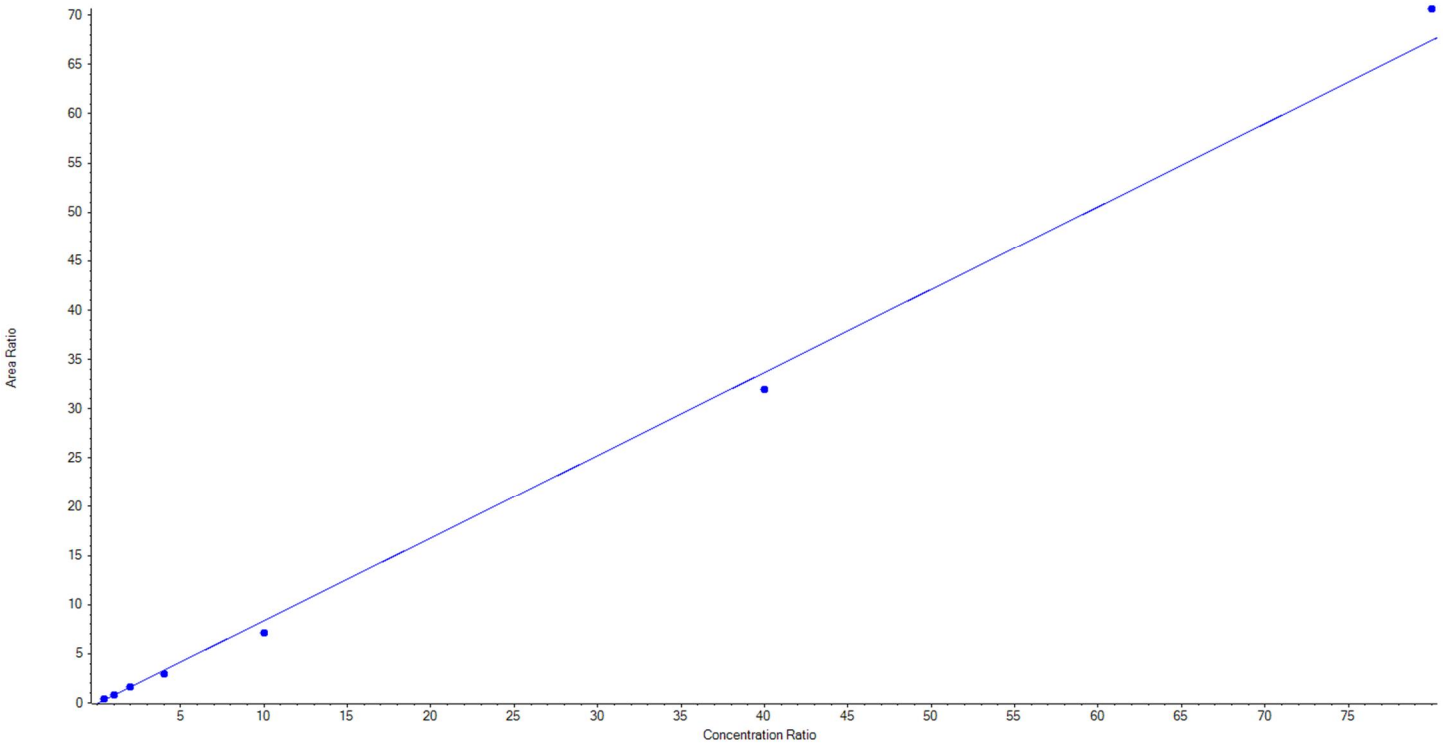
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHpA_1	**Data File**	09172018.wiff
MRM Transition	363.0 / 319.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.84373 x + -0.06432 (r = 0.99777) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	126.435711	126.4
3	KA87	L2	True	250.00	247.462947	99.0
4	KA88	L3	True	500.00	494.594695	98.9
5	KA89	L4	True	1000.00	908.164781	90.8
6	KA90	L5	True	2500.00	2128.310132	85.1
7	KA91	L6	True	10000.00	9497.225875	95.0
8	KA92	L7	True	20000.00	20947.805860	104.7



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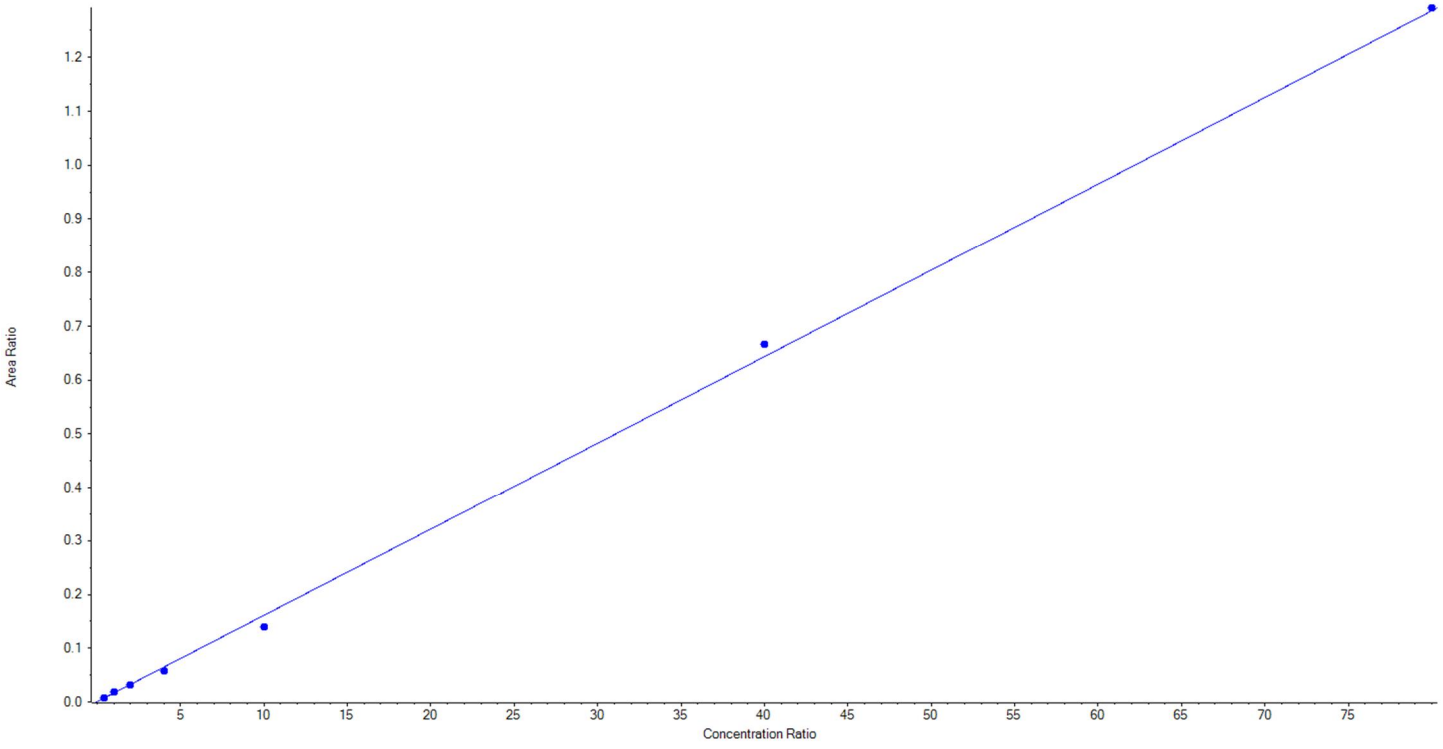
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHpA_2	**Data File**	09172018.wiff
MRM Transition	363.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.01607 x + 5.40020e-4 (r = 0.99871) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	117.894562	117.9
3	KA87	L2	True	250.00	272.310493	108.9
4	KA88	L3	True	500.00	476.146385	95.2
5	KA89	L4	True	1000.00	874.726007	87.5
6	KA90	L5	True	2500.00	2160.243680	86.4
7	KA91	L6	True	10000.00	10365.244292	103.7
8	KA92	L7	True	20000.00	20083.434581	100.4



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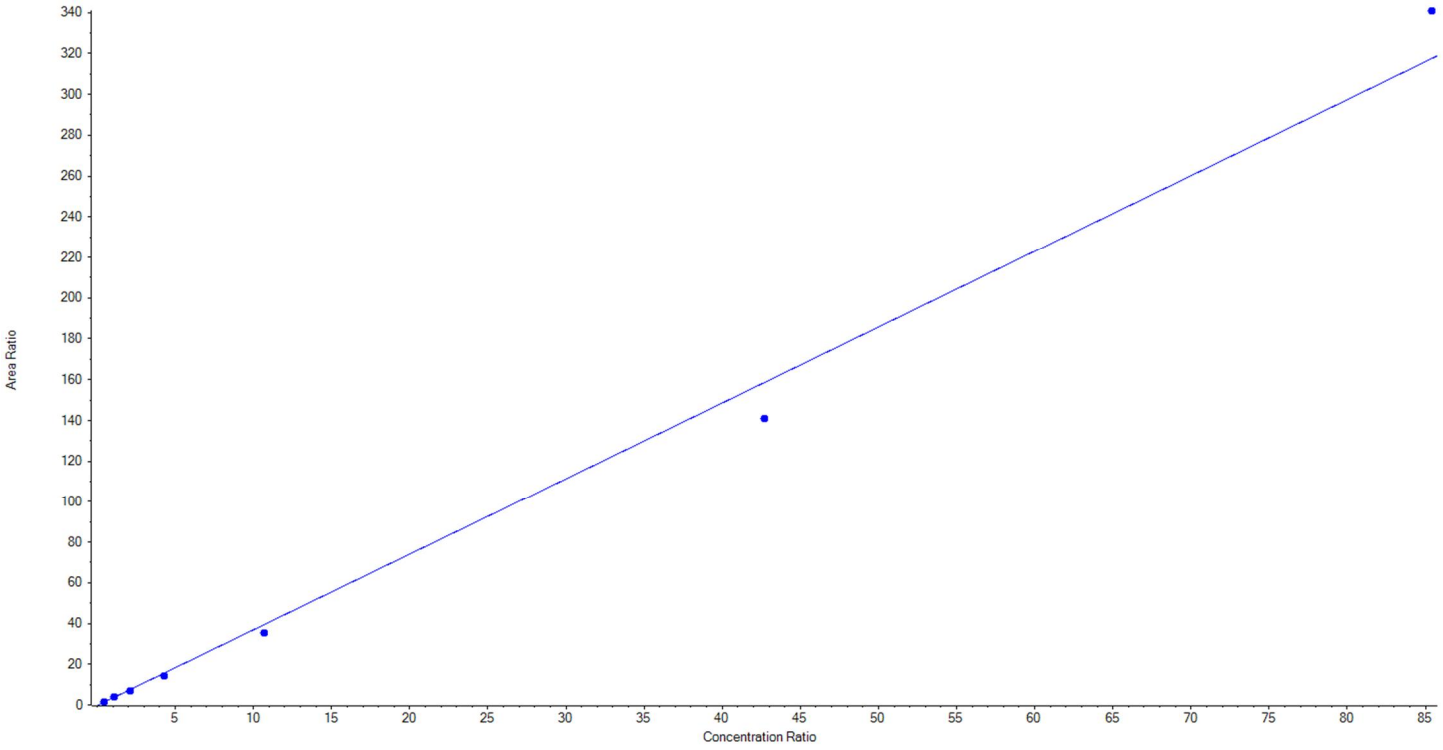
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxS_1	**Data File**	09172018.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFHxS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 3.72115 x + -0.32244 (r = 0.99560) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	125.028959	123.8
3	KA87	L2	True	252.00	277.132033	110.0
4	KA88	L3	True	505.00	449.866974	89.1
5	KA89	L4	True	1010.00	917.601880	90.9
6	KA90	L5	True	2525.00	2277.653301	90.2
7	KA91	L6	True	10100.00	8965.996617	88.8
8	KA92	L7	True	20200.00	21679.720237	107.3



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Calibration Summary Report

Created with Analyst Reporter
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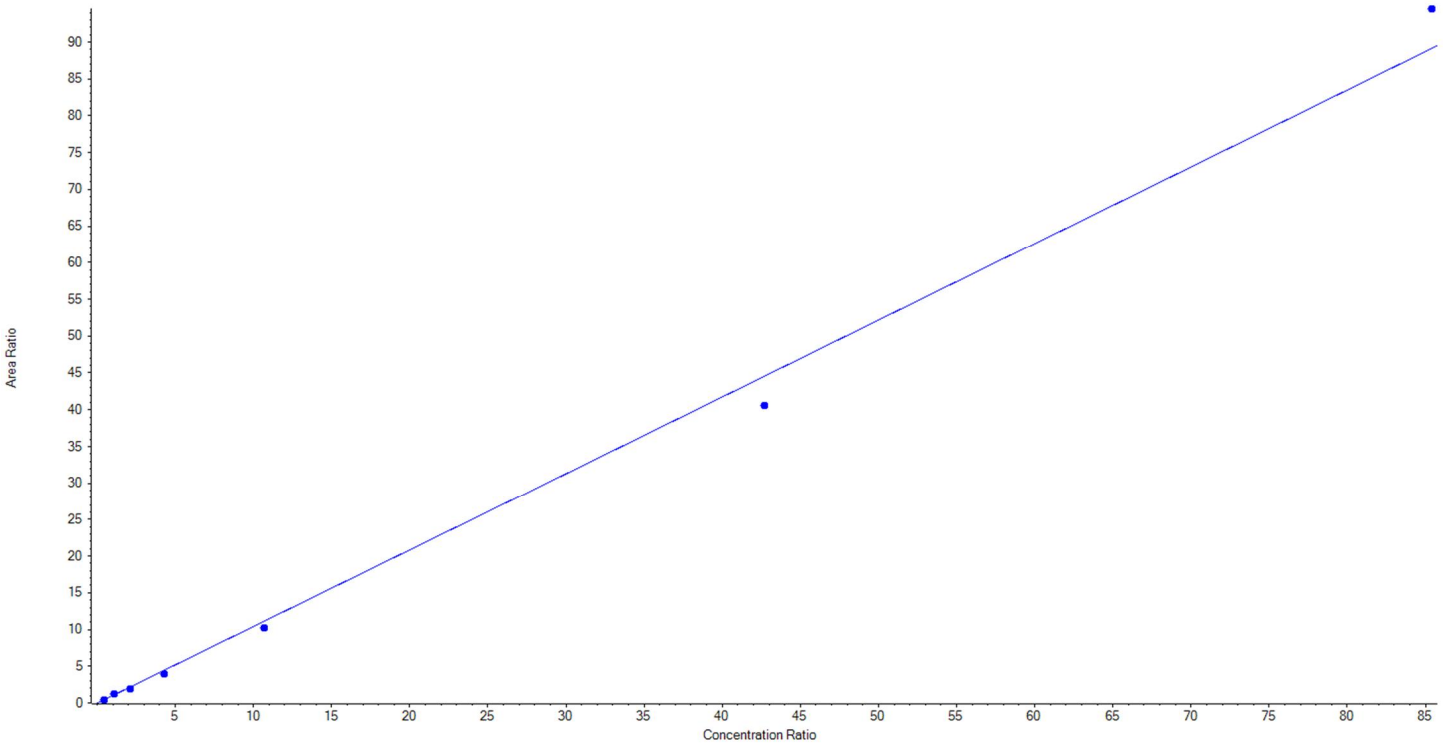
Analyte Name	PFHxS_2	**Data File**	09172018.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFHxS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.04400 x + -0.03566 (r = 0.99689) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	115.879496	114.7
3	KA87	L2	True	252.00	298.762264	118.6
4	KA88	L3	True	505.00	452.963101	89.7
5	KA89	L4	True	1010.00	891.385065	88.3
6	KA90	L5	True	2525.00	2312.226195	91.6
7	KA91	L6	True	10100.00	9209.878255	91.2
8	KA92	L7	True	20200.00	21411.905624	106.0



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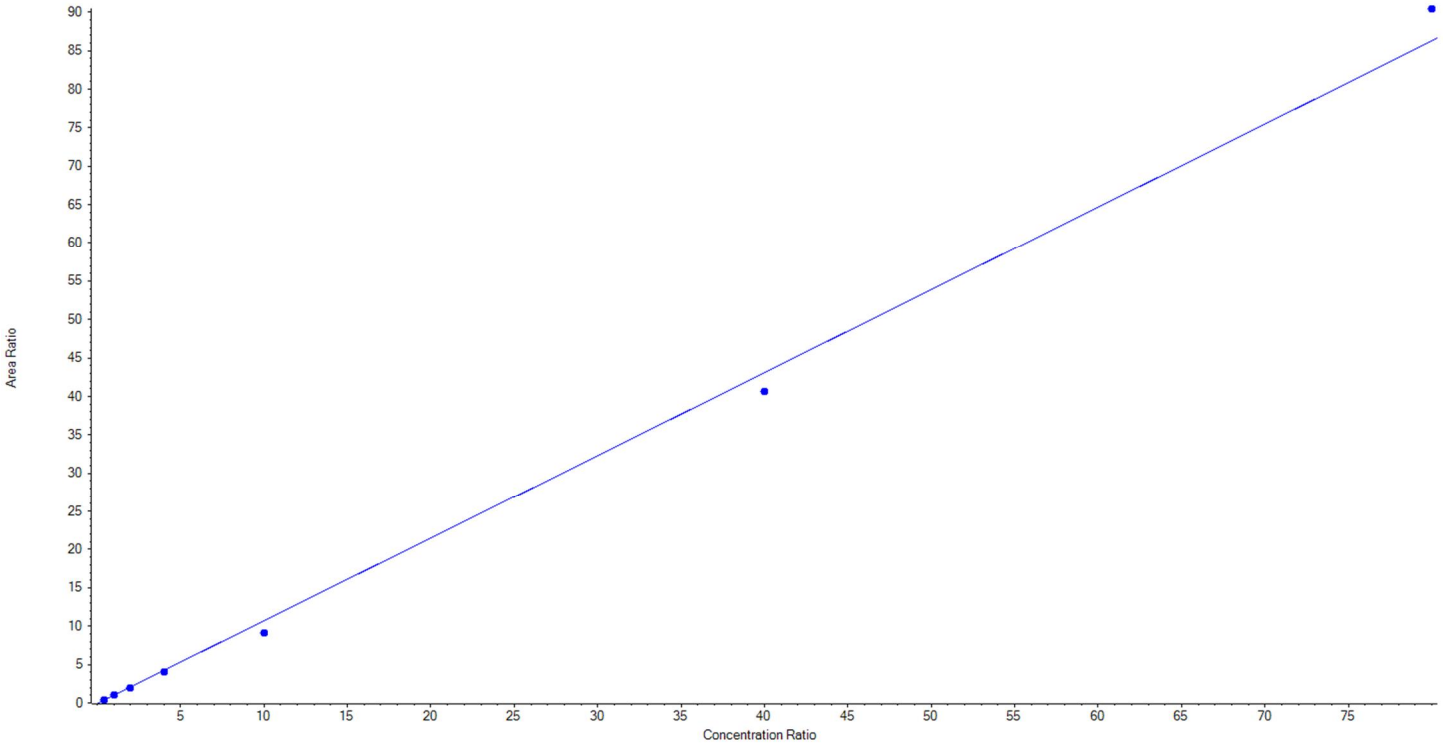
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOA_1	**Data File**	09172018.wiff
MRM Transition	413.0 / 369.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.07936 x + -0.07884 (r = 0.99776) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	120.628781	120.6
3	KA87	L2	True	250.00	267.473813	107.0
4	KA88	L3	True	500.00	457.308715	91.5
5	KA89	L4	True	1000.00	964.357849	96.4
6	KA90	L5	True	2500.00	2129.724084	85.2
7	KA91	L6	True	10000.00	9448.533833	94.5
8	KA92	L7	True	20000.00	20961.972925	104.8



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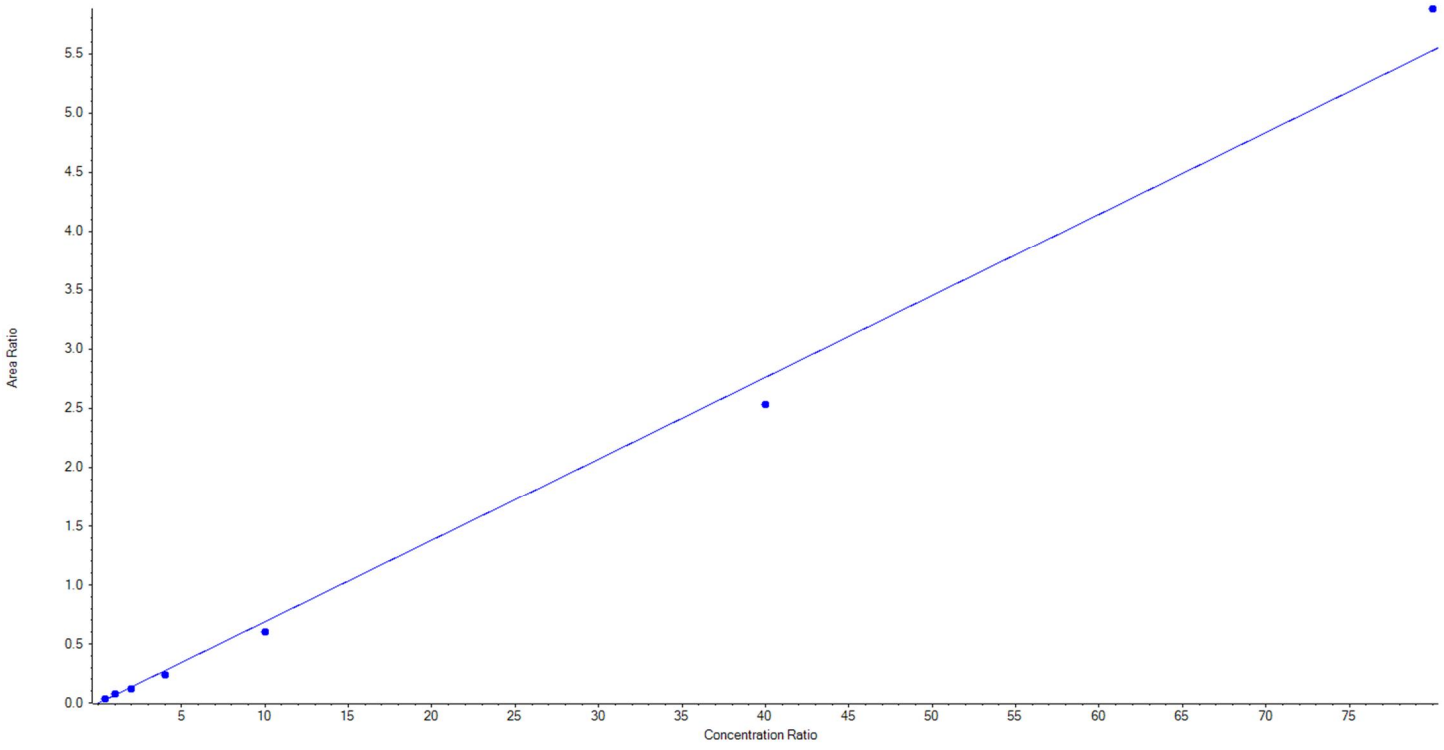
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOA_2	**Data File**	09172018.wiff
MRM Transition	413.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.06913 x + -0.00318 (r = 0.99653) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	128.340625	128.3
3	KA87	L2	True	250.00	274.279064	109.7
4	KA88	L3	True	500.00	442.322655	88.5
5	KA89	L4	True	1000.00	876.025066	87.6
6	KA90	L5	True	2500.00	2197.982787	87.9
7	KA91	L6	True	10000.00	9161.230341	91.6
8	KA92	L7	True	20000.00	21269.819462	106.4



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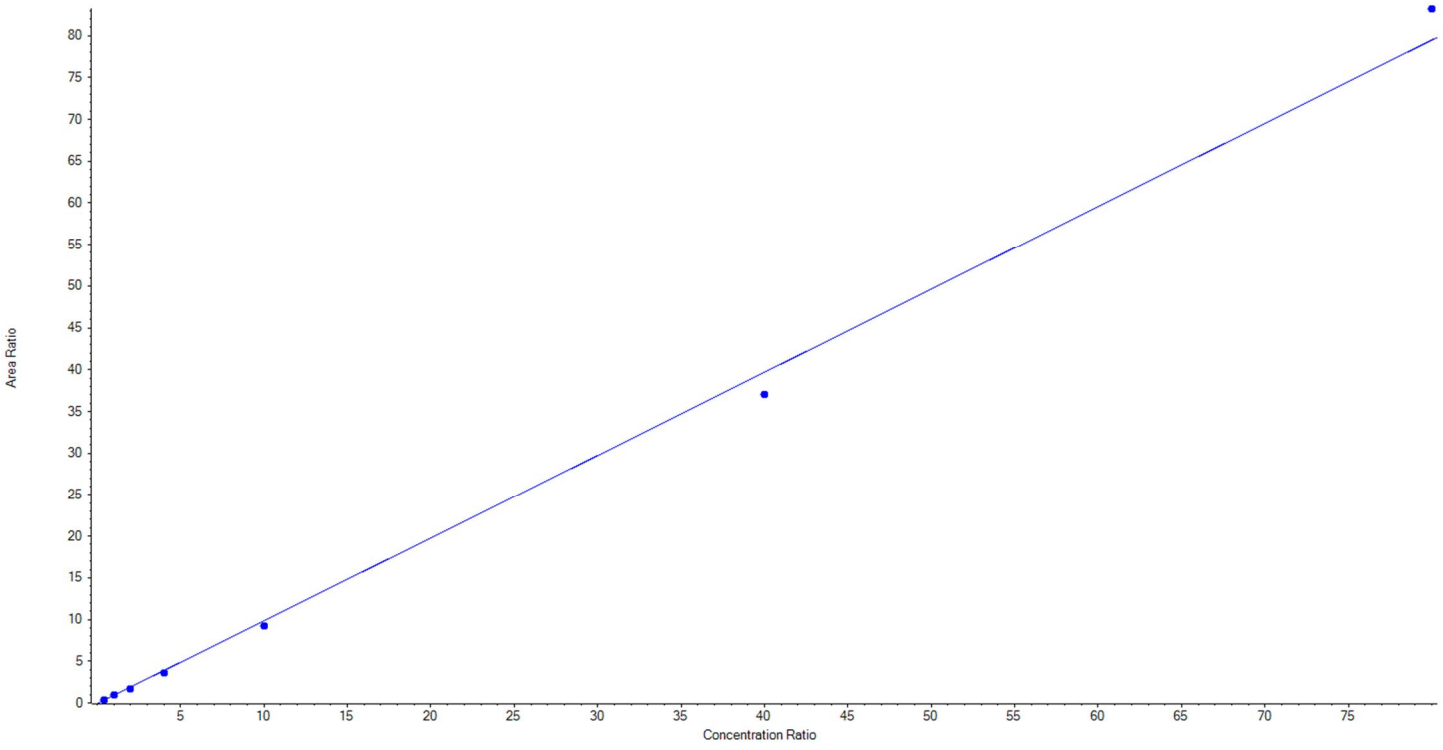
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFNA_1	**Data File**	09172018.wiff
MRM Transition	463.0 / 419.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C9-PFNA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.99457 x + -0.09664 (r = 0.99813) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	126.420004	126.4
3	KA87	L2	True	250.00	251.786479	100.7
4	KA88	L3	True	500.00	440.018950	88.0
5	KA89	L4	True	1000.00	935.526977	93.6
6	KA90	L5	True	2500.00	2333.848398	93.4
7	KA91	L6	True	10000.00	9328.596873	93.3
8	KA92	L7	True	20000.00	20933.802318	104.7



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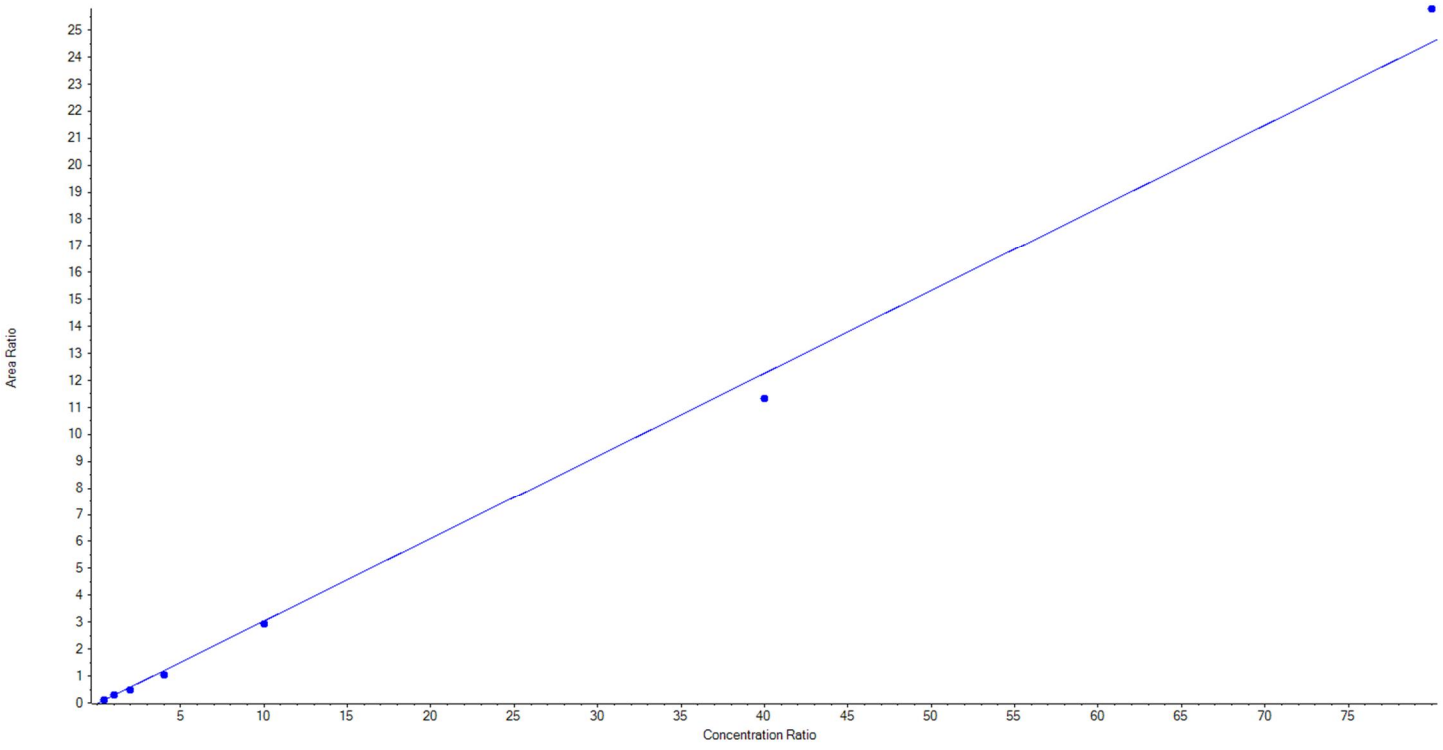
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFNA_2	**Data File**	09172018.wiff
MRM Transition	463.0 / 219.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C9-PFNA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.30725 x + -0.02895 (r = 0.99770) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	125.402344	125.4
3	KA87	L2	True	250.00	271.570220	108.6
4	KA88	L3	True	500.00	426.763431	85.4
5	KA89	L4	True	1000.00	869.989302	87.0
6	KA90	L5	True	2500.00	2402.105144	96.1
7	KA91	L6	True	10000.00	9252.579507	92.5
8	KA92	L7	True	20000.00	21001.590051	105.0



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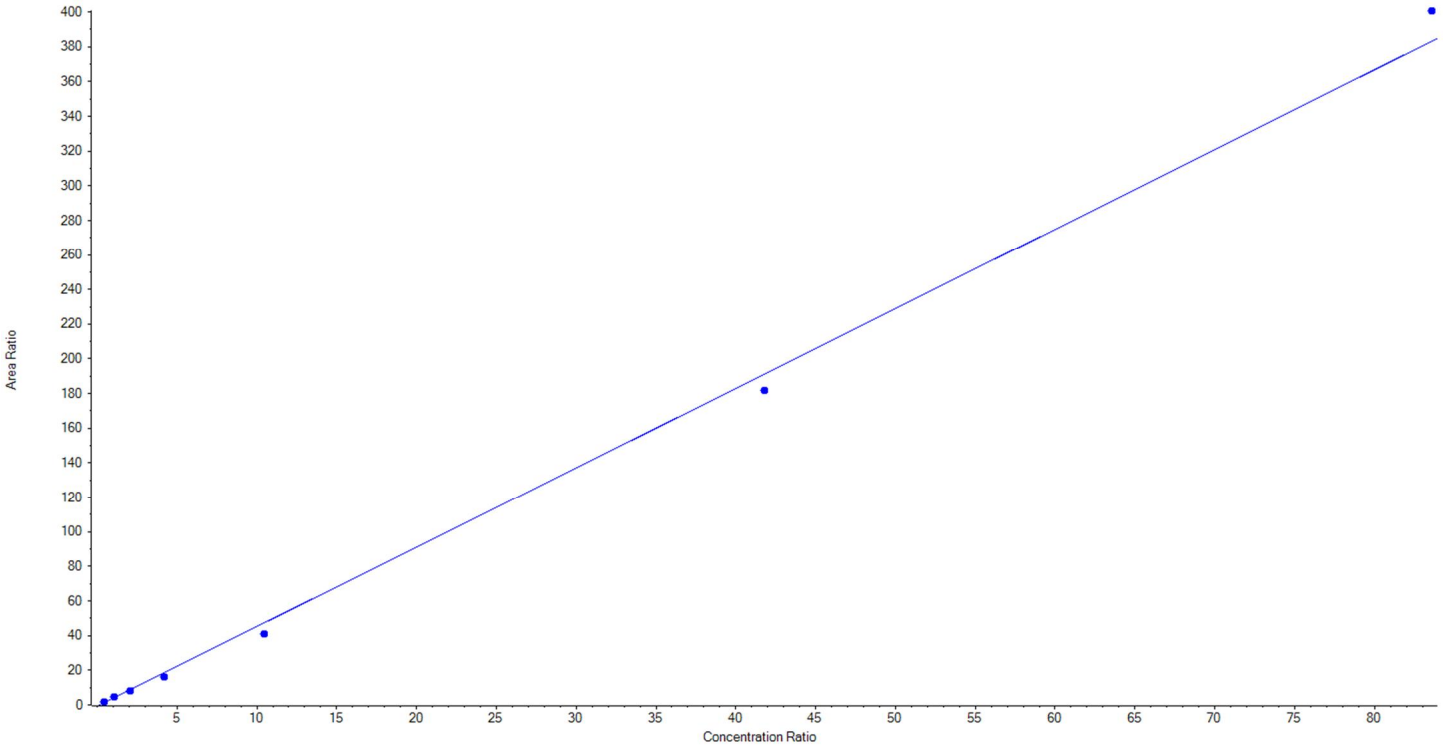
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOS_1	**Data File**	09172018.wiff
MRM Transition	499.0 / 80.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 4.59265 x + -0.69673 (r = 0.99797) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	119.339962	119.3
3	KA87	L2	True	250.00	281.982603	112.8
4	KA88	L3	True	500.00	462.945369	92.6
5	KA89	L4	True	1000.00	882.307346	88.2
6	KA90	L5	True	2500.00	2184.290401	87.4
7	KA91	L6	True	10000.00	9515.980092	95.2
8	KA92	L7	True	20000.00	20903.154227	104.5



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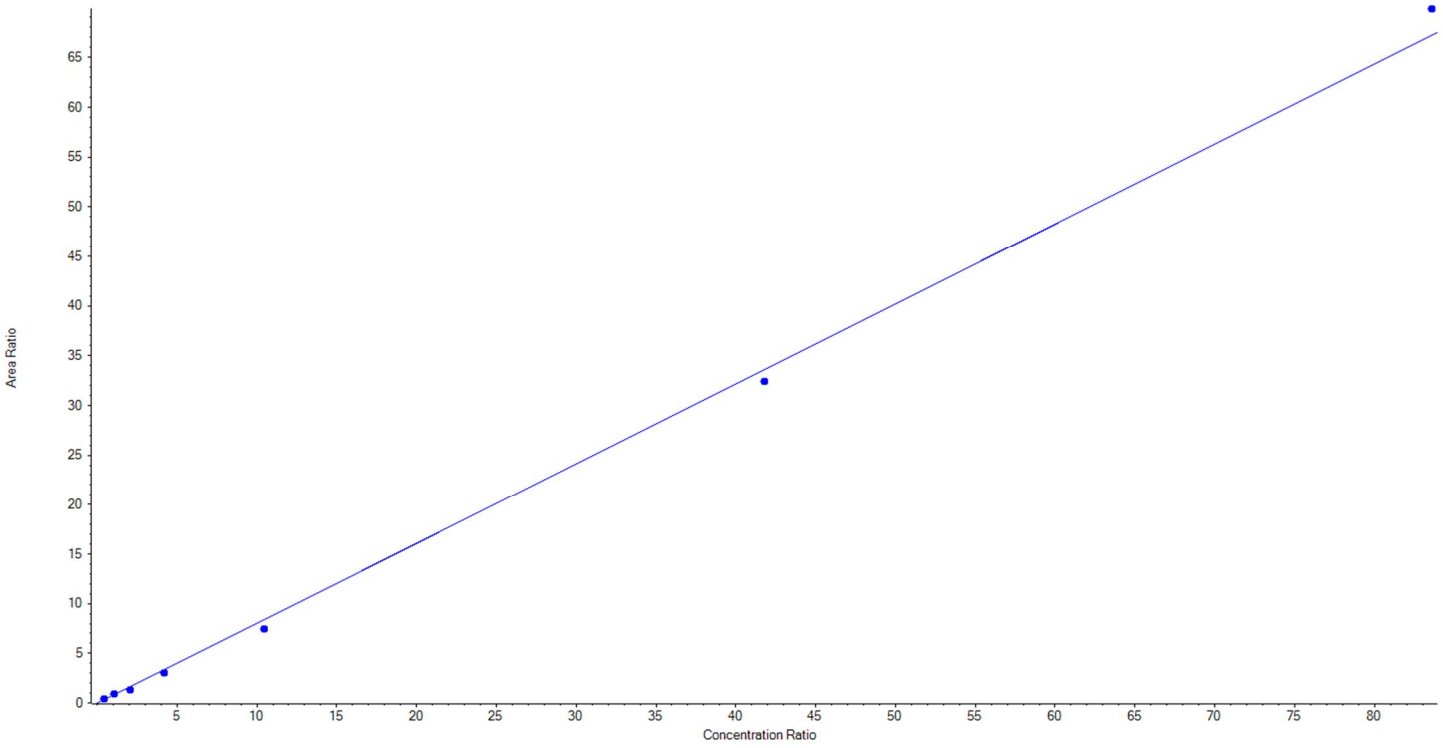
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOS_2	**Data File**	09172018.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.80443 x + -0.02185 (r = 0.99812) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	125.505534	125.5
3	KA87	L2	True	250.00	288.650412	115.5
4	KA88	L3	True	500.00	405.249707	81.1
5	KA89	L4	True	1000.00	892.164074	89.2
6	KA90	L5	True	2500.00	2209.859495	88.4
7	KA91	L6	True	10000.00	9646.143779	96.5
8	KA92	L7	True	20000.00	20782.426999	103.9



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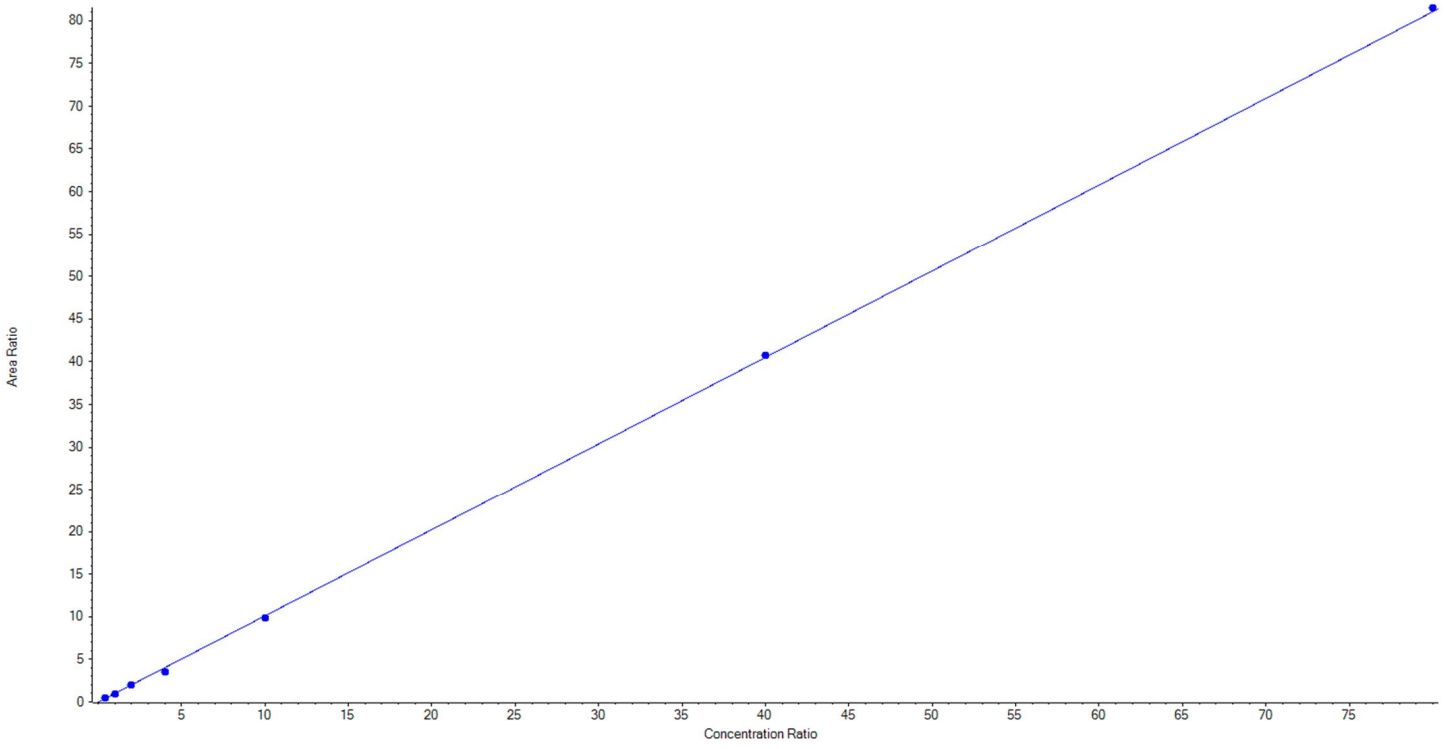
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFDA_1	**Data File**	09172018.wiff
MRM Transition	513.0 / 469.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C6-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.01339 x + -0.02388 (r = 0.99961) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	123.381231	123.4
3	KA87	L2	True	250.00	229.784275	91.9
4	KA88	L3	True	500.00	489.210038	97.8
5	KA89	L4	True	1000.00	877.127184	87.7
6	KA90	L5	True	2500.00	2446.700602	97.9
7	KA91	L6	True	10000.00	10072.665193	100.7
8	KA92	L7	True	20000.00	20111.131477	100.6



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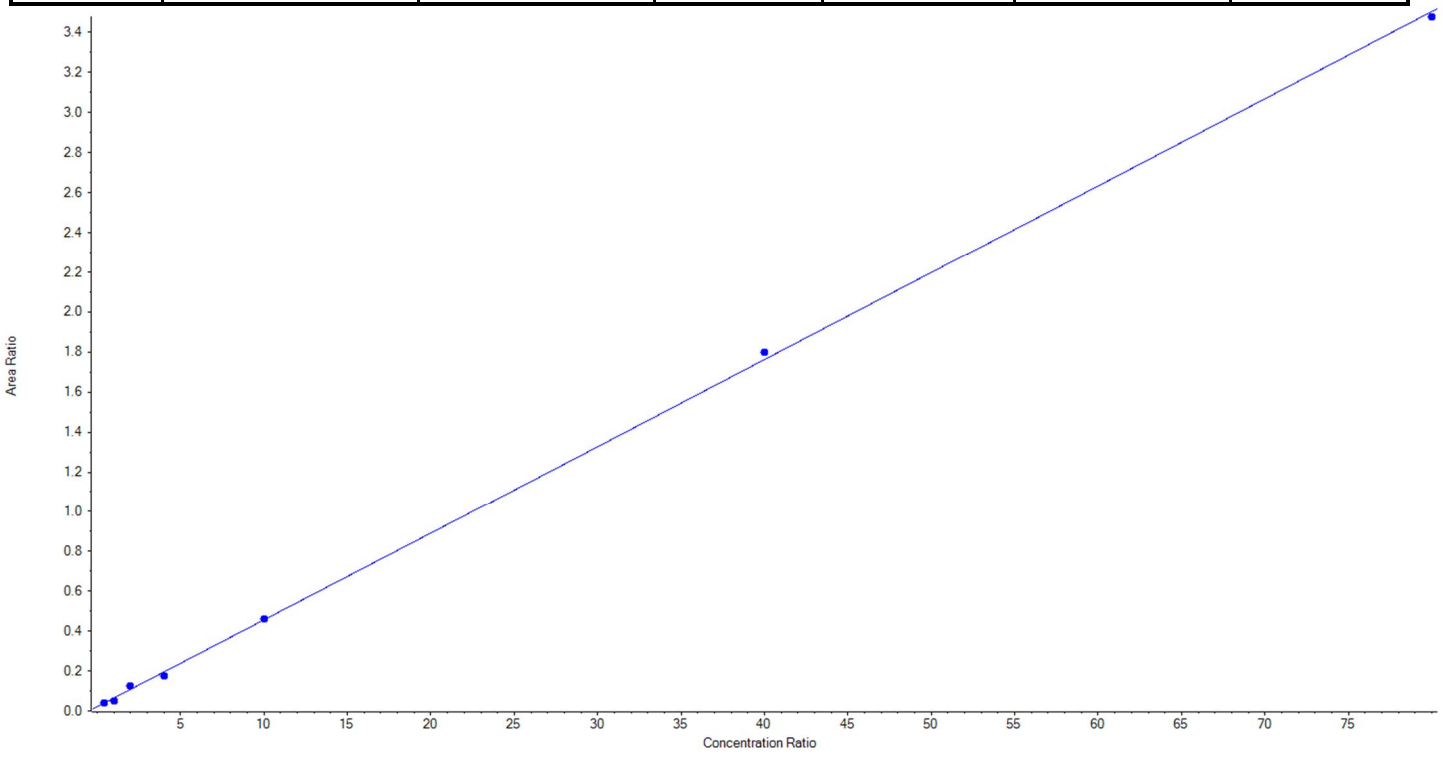
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFDA_2	**Data File**	09172018.wiff
MRM Transition	513.0 / 219.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C6-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.04354 x + 0.02103 (r = 0.99909) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	120.626037	120.6
3	KA87	L2	True	250.00	179.629735	71.9
4	KA88	L3	True	500.00	584.610035	116.9
5	KA89	L4	True	1000.00	885.454676	88.6
6	KA90	L5	True	2500.00	2516.263417	100.7
7	KA91	L6	True	10000.00	10217.395513	102.2
8	KA92	L7	True	20000.00	19846.020588	99.2



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Calibration Summary Report

Created with Analyst Reporter
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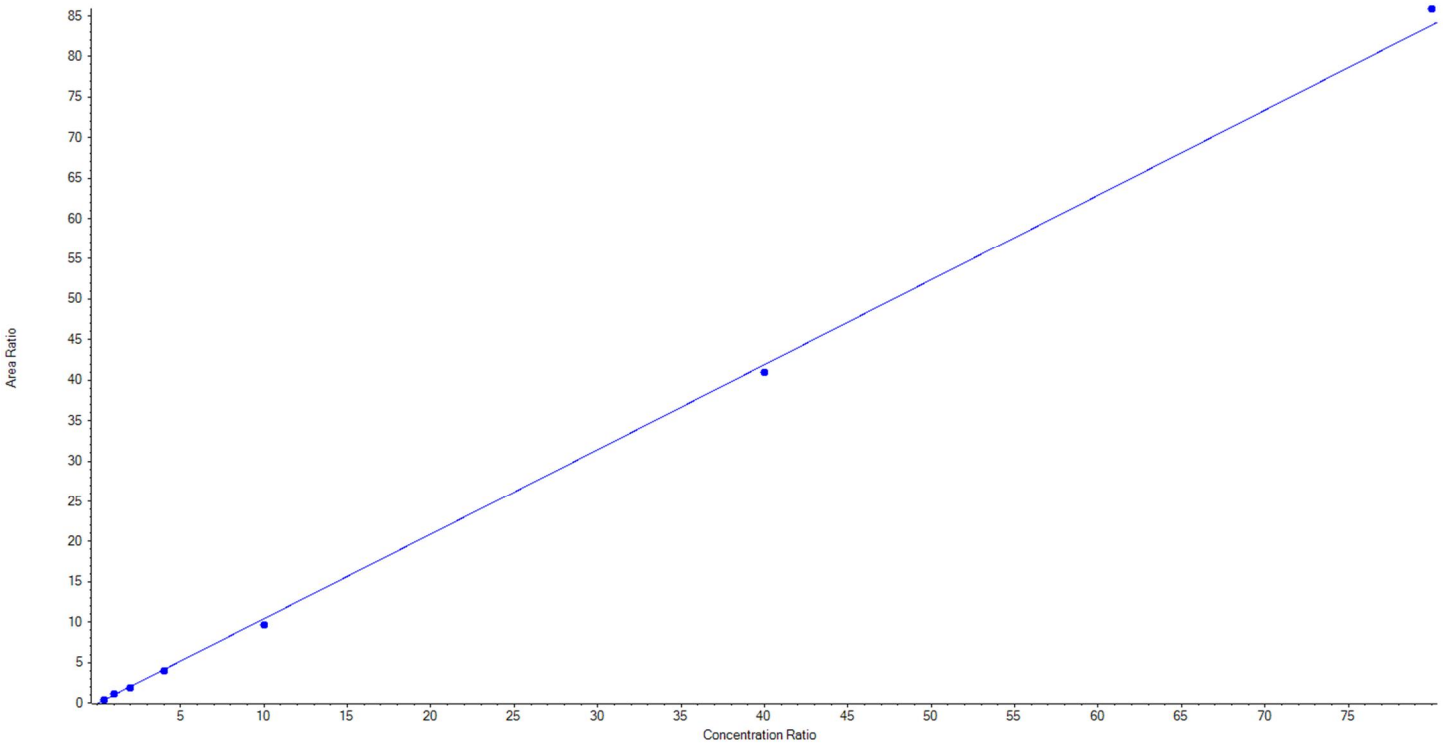
Analyte Name	PFUnA_1	**Data File**	09172018.wiff
MRM Transition	563.0 / 519.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C7-PFUnA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.04951 x + -0.07889 (r = 0.99938) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	112.077862	112.1
3	KA87	L2	True	250.00	269.635011	107.9
4	KA88	L3	True	500.00	464.306485	92.9
5	KA89	L4	True	1000.00	947.368226	94.7
6	KA90	L5	True	2500.00	2308.798801	92.4
7	KA91	L6	True	10000.00	9775.798827	97.8
8	KA92	L7	True	20000.00	20472.014787	102.4



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Calibration Summary Report

Created with Analyst Reporter
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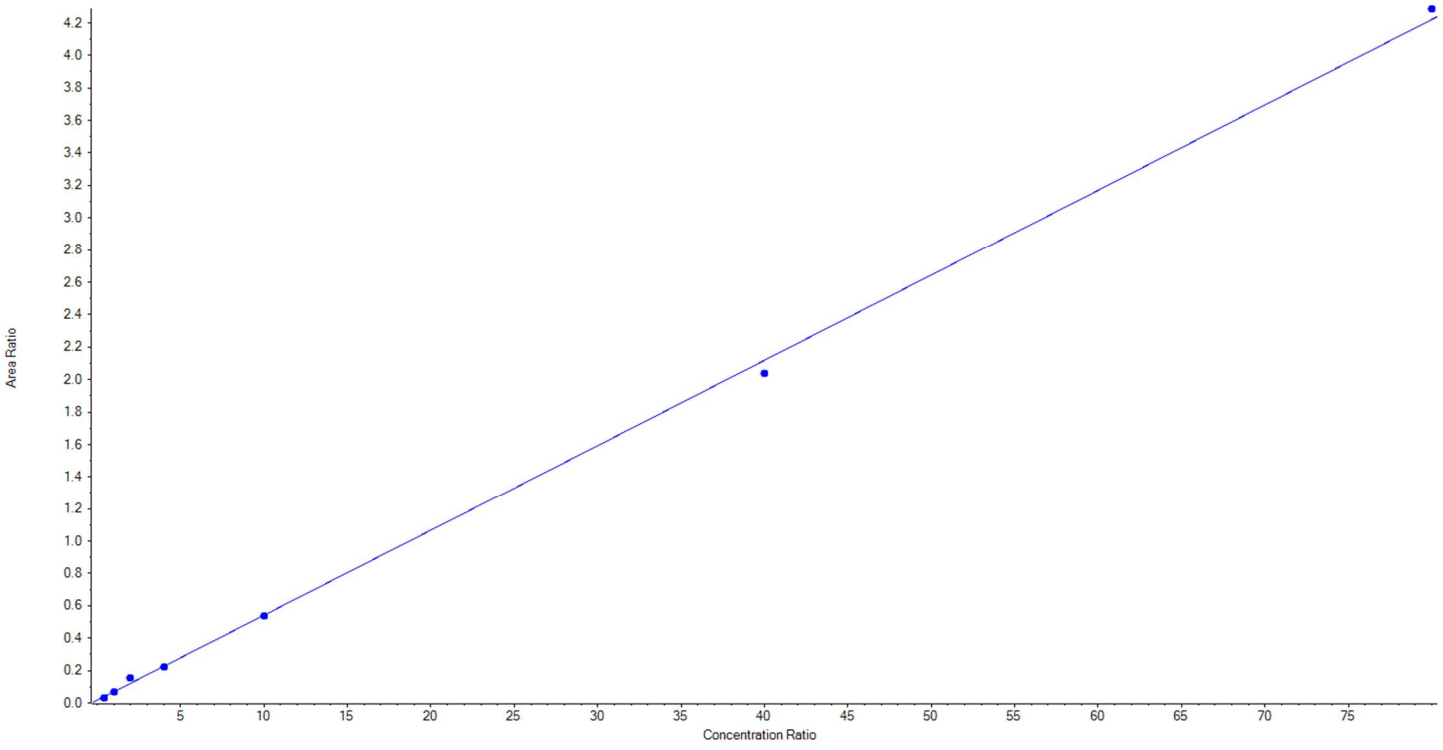
Analyte Name	PFUnA_2	**Data File**	09172018.wiff
MRM Transition	563.0 / 269.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C7-PFUnA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.05256 x + 0.01624 (r = 0.99876) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	79.576176	79.6
3	KA87	L2	True	250.00	232.688592	93.1
4	KA88	L3	True	500.00	662.089510	132.4
5	KA89	L4	True	1000.00	981.865681	98.2
6	KA90	L5	True	2500.00	2478.234771	99.1
7	KA91	L6	True	10000.00	9607.359880	96.1
8	KA92	L7	True	20000.00	20308.185390	101.5



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Calibration Summary Report

Created with Analyst Reporter
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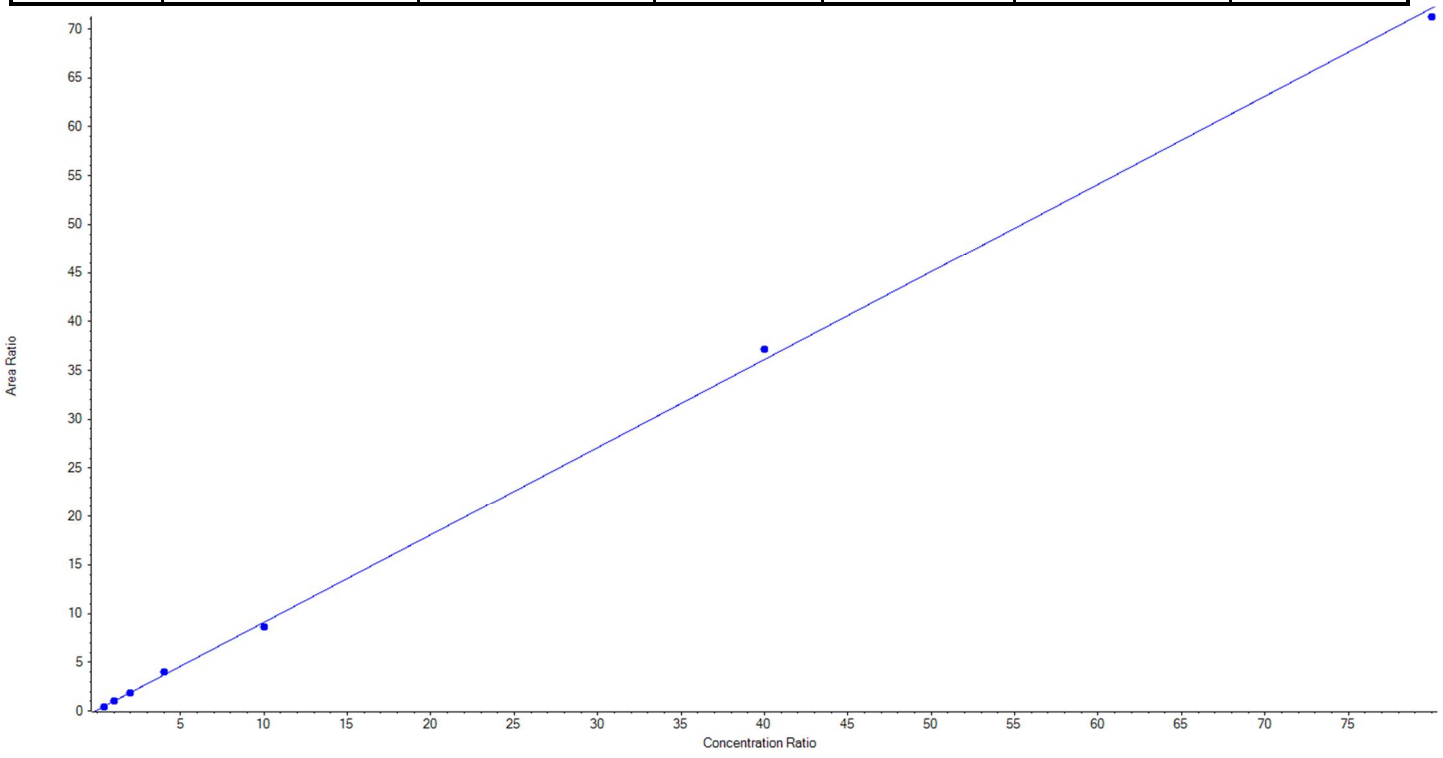
Analyte Name	PFDoA_1	**Data File**	09172018.wiff
MRM Transition	613.0 / 569.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFDoA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.90040 x + 0.08961 (r = 0.99955) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	88.128553	88.1
3	KA87	L2	True	250.00	273.764190	109.5
4	KA88	L3	True	500.00	492.124770	98.4
5	KA89	L4	True	1000.00	1073.842486	107.4
6	KA90	L5	True	2500.00	2369.692338	94.8
7	KA91	L6	True	10000.00	10301.327343	103.0
8	KA92	L7	True	20000.00	19751.120321	98.8



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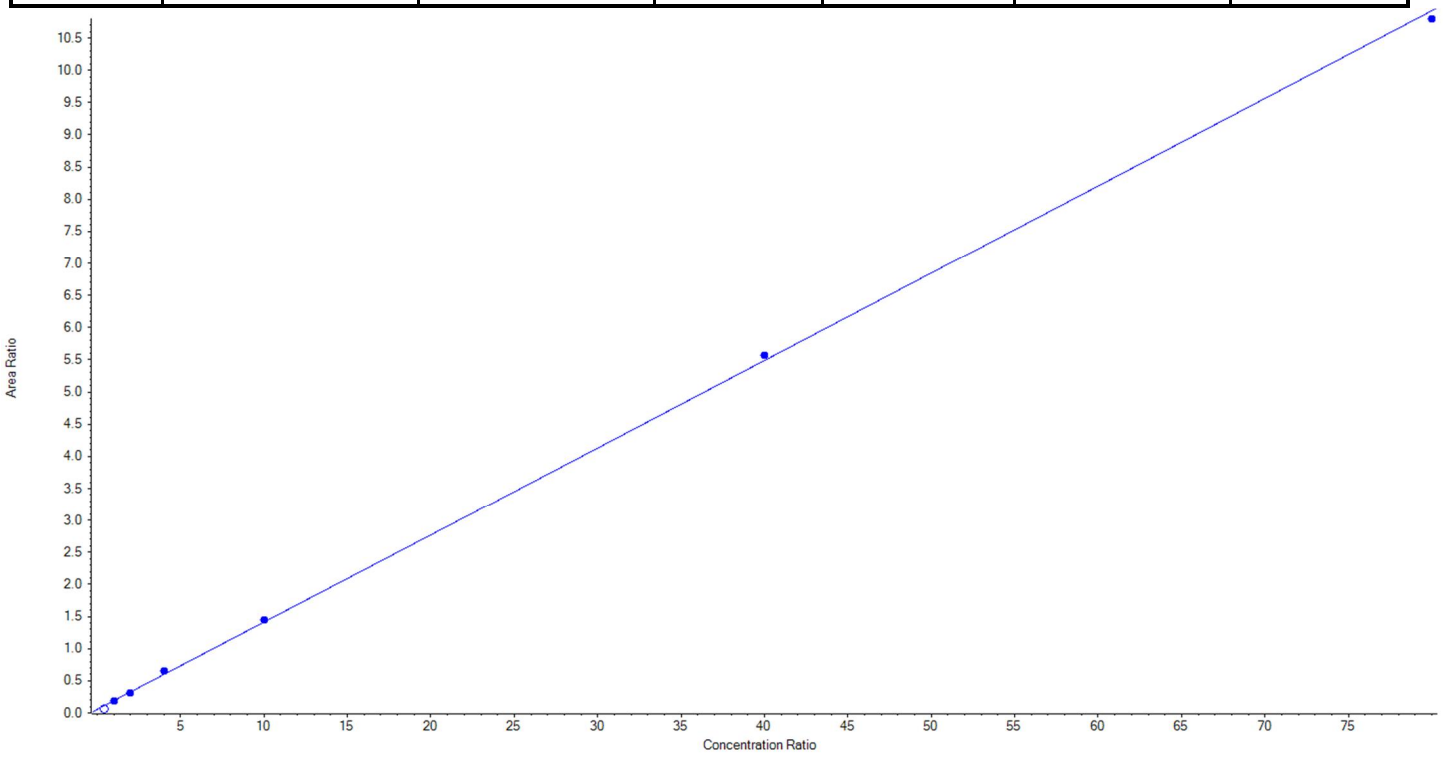
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFDoA_2	**Data File**	09172018.wiff
MRM Transition	613.0 / 319.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFDoA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.13583 x + 0.05473 (r = 0.99972) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	7.034440	7.0
3	KA87	L2	True	250.00	239.702506	95.9
4	KA88	L3	True	500.00	464.229195	92.9
5	KA89	L4	True	1000.00	1088.014716	108.8
6	KA90	L5	True	2500.00	2557.504369	102.3
7	KA91	L6	True	10000.00	10133.753203	101.3
8	KA92	L7	True	20000.00	19766.796011	98.8



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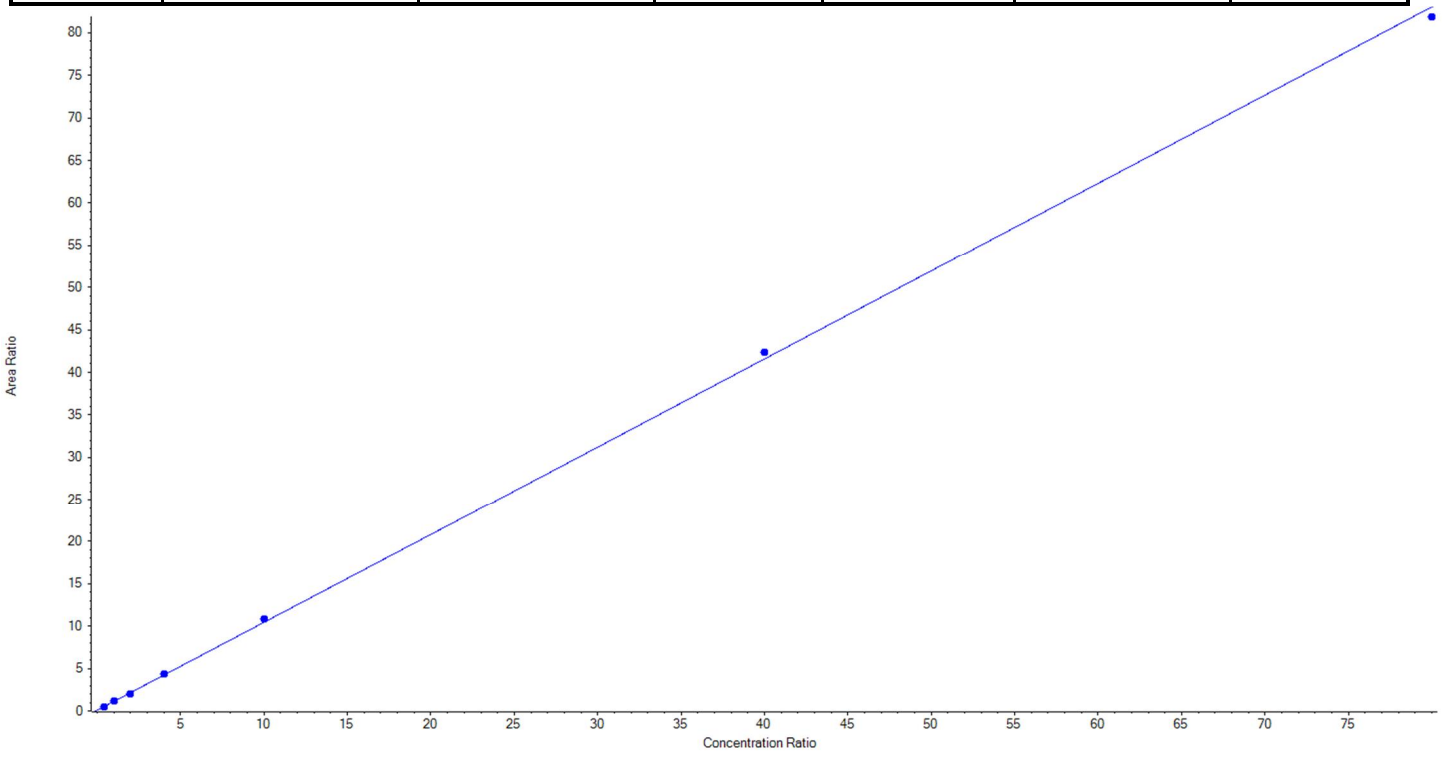
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTrDA_1	**Data File**	09172018.wiff
MRM Transition	663.0 / 619.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.03709 x + 0.08501 (r = 0.99977) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	99.790493	99.8
3	KA87	L2	True	250.00	250.094800	100.0
4	KA88	L3	True	500.00	467.113857	93.4
5	KA89	L4	True	1000.00	1021.949549	102.2
6	KA90	L5	True	2500.00	2600.667405	104.0
7	KA91	L6	True	10000.00	10195.049043	102.0
8	KA92	L7	True	20000.00	19715.334854	98.6



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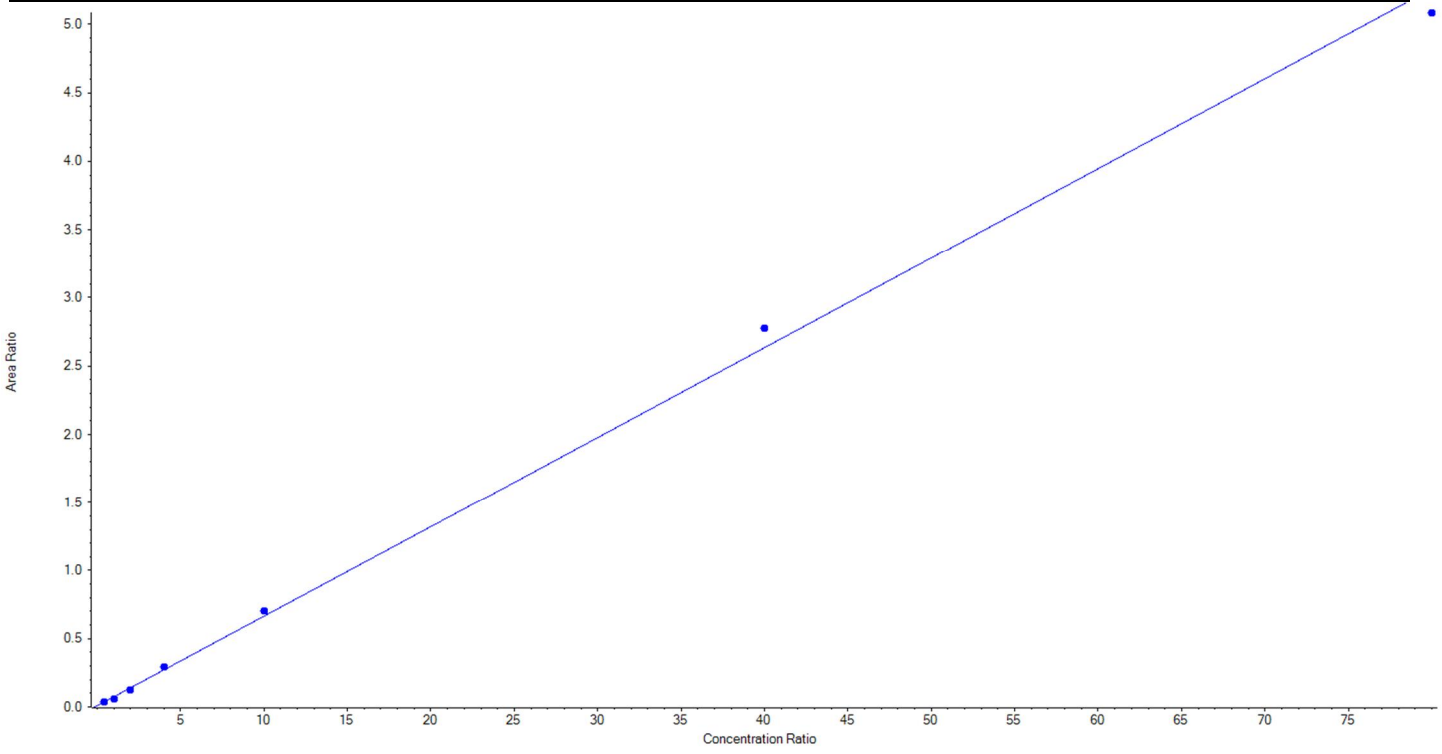
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTrDA_2	**Data File**	09172018.wiff
MRM Transition	663.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.06563 x + 0.00866 (r = 0.99864) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	116.473665	116.5
3	KA87	L2	True	250.00	203.820813	81.5
4	KA88	L3	True	500.00	434.539421	86.9
5	KA89	L4	True	1000.00	1074.636675	107.5
6	KA90	L5	True	2500.00	2635.720549	105.4
7	KA91	L6	True	10000.00	10554.718378	105.6
8	KA92	L7	True	20000.00	19330.090498	96.7



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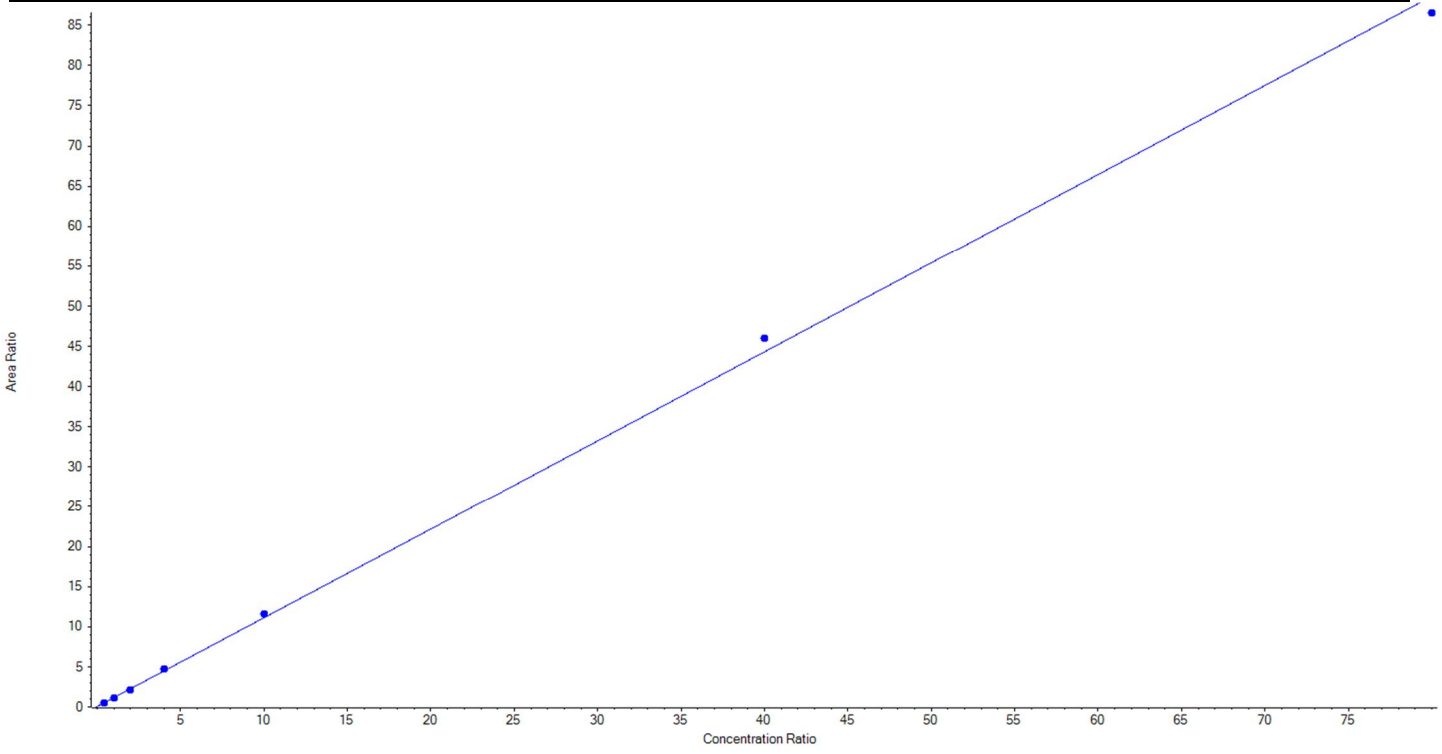
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTeDA_1	**Data File**	09172018.wiff
MRM Transition	713.0 / 669.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.10654 x + 0.05698 (r = 0.99946) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	100.402544	100.4
3	KA87	L2	True	250.00	246.214443	98.5
4	KA88	L3	True	500.00	457.165546	91.4
5	KA89	L4	True	1000.00	1043.554804	104.4
6	KA90	L5	True	2500.00	2599.020799	104.0
7	KA91	L6	True	10000.00	10368.809522	103.7
8	KA92	L7	True	20000.00	19534.832341	97.7



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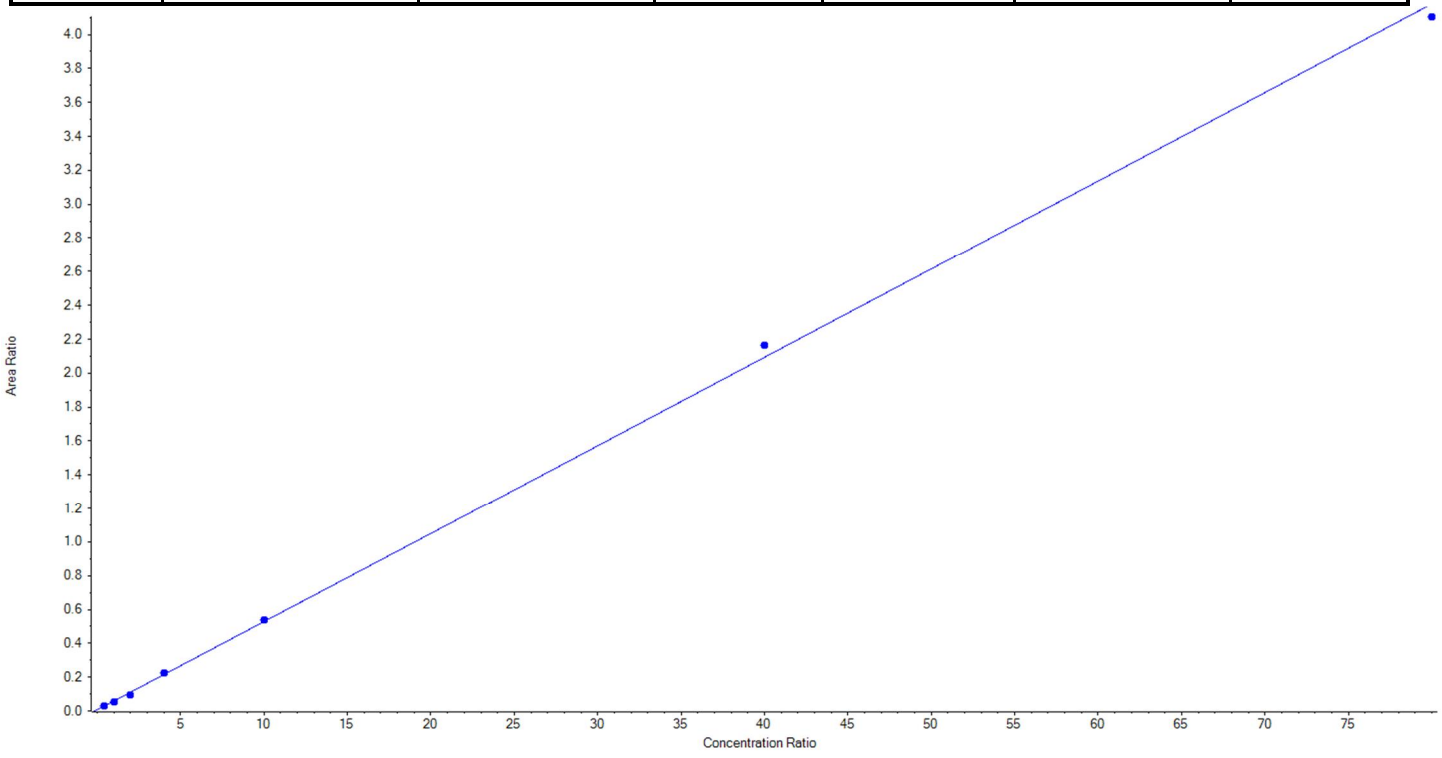
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTeDA_2	**Data File**	09172018.wiff
MRM Transition	713.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.05217 x + 0.00647 (r = 0.99939) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	116.090955	116.1
3	KA87	L2	True	250.00	225.543930	90.2
4	KA88	L3	True	500.00	425.923534	85.2
5	KA89	L4	True	1000.00	1049.410678	104.9
6	KA90	L5	True	2500.00	2546.869712	101.9
7	KA91	L6	True	10000.00	10352.020695	103.5
8	KA92	L7	True	20000.00	19634.140495	98.2



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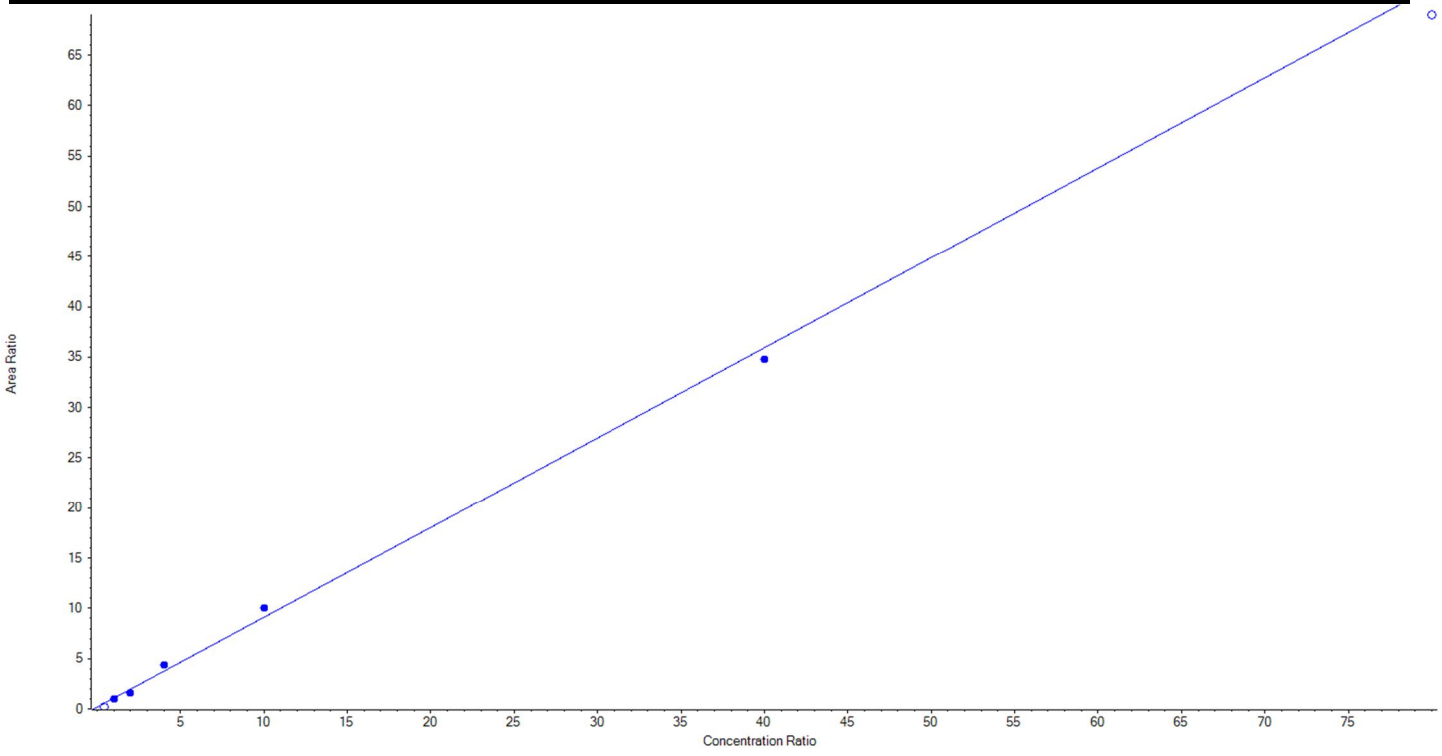
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NMeFOSAA_1	**Data File**	09172018.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.89404 x + 0.17215 (r = 0.99565) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	6.793695	6.8
3	KA87	L2	True	250.00	239.301241	95.7
4	KA88	L3	True	500.00	393.377176	78.7
5	KA89	L4	True	1000.00	1183.519250	118.4
6	KA90	L5	True	2500.00	2763.804001	110.6
7	KA91	L6	True	10000.00	9669.998332	96.7
8	KA92	L7	False	20000.00	19238.393743	96.2



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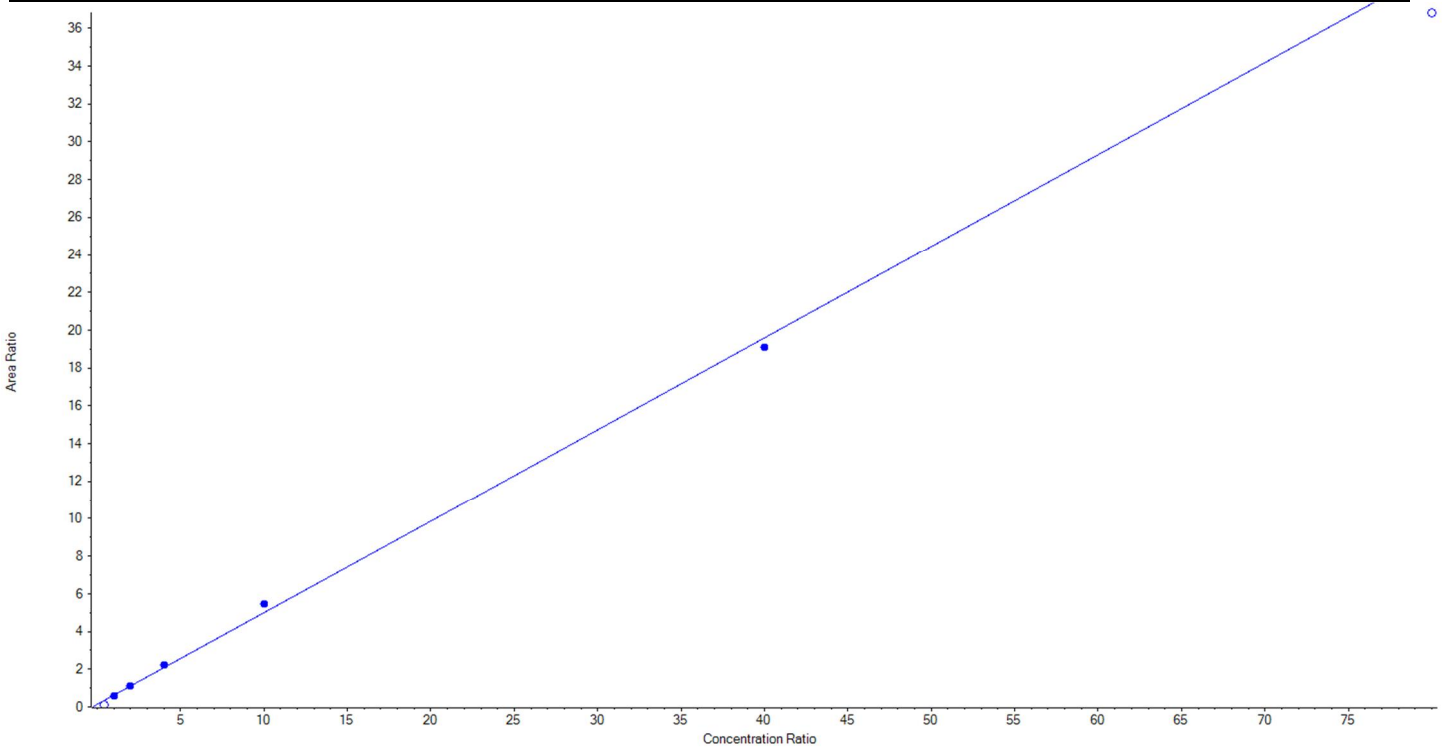
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NMeFOSAA_2	**Data File**	09172018.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.48641 x + 0.13587 (r = 0.99843) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	< 0	N/A
3	KA87	L2	True	250.00	222.372754	89.0
4	KA88	L3	True	500.00	489.969333	98.0
5	KA89	L4	True	1000.00	1065.570036	106.6
6	KA90	L5	True	2500.00	2725.971649	109.0
7	KA91	L6	True	10000.00	9746.116228	97.5
8	KA92	L7	False	20000.00	18850.385028	94.3



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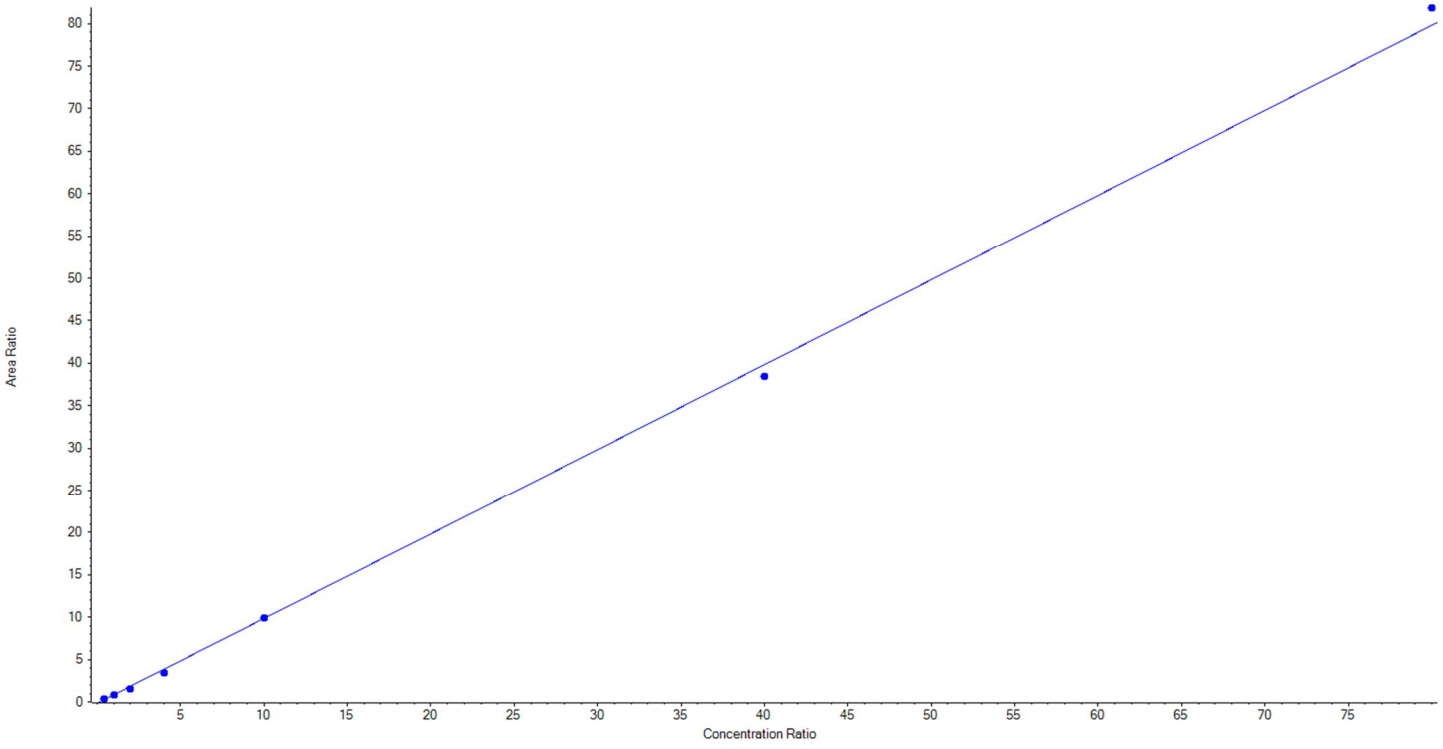
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NEtFOSAA_1	**Data File**	09172018.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d5-EtFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.99925 x + -0.14634 (r = 0.99910) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	126.817690	126.8
3	KA87	L2	True	250.00	251.047435	100.4
4	KA88	L3	True	500.00	422.904833	84.6
5	KA89	L4	True	1000.00	891.010106	89.1
6	KA90	L5	True	2500.00	2501.814267	100.1
7	KA91	L6	True	10000.00	9645.351972	96.5
8	KA92	L7	True	20000.00	20511.053697	102.6



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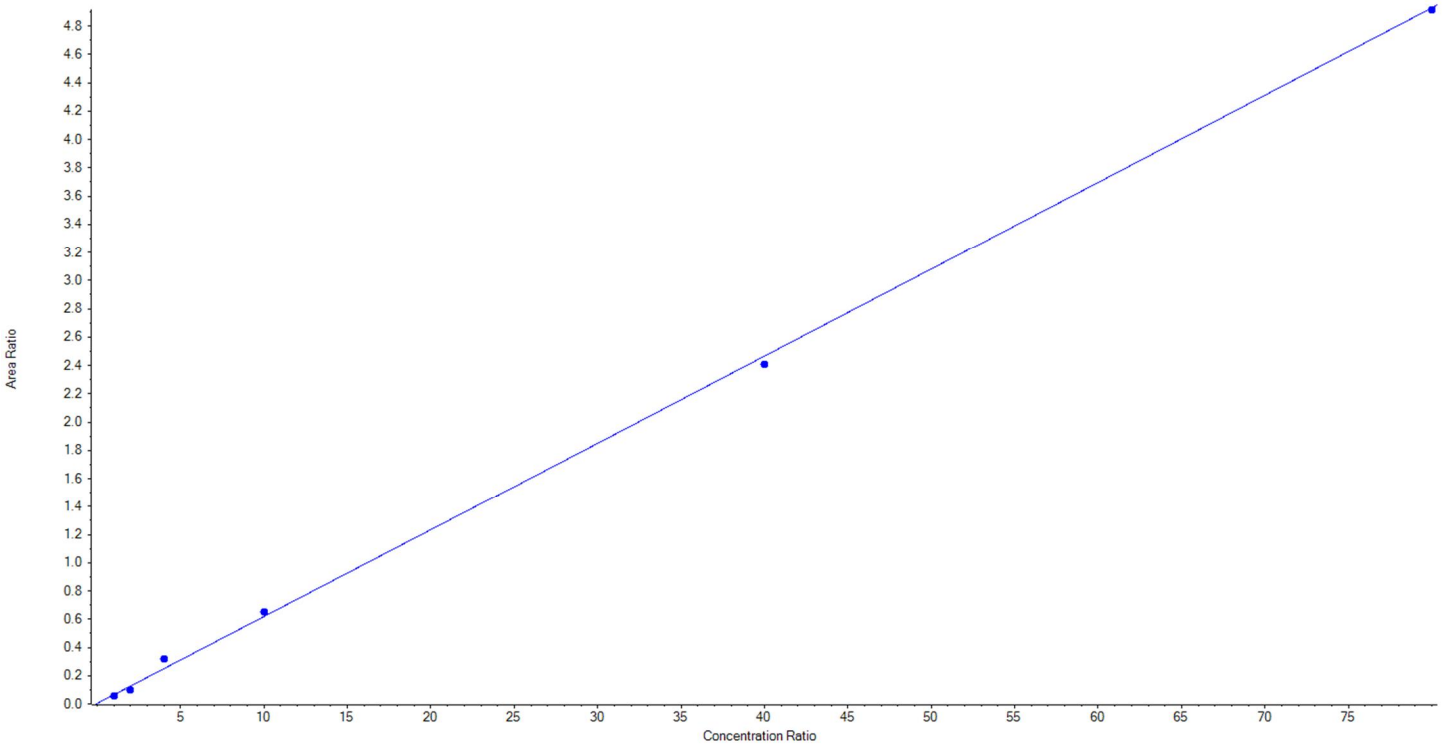
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NEtFOSAA_2	**Data File**	09172018.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d5-EtFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.06155 x + 0.00341 (r = 0.99795) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	N/A	N/A
3	KA87	L2	True	250.00	227.466765	91.0
4	KA88	L3	True	500.00	388.255864	77.7
5	KA89	L4	True	1000.00	1285.149703	128.5
6	KA90	L5	True	2500.00	2635.702419	105.4
7	KA91	L6	True	10000.00	9770.385587	97.7
8	KA92	L7	True	20000.00	19943.039662	99.7



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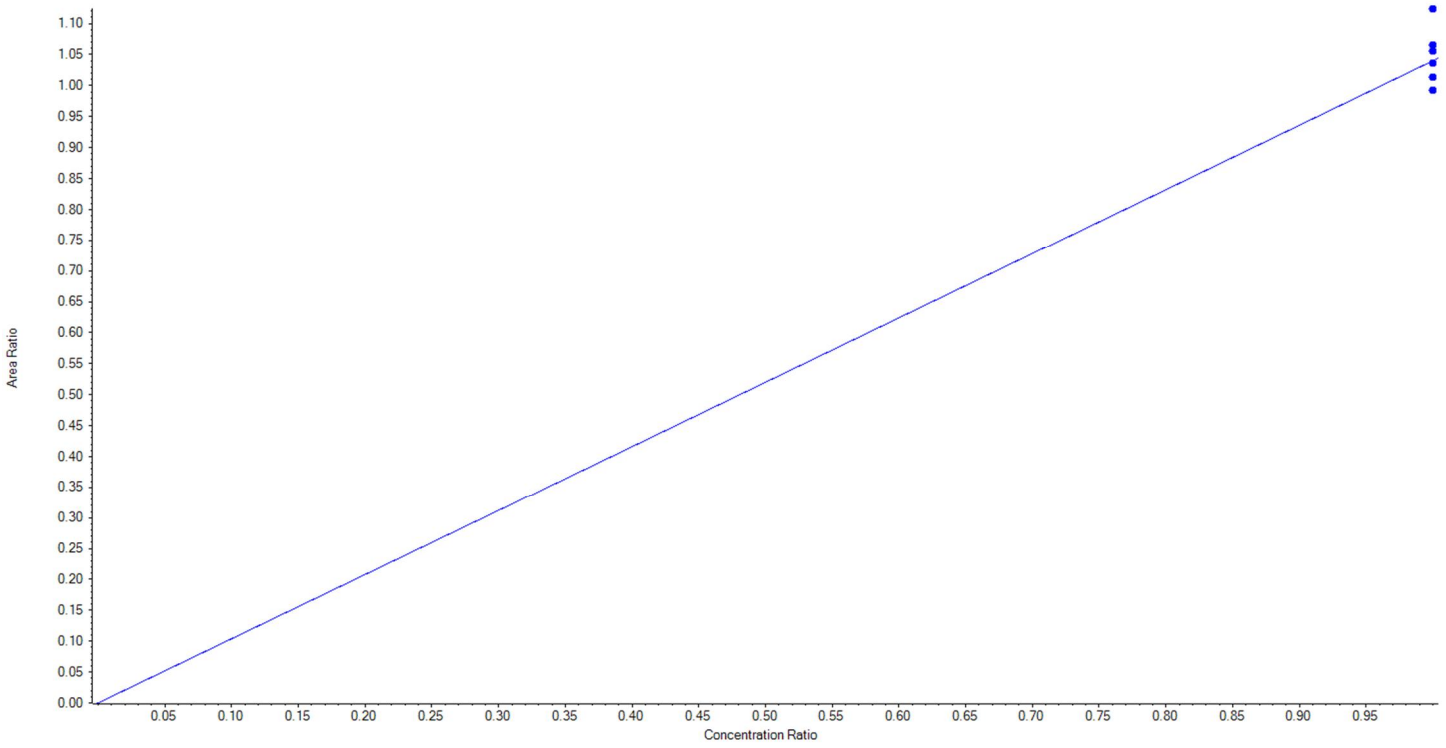
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C2-PFDoA	**Data File**	09172018.wiff
MRM Transition	615.0 / 570.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.03997 x (std. dev. = 0.04677) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	249.086588	99.6
3	KA87	L2	True	250.00	238.645940	95.5
4	KA88	L3	True	250.00	238.394426	95.4
5	KA89	L4	True	250.00	243.830078	97.5
6	KA90	L5	True	250.00	253.934265	101.6
7	KA91	L6	True	250.00	270.113460	108.1
8	KA92	L7	True	250.00	255.995243	102.4



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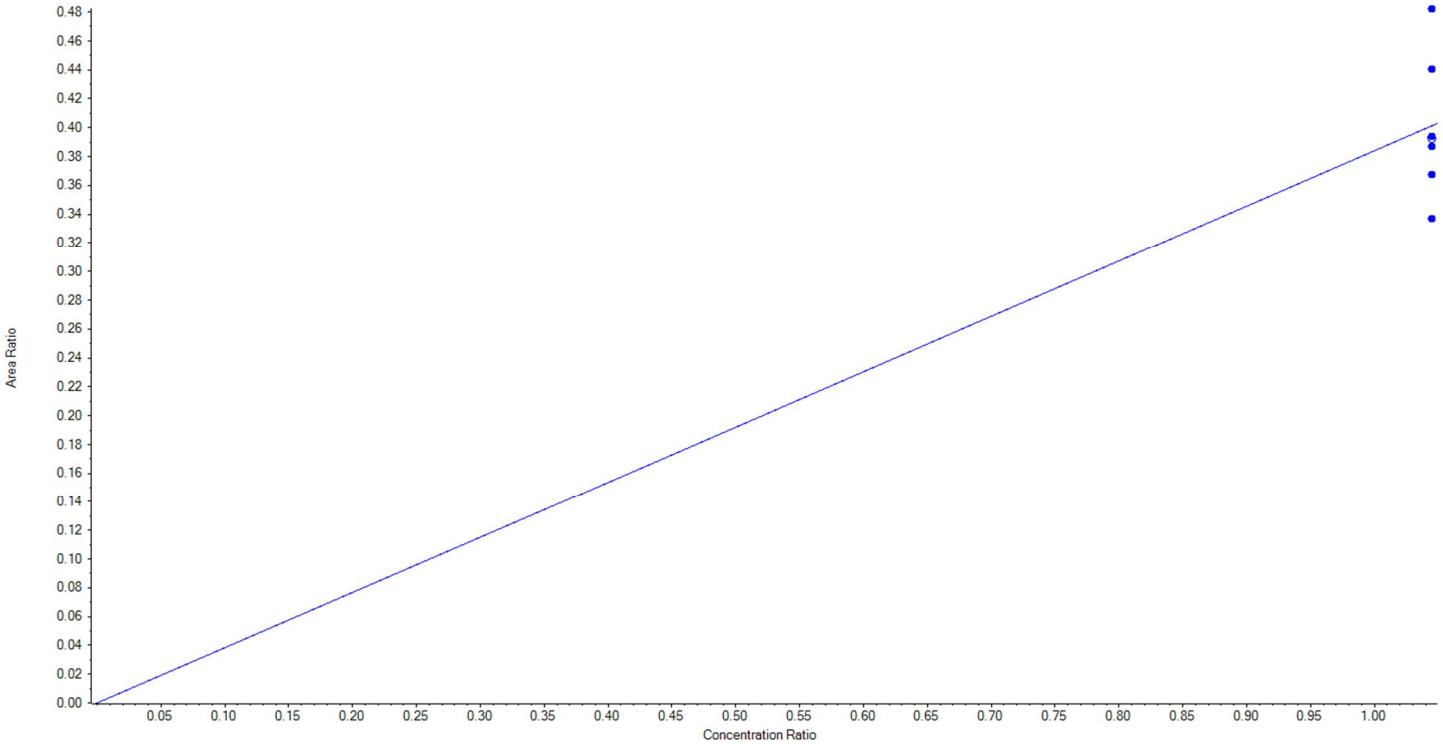
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	d3-MeFOSAA	**Data File**	09172018.wiff
MRM Transition	573.0 / 419.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.38400 x (std. dev. = 0.05004) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	300.400671	120.2
3	KA87	L2	True	250.00	274.452400	109.8
4	KA88	L3	True	250.00	228.785668	91.5
5	KA89	L4	True	250.00	245.527562	98.2
6	KA90	L5	True	250.00	209.762632	83.9
7	KA91	L6	True	250.00	241.071066	96.4
8	KA92	L7	False	250.00	244.509991	97.8



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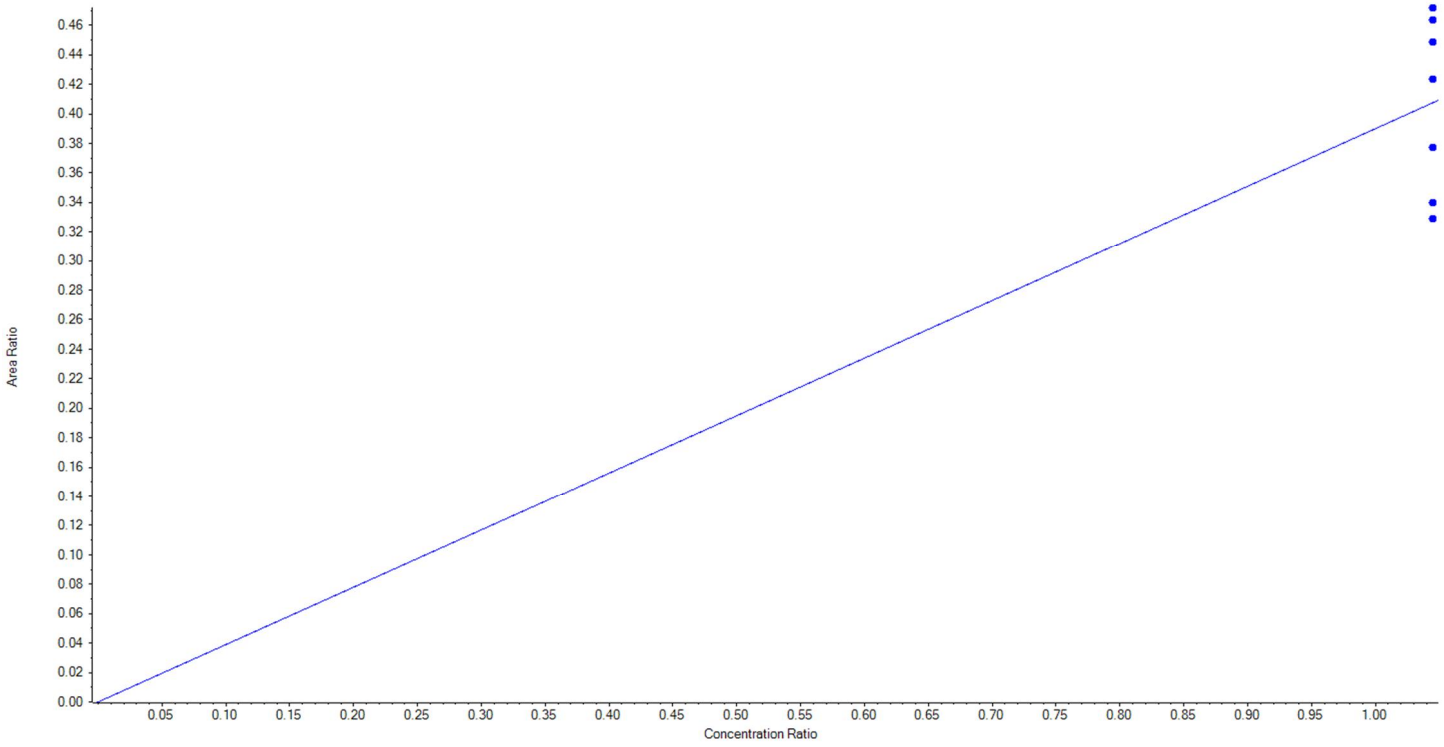
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	d5-EtFOSAA	**Data File**	09172018.wiff
MRM Transition	589.0 / 419.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.38999 x (std. dev. = 0.05649) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	275.037347	110.0
3	KA87	L2	True	250.00	284.389280	113.8
4	KA88	L3	True	250.00	259.734770	103.9
5	KA89	L4	True	250.00	289.399919	115.8
6	KA90	L5	True	250.00	208.474609	83.4
7	KA91	L6	True	250.00	231.311069	92.5
8	KA92	L7	True	250.00	201.653006	80.7



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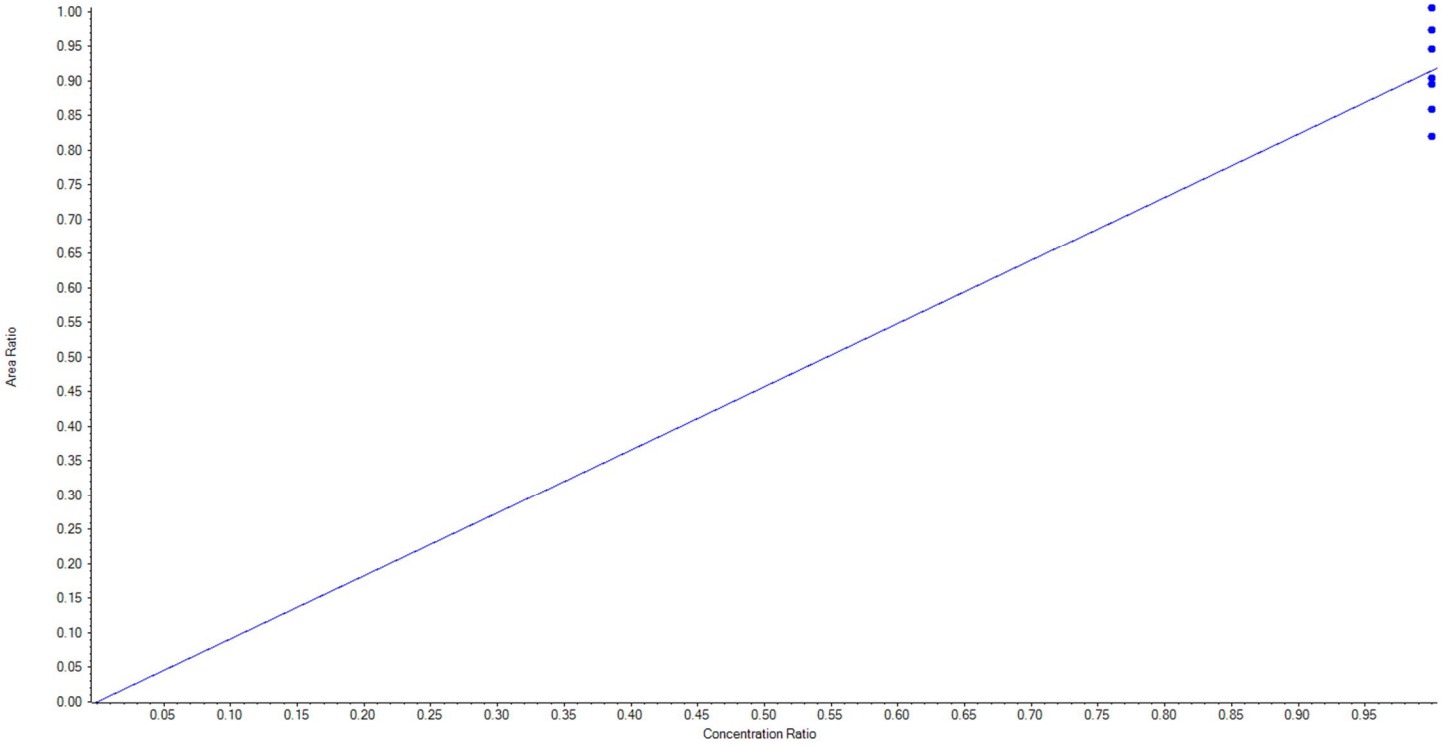
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C5-PFHxA	**Data File**	09172018.wiff
MRM Transition	318.0 / 273.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.91513 x (std. dev. = 0.06468) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	258.596536	103.4
3	KA87	L2	True	250.00	224.229706	89.7
4	KA88	L3	True	250.00	265.935039	106.4
5	KA89	L4	True	250.00	244.637046	97.9
6	KA90	L5	True	250.00	274.765057	109.9
7	KA91	L6	True	250.00	247.025554	98.8
8	KA92	L7	True	250.00	234.811063	93.9



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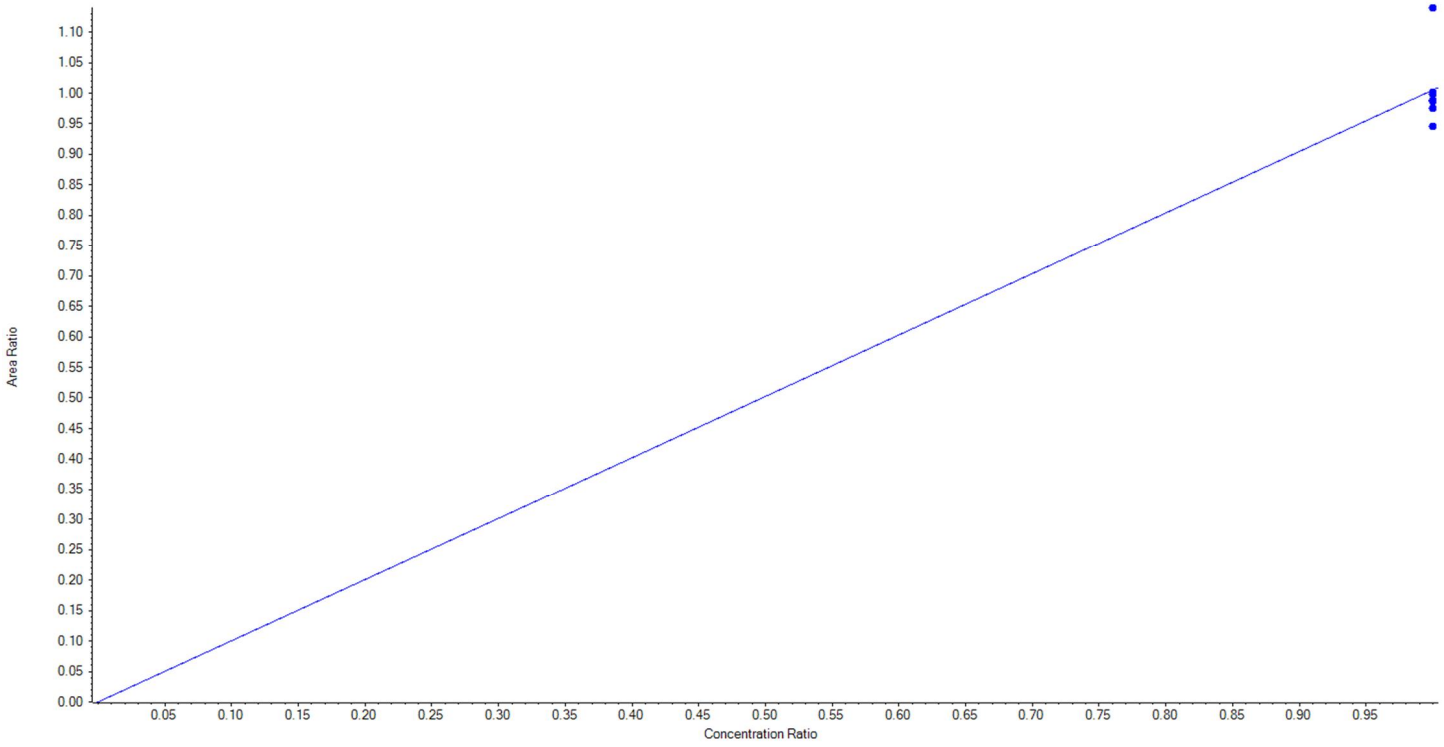
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C4-PFHpA	**Data File**	09172018.wiff
MRM Transition	367.0 / 322.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.00523 x (std. dev. = 0.06210) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	248.258573	99.3
3	KA87	L2	True	250.00	249.175721	99.7
4	KA88	L3	True	250.00	283.398669	113.4
5	KA89	L4	True	250.00	242.518576	97.0
6	KA90	L5	True	250.00	246.012403	98.4
7	KA91	L6	True	250.00	245.447951	98.2
8	KA92	L7	True	250.00	235.188108	94.1



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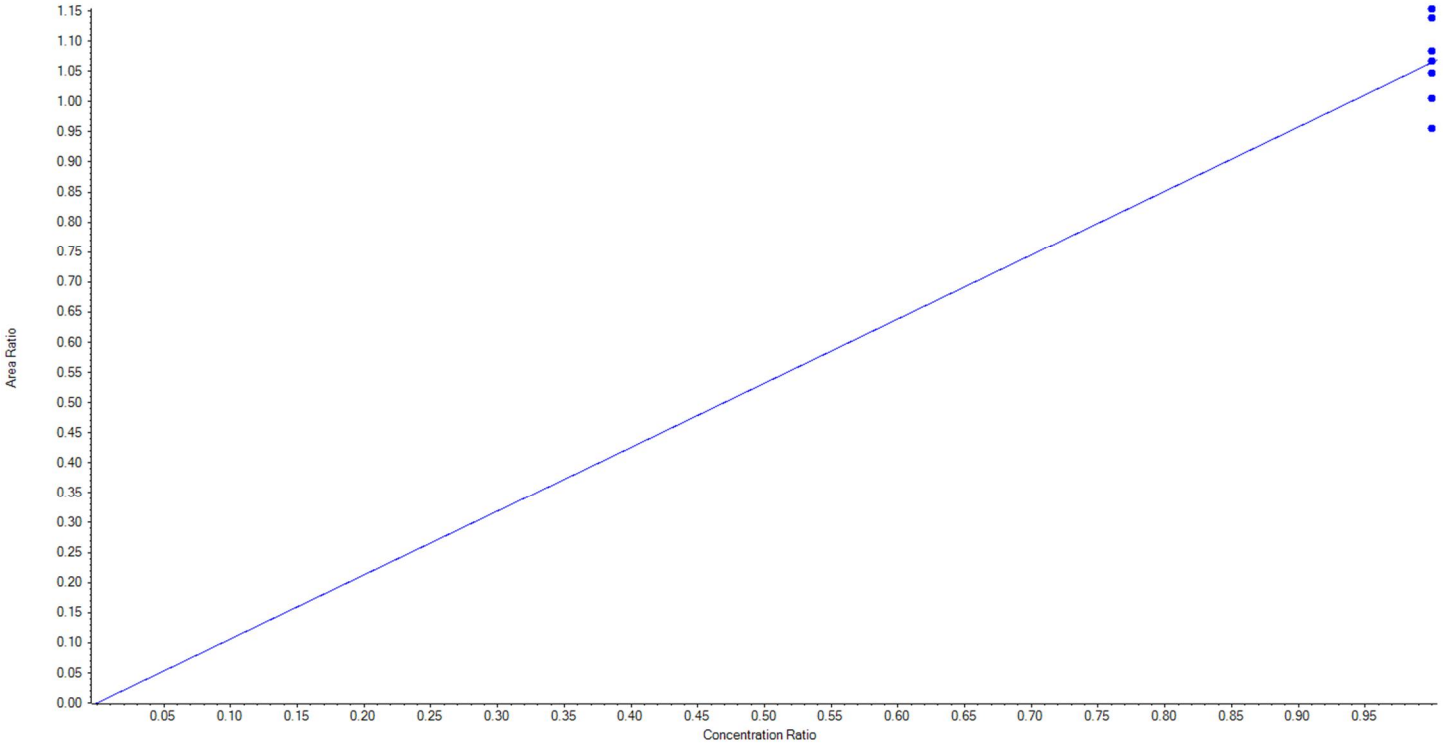
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C8-PFOA	**Data File**	09172018.wiff
MRM Transition	421.0 / 376.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.06431 x (std. dev. = 0.06971) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	245.870251	98.4
3	KA87	L2	True	250.00	267.208605	106.9
4	KA88	L3	True	250.00	250.678923	100.3
5	KA89	L4	True	250.00	254.619374	101.9
6	KA90	L5	True	250.00	270.900302	108.4
7	KA91	L6	True	250.00	236.095879	94.4
8	KA92	L7	True	250.00	224.626665	89.9



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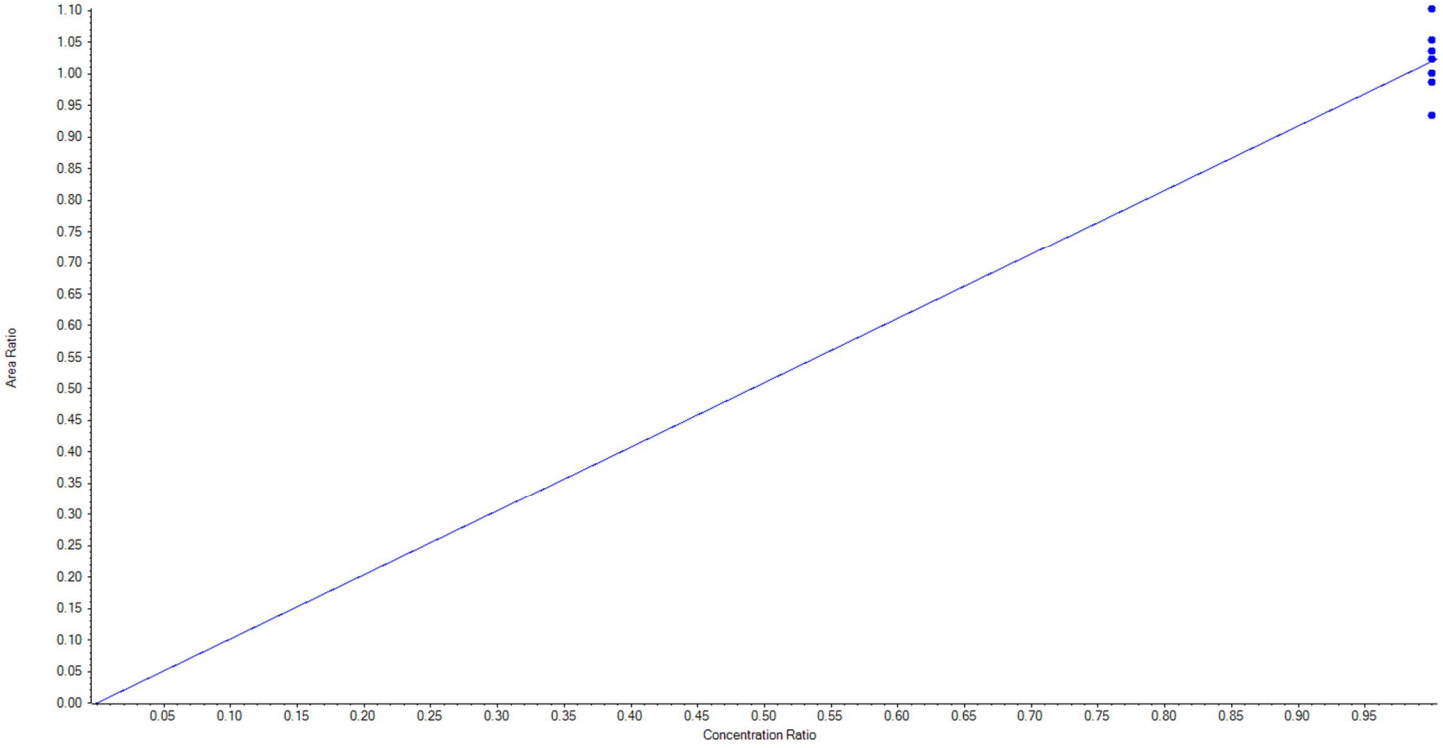
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C9-PFNA	**Data File**	09172018.wiff
MRM Transition	472.0 / 427.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.01962 x (std. dev. = 0.05344) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	241.798020	96.7
3	KA87	L2	True	250.00	258.175435	103.3
4	KA88	L3	True	250.00	270.414804	108.2
5	KA89	L4	True	250.00	253.992581	101.6
6	KA90	L5	True	250.00	251.046463	100.4
7	KA91	L6	True	250.00	245.616386	98.3
8	KA92	L7	True	250.00	228.956311	91.6



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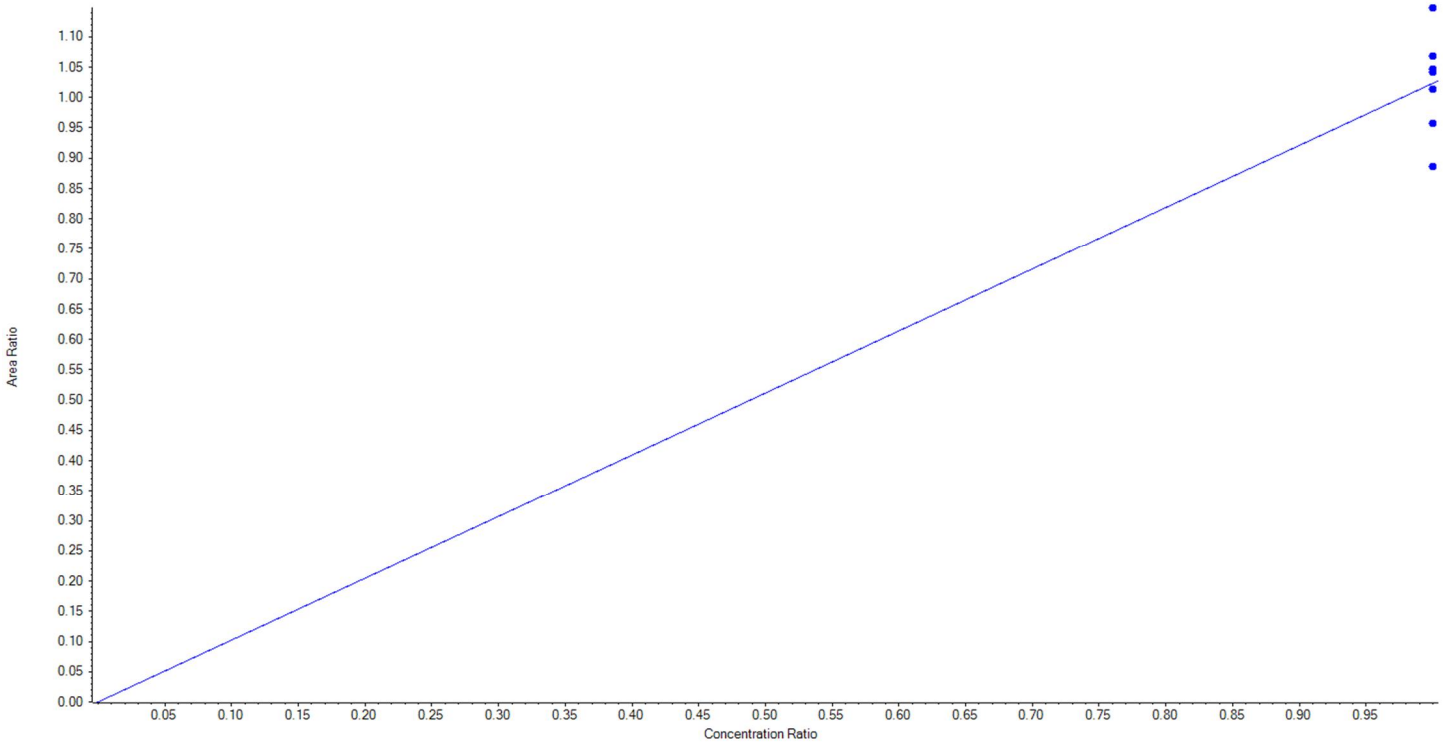
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C6-PFDA	**Data File**	09172018.wiff
MRM Transition	519.0 / 474.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.02343 x (std. dev. = 0.08321) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	247.777319	99.1
3	KA87	L2	True	250.00	261.125158	104.5
4	KA88	L3	True	250.00	233.826304	93.5
5	KA89	L4	True	250.00	280.316761	112.1
6	KA90	L5	True	250.00	254.616538	101.9
7	KA91	L6	True	250.00	255.736225	102.3
8	KA92	L7	True	250.00	216.601695	86.6



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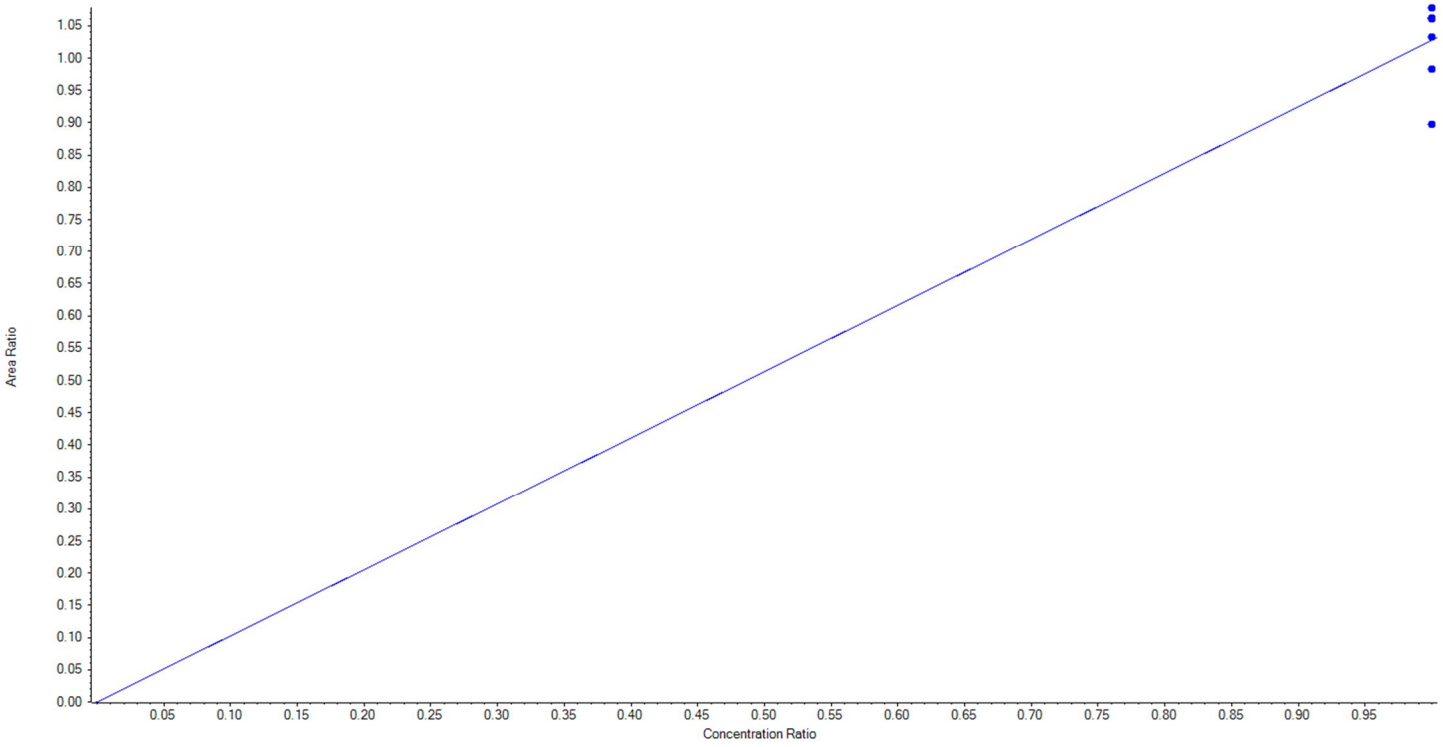
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C7-PFUnA	**Data File**	09172018.wiff
MRM Transition	570.0 / 525.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.02725 x (std. dev. = 0.06601) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	258.185111	103.3
3	KA87	L2	True	250.00	262.221787	104.9
4	KA88	L3	True	250.00	239.003232	95.6
5	KA89	L4	True	250.00	262.150729	104.9
6	KA90	L5	True	250.00	251.397262	100.6
7	KA91	L6	True	250.00	258.498069	103.4
8	KA92	L7	True	250.00	218.543809	87.4



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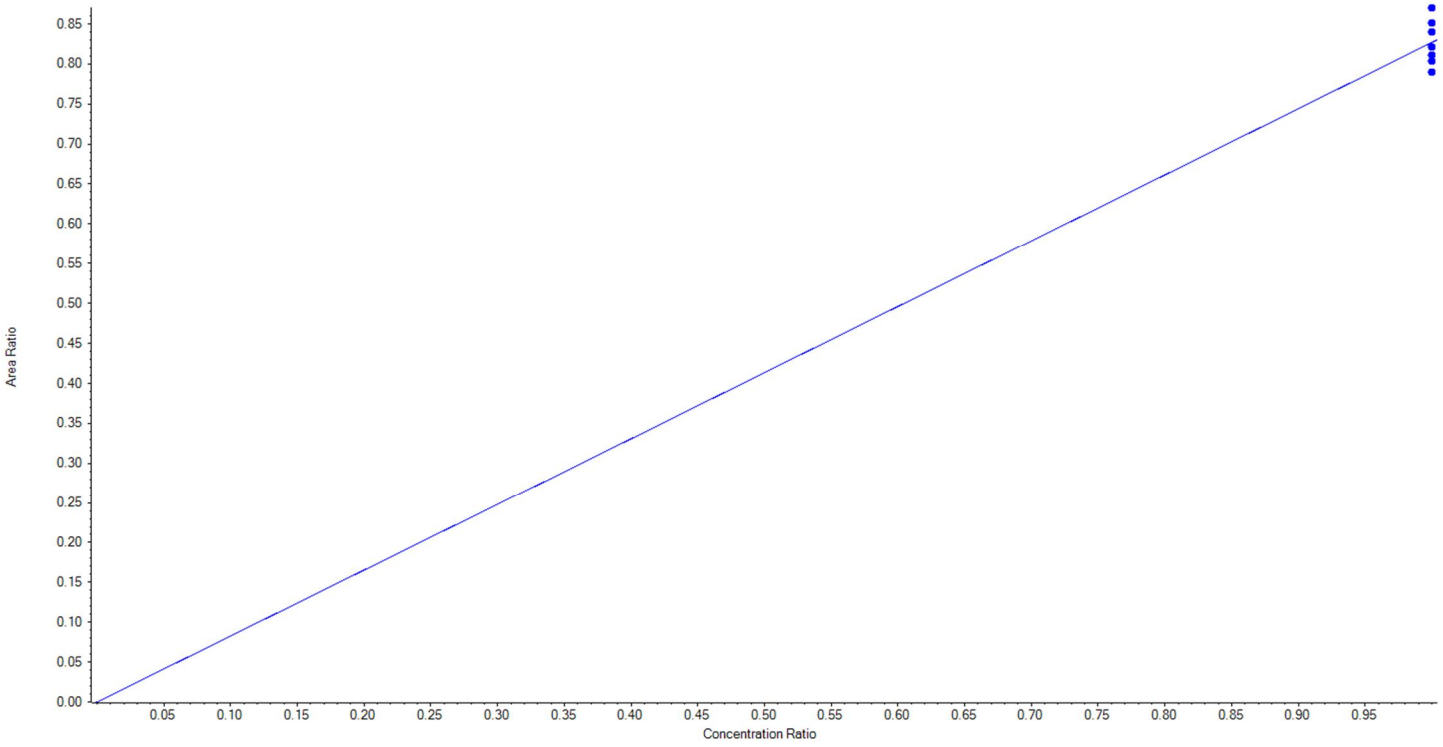
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C2-PFTeDA	**Data File**	09172018.wiff
MRM Transition	715.0 / 670.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.82679 x (std. dev. = 0.02827) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	248.382765	99.4
3	KA87	L2	True	250.00	263.062594	105.2
4	KA88	L3	True	250.00	243.100760	97.2
5	KA89	L4	True	250.00	253.842582	101.5
6	KA90	L5	True	250.00	238.899644	95.6
7	KA91	L6	True	250.00	257.517382	103.0
8	KA92	L7	True	250.00	245.194272	98.1



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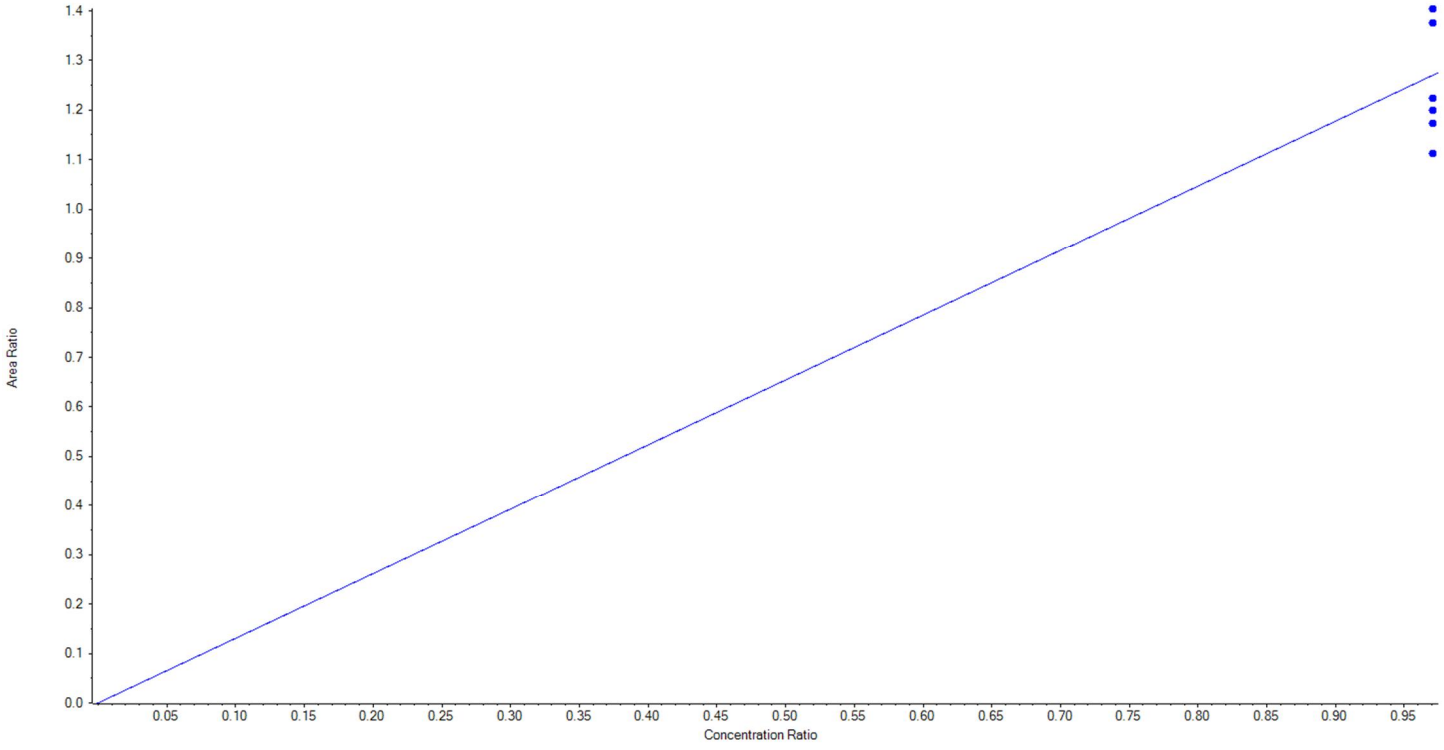
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C3-PFBS	**Data File**	09172018.wiff
MRM Transition	302.0 / 99.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.30856 x (std. dev. = 0.12475) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	232.25	251.432640	108.3
3	KA87	L2	True	232.25	256.671394	110.5
4	KA88	L3	True	232.25	203.536121	87.6
5	KA89	L4	True	232.25	256.647766	110.5
6	KA90	L5	True	232.25	223.775177	96.4
7	KA91	L6	True	232.25	214.520986	92.4
8	KA92	L7	True	232.25	219.165917	94.4



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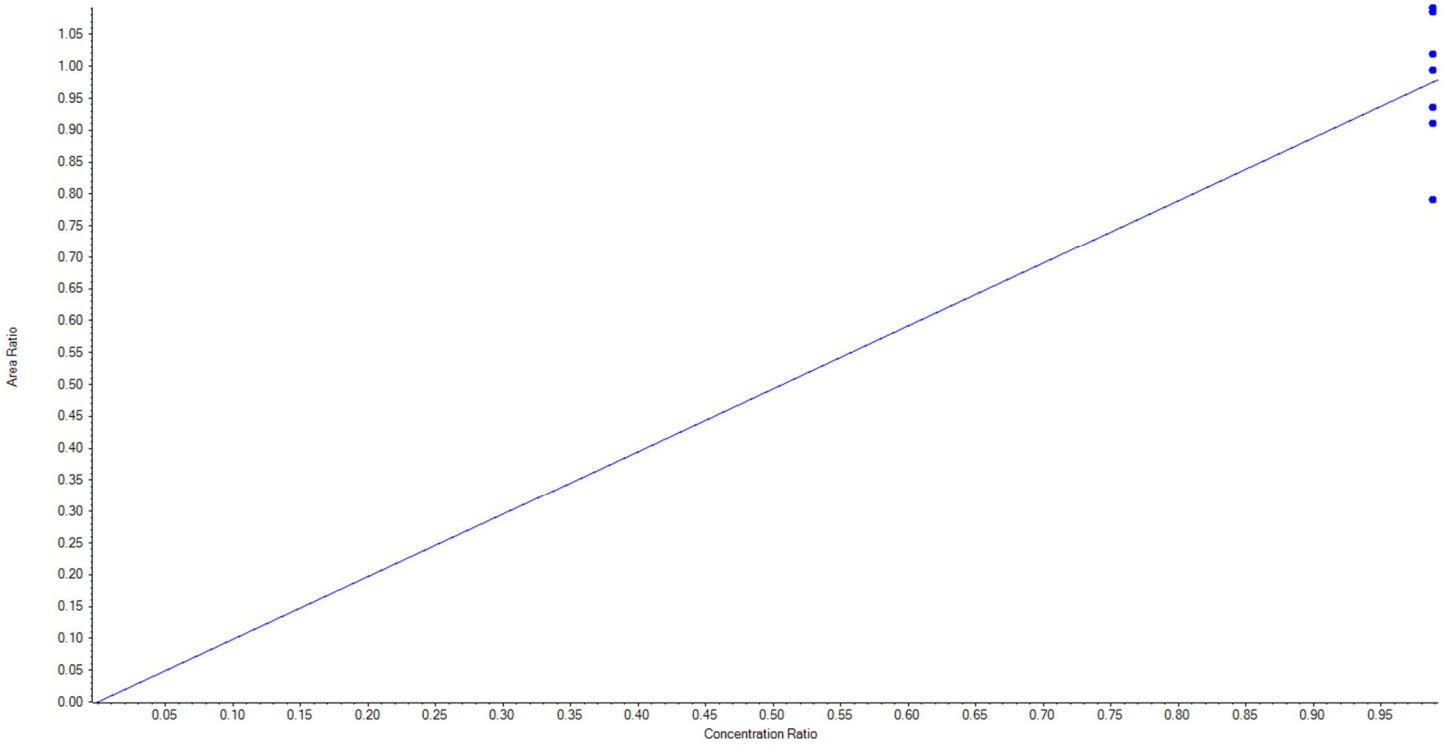
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C3-PFHxS	**Data File**	09172018.wiff
MRM Transition	402.0 / 99.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.98657 x (std. dev. = 0.10718) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	236.50	263.027392	111.2
3	KA87	L2	True	236.50	240.956459	101.9
4	KA88	L3	True	236.50	220.837181	93.4
5	KA89	L4	True	236.50	264.688242	111.9
6	KA90	L5	True	236.50	226.762154	95.9
7	KA91	L6	True	236.50	247.296909	104.6
8	KA92	L7	True	236.50	191.931664	81.2



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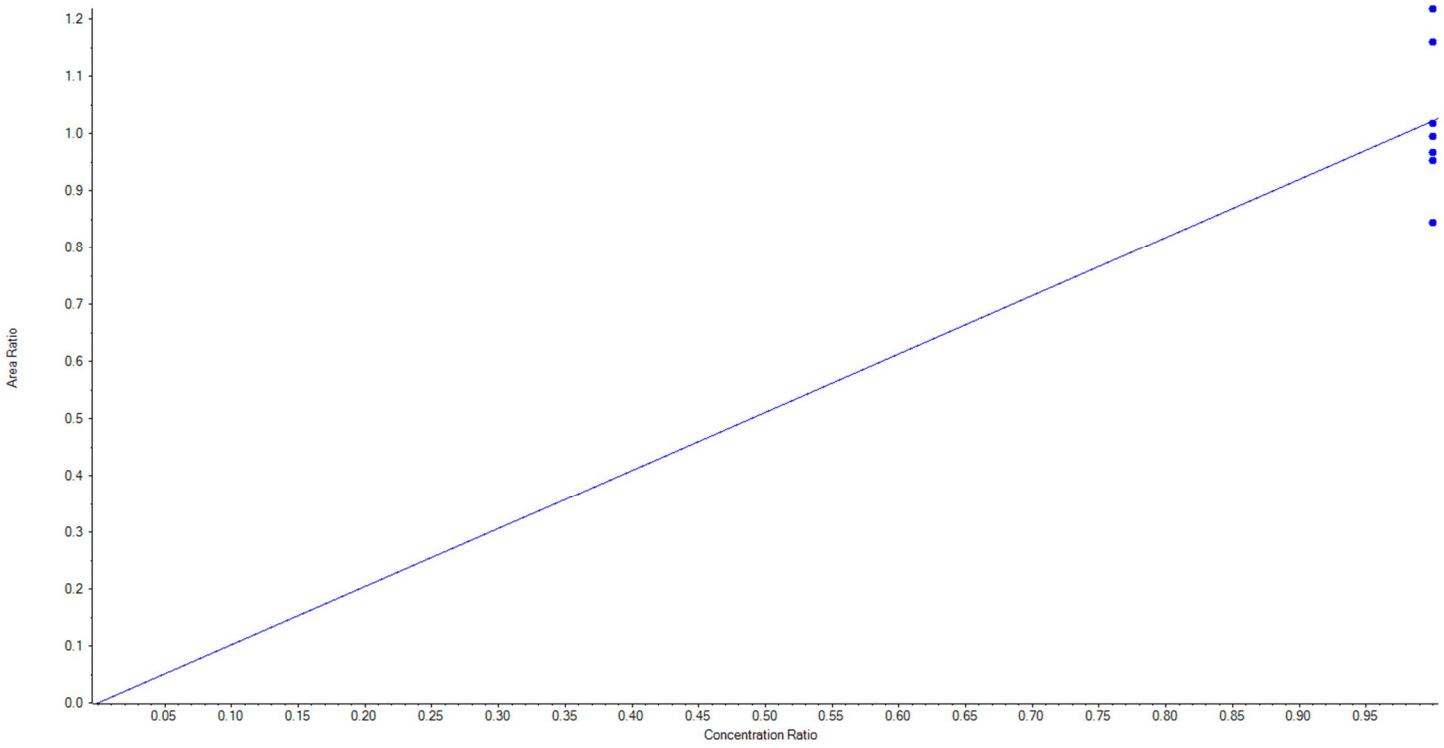
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C8-PFOS	**Data File**	09172018.wiff
MRM Transition	507.0 / 99.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.02196 x (std. dev. = 0.12752) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	239.25	271.446975	113.5
3	KA87	L2	True	239.25	233.090965	97.4
4	KA88	L3	True	239.25	222.951796	93.2
5	KA89	L4	True	239.25	285.097240	119.2
6	KA90	L5	True	239.25	238.217338	99.6
7	KA91	L6	True	239.25	226.394998	94.6
8	KA92	L7	True	239.25	197.550687	82.6



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	Isotope Dilution Calibration Curve Concentrations (ng/L)						
	KA86	KA87	KA88	KA89	KA90	KA91	KA92
PFBA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFPeA	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
PFHxA	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
PFHpA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFOA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFNA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFDA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFUnA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFDoA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFTrDA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFTeDA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
NMeFOSAA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
NEtFOSAA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFOSA	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFBS	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
PFPeS	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFHxS (Branched)	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
PFHpS	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFOS (Branched)	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
PFDS	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
PFNS	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
4:2FTS	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
6:2FTS	100.00	250.00	500.00	1,000.00	2,500.00	10,000.00	20,000.00
8:2FTS	101.00	252.50	505.00	1,010.00	2,525.00	10,100.00	20,200.00
	Surrogates / Extracted Internal Standards						
13C4-PFBA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C5-PFPeA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C5-PFHxA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C4-PFHpA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C8-PFOA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C9-PFNA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C6-PFDA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C7-PFUnA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C2-PFDoA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C2-PFTeDA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
d3-MeFOSAA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
d5-EtFOSAA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C8-FOSA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C3-PFBS	232.25	232.25	232.25	232.25	232.25	232.25	232.25
13C3-PFHxS	236.50	236.50	236.50	236.50	236.50	236.50	236.50
13C8-PFOS	239.25	239.25	239.25	239.25	239.25	239.25	239.25
13C2-4:2FTS	233.75	233.75	233.75	233.75	233.75	233.75	233.75
13C2-6:2FTS	237.25	237.25	237.25	237.25	237.25	237.25	237.25
13C2-8:2FTS	239.50	239.50	239.50	239.50	239.50	239.50	239.50
	Internal Standards						
13C3-PFBA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C2-PFOA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C2-PFDA	250.00	250.00	250.00	250.00	250.00	250.00	250.00
13C4-PFOS	239.25	239.25	239.25	239.25	239.25	239.25	239.25

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Summary Quant Report

Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	30433.79	107.210507	70.3	false
PFBS_2	298.9 / 99.0	1.53	10889.90	124.306355	58.6	false
PFHxA_1	313.0 / 269.0	1.85	28325.62	116.251169	11.1	false
PFHxA_2	313.0 / 119.0	1.85	1639.43	118.706895	6.1	true
PFHpA_1	363.0 / 319.0	2.25	24831.75	126.435711	23.4	false
PFHpA_2	363.0 / 169.0	2.27	556.38	117.894562	12.6	true
PFHxS_1	399.0 / 80.0	2.27	35664.78	125.028959	82.6	false
PFHxS_2	399.0 / 99.0	2.27	10318.58	115.879496	77.2	false
PFOA_1	413.0 / 369.0	2.65	30284.54	120.628781	35.7	false
PFOA_2	413.0 / 169.0	2.64	2213.63	128.340625	21.8	true
PFNA_1	463.0 / 419.0	3.04	25851.93	126.420004	39.7	false
PFNA_2	463.0 / 219.0	3.04	7964.59	125.402344	39.1	true
PFOS_1	499.0 / 80.0	3.03	36631.62	119.339962	51.8	false
PFOS_2	499.0 / 99.0	3.03	9194.75	125.505534	78.8	false
PFDA_1	513.0 / 469.0	3.39	30246.73	123.381231	68.2	false
PFDA_2	513.0 / 219.0	3.39	2670.19	120.626037	44.9	true
PFUnA_1	563.0 / 519.0	3.70	26012.61	112.077862	73.5	true
PFUnA_2	563.0 / 269.0	3.70	2190.27	79.576176	32.9	true
PFDoA_1	613.0 / 569.0	3.99	26405.65	88.128553	110.3	false
PFDoA_2	613.0 / 319.0	3.98	3798.69	7.034440	80.4	false
PFTrDA_1	663.0 / 619.0	4.23	25663.45	99.790493	173.8	false
PFTrDA_2	663.0 / 169.0	4.23	2018.20	116.473665	81.8	false
PFTeDA_1	713.0 / 669.0	4.45	25786.98	100.402544	246.2	false
PFTeDA_2	713.0 / 169.0	4.45	1578.47	116.090955	122.1	false
NMeFOSAA_1	570.0 / 419.0	3.54	1893.54	6.793695	39.9	false
NMeFOSAA_2	570.0 / 512.0	3.53	1207.25	< 0	34.6	false
NEtFOSAA_1	584.0 / 419.0	3.70	3231.46	126.817690	88.0	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true

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Summary Quant Report

Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	80036.78	256.792877	126.8	false
PFBS_2	298.9 / 99.0	1.53	22397.24	242.352302	106.5	false
PFHxA_1	313.0 / 269.0	1.84	58433.22	288.265557	18.9	false
PFHxA_2	313.0 / 119.0	1.85	4218.64	315.063029	12.9	true
PFHpA_1	363.0 / 319.0	2.25	51724.25	247.462947	37.3	false
PFHpA_2	363.0 / 169.0	2.25	1211.00	272.310493	22.0	false
PFHxS_1	399.0 / 80.0	2.27	78962.83	277.132033	142.6	false
PFHxS_2	399.0 / 99.0	2.27	25092.52	298.762264	138.4	false
PFOA_1	413.0 / 369.0	2.65	72197.75	267.473813	68.4	false
PFOA_2	413.0 / 169.0	2.64	4875.51	274.279064	44.6	false
PFNA_1	463.0 / 419.0	3.03	55665.08	251.786479	63.2	false
PFNA_2	463.0 / 219.0	3.03	18747.98	271.570220	64.6	false
PFOS_1	499.0 / 80.0	3.03	95647.40	281.982603	64.0	false
PFOS_2	499.0 / 99.0	3.03	19239.69	288.650412	106.3	false
PFDA_1	513.0 / 469.0	3.38	55701.04	229.784275	94.2	false
PFDA_2	513.0 / 219.0	3.38	3211.13	179.629735	51.9	false
PFUnA_1	563.0 / 519.0	3.70	65142.97	269.635011	121.7	false
PFUnA_2	563.0 / 269.0	3.69	4031.24	232.688592	75.8	false
PFDoA_1	613.0 / 569.0	3.98	61305.60	273.764190	153.3	false
PFDoA_2	613.0 / 319.0	3.98	10542.54	239.702506	133.9	false
PFTrDA_1	663.0 / 619.0	4.23	56067.77	250.094800	201.0	false
PFTrDA_2	663.0 / 169.0	4.22	3105.35	203.820813	100.0	false
PFTeDA_1	713.0 / 669.0	4.44	57280.35	246.214443	377.6	false
PFTeDA_2	713.0 / 169.0	4.44	2673.80	225.543930	195.1	false
NMeFOSAA_1	570.0 / 419.0	3.54	8911.51	239.301241	134.3	false
NMeFOSAA_2	570.0 / 512.0	3.54	4928.72	222.372754	105.3	false
NEtFOSAA_1	584.0 / 419.0	3.69	7819.45	251.047435	157.8	false
NEtFOSAA_2	584.0 / 483.0	3.70	542.03	227.466765	23.5	false

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Summary Quant Report

Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	122100.12	522.951445	187.2	false
PFBS_2	298.9 / 99.0	1.54	33048.37	480.256328	146.3	false
PFHxA_1	313.0 / 269.0	1.85	86513.55	469.463253	24.8	false
PFHxA_2	313.0 / 119.0	1.85	5402.75	436.406684	16.4	true
PFHpA_1	363.0 / 319.0	2.25	75839.93	494.594695	45.8	false
PFHpA_2	363.0 / 169.0	2.23	1472.13	476.146385	25.5	false
PFHxS_1	399.0 / 80.0	2.27	110952.16	449.866974	115.0	false
PFHxS_2	399.0 / 99.0	2.27	32253.07	452.963101	151.7	false
PFOA_1	413.0 / 369.0	2.65	89575.78	457.308715	71.8	false
PFOA_2	413.0 / 169.0	2.65	5629.39	442.322655	56.7	false
PFNA_1	463.0 / 419.0	3.03	80487.05	440.018950	78.3	false
PFNA_2	463.0 / 219.0	3.03	24116.33	426.763431	67.8	false
PFOS_1	499.0 / 80.0	3.03	141399.15	462.945369	87.4	false
PFOS_2	499.0 / 99.0	3.03	23147.38	405.249707	120.8	false
PFDA_1	513.0 / 469.0	3.38	89429.90	489.210038	128.6	false
PFDA_2	513.0 / 219.0	3.38	5607.97	584.610035	98.9	false
PFUnA_1	563.0 / 519.0	3.70	87588.04	464.306485	122.1	false
PFUnA_2	563.0 / 269.0	3.70	7279.76	662.089510	78.4	false
PFDoA_1	613.0 / 569.0	3.98	88057.10	492.124770	184.4	false
PFDoA_2	613.0 / 319.0	3.98	14516.25	464.229195	137.6	false
PFTrDA_1	663.0 / 619.0	4.22	77550.41	467.113857	225.8	false
PFTrDA_2	663.0 / 169.0	4.22	4705.58	434.539421	149.4	false
PFTeDA_1	713.0 / 669.0	4.44	79763.03	457.165546	354.4	false
PFTeDA_2	713.0 / 169.0	4.44	3655.37	425.923534	227.2	false
NMeFOSAA_1	570.0 / 419.0	3.54	10456.33	393.377176	181.8	false
NMeFOSAA_2	570.0 / 512.0	3.54	7212.90	489.969333	149.2	false
NEtFOSAA_1	584.0 / 419.0	3.70	11789.11	422.904833	226.8	false
NEtFOSAA_2	584.0 / 483.0	3.68	755.90	388.255864	25.9	true

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Summary Quant Report

Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	256426.55	961.467448	254.2	false
PFBS_2	298.9 / 99.0	1.54	74377.82	947.233424	213.8	false
PFHxA_1	313.0 / 269.0	1.85	183746.32	946.375417	43.8	false
PFHxA_2	313.0 / 119.0	1.84	11814.73	880.568908	27.4	false
PFHpA_1	363.0 / 319.0	2.25	164134.32	908.164781	71.2	false
PFHpA_2	363.0 / 169.0	2.25	3105.75	874.726007	39.2	false
PFHxS_1	399.0 / 80.0	2.27	248424.30	917.601880	168.2	false
PFHxS_2	399.0 / 99.0	2.27	68625.28	891.385065	319.6	false
PFOA_1	413.0 / 369.0	2.64	223432.34	964.357849	128.7	false
PFOA_2	413.0 / 169.0	2.65	13076.07	876.025066	103.5	false
PFNA_1	463.0 / 419.0	3.03	187605.62	935.526977	146.4	false
PFNA_2	463.0 / 219.0	3.03	53835.92	869.989302	127.0	false
PFOS_1	499.0 / 80.0	3.03	324724.68	882.307346	121.5	false
PFOS_2	499.0 / 99.0	3.03	59543.41	892.164074	207.5	false
PFDA_1	513.0 / 469.0	3.38	193138.77	877.127184	231.7	false
PFDA_2	513.0 / 219.0	3.38	9584.33	885.454676	94.8	false
PFUnA_1	563.0 / 519.0	3.69	200113.84	947.368226	173.6	false
PFUnA_2	563.0 / 269.0	3.69	11431.19	981.865681	118.2	false
PFDoA_1	613.0 / 569.0	3.98	191283.60	1073.842486	202.1	false
PFDoA_2	613.0 / 319.0	3.98	31220.89	1088.014716	195.2	false
PFTrDA_1	663.0 / 619.0	4.22	173010.94	1021.949549	321.9	false
PFTrDA_2	663.0 / 169.0	4.22	11633.14	1074.636675	197.0	false
PFTeDA_1	713.0 / 669.0	4.43	187074.61	1043.554804	557.3	false
PFTeDA_2	713.0 / 169.0	4.43	9019.71	1049.410678	352.7	false
NMeFOSAA_1	570.0 / 419.0	3.53	27988.61	1183.519250	259.9	false
NMeFOSAA_2	570.0 / 512.0	3.53	14037.32	1065.570036	181.0	false
NEtFOSAA_1	584.0 / 419.0	3.69	25976.48	891.010106	413.7	false
NEtFOSAA_2	584.0 / 483.0	3.69	2432.72	1285.149703	80.0	true

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Summary Quant Report

Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	781637.86	2251.753492	525.6	false
PFBS_2	298.9 / 99.0	1.53	226274.35	2218.136856	344.2	false
PFHxA_1	313.0 / 269.0	1.84	576101.13	2171.771994	84.8	false
PFHxA_2	313.0 / 119.0	1.84	38877.74	2088.102209	52.6	false
PFHpA_1	363.0 / 319.0	2.24	500780.64	2128.310132	125.8	false
PFHpA_2	363.0 / 169.0	2.24	9808.57	2160.243680	106.0	false
PFHxS_1	399.0 / 80.0	2.26	792286.99	2277.653301	272.1	false
PFHxS_2	399.0 / 99.0	2.27	226910.32	2312.226195	376.6	false
PFOA_1	413.0 / 369.0	2.64	641309.31	2129.724084	323.9	false
PFOA_2	413.0 / 169.0	2.64	42532.66	2197.982787	253.7	false
PFNA_1	463.0 / 419.0	3.03	568073.20	2333.848398	311.6	false
PFNA_2	463.0 / 219.0	3.03	180738.74	2402.105144	306.6	false
PFOS_1	499.0 / 80.0	3.03	1013430.18	2184.290401	163.5	false
PFOS_2	499.0 / 99.0	3.03	182083.92	2209.859495	379.0	false
PFDA_1	513.0 / 469.0	3.38	631831.34	2446.700602	343.2	false
PFDA_2	513.0 / 219.0	3.37	29330.22	2516.263417	178.1	false
PFUnA_1	563.0 / 519.0	3.69	608418.16	2308.798801	313.0	false
PFUnA_2	563.0 / 269.0	3.69	34003.60	2478.234771	213.0	false
PFDoA_1	613.0 / 569.0	3.98	558145.97	2369.692338	371.5	false
PFDoA_2	613.0 / 319.0	3.98	93471.62	2557.504369	380.3	false
PFTrDA_1	663.0 / 619.0	4.22	526335.00	2600.667405	503.1	false
PFTrDA_2	663.0 / 169.0	4.22	33911.64	2635.720549	386.6	false
PFTeDA_1	713.0 / 669.0	4.43	559599.91	2599.020799	910.7	false
PFTeDA_2	713.0 / 169.0	4.43	26038.49	2546.869712	559.6	false
NMeFOSAA_1	570.0 / 419.0	3.53	80772.03	2763.804001	358.5	false
NMeFOSAA_2	570.0 / 512.0	3.53	43692.26	2725.971649	457.9	false
NEtFOSAA_1	584.0 / 419.0	3.69	79884.62	2501.814267	519.1	false
NEtFOSAA_2	584.0 / 483.0	3.69	5288.67	2635.702419	144.2	false

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Summary Quant Report

Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	2741231.62	10619.448743	908.6	false
PFBS_2	298.9 / 99.0	1.53	798053.54	10531.345026	784.0	false
PFHxA_1	313.0 / 269.0	1.84	1910610.65	9261.678272	193.9	false
PFHxA_2	313.0 / 119.0	1.84	142788.69	9776.953274	110.3	false
PFHpA_1	363.0 / 319.0	2.24	1659477.11	9497.225875	287.0	false
PFHpA_2	363.0 / 169.0	2.24	34600.06	10365.244292	281.6	false
PFHxS_1	399.0 / 80.0	2.27	2642599.67	8965.996617	511.7	false
PFHxS_2	399.0 / 99.0	2.26	762646.36	9209.878255	692.5	false
PFOA_1	413.0 / 369.0	2.64	2112205.52	9448.533833	712.9	false
PFOA_2	413.0 / 169.0	2.64	131254.54	9161.230341	340.3	false
PFNA_1	463.0 / 419.0	3.03	1929546.89	9328.596873	618.5	false
PFNA_2	463.0 / 219.0	3.03	591276.12	9252.579507	631.7	false
PFOS_1	499.0 / 80.0	3.02	3416181.89	9515.980092	255.5	false
PFOS_2	499.0 / 99.0	3.03	608462.26	9646.143779	602.1	false
PFDA_1	513.0 / 469.0	3.38	2062178.40	10072.665193	547.4	false
PFDA_2	513.0 / 219.0	3.38	90993.73	10217.395513	331.0	false
PFUnA_1	563.0 / 519.0	3.69	2100109.09	9775.798827	524.5	false
PFUnA_2	563.0 / 269.0	3.69	104398.06	9607.359880	376.0	false
PFDoA_1	613.0 / 569.0	3.98	2017197.92	10301.327343	596.1	false
PFDoA_2	613.0 / 319.0	3.98	301606.09	10133.753203	639.4	false
PFTrDA_1	663.0 / 619.0	4.22	1742144.30	10195.049043	806.9	false
PFTrDA_2	663.0 / 169.0	4.22	114261.94	10554.718378	629.9	false
PFTeDA_1	713.0 / 669.0	4.43	1889051.79	10368.809522	1367.0	false
PFTeDA_2	713.0 / 169.0	4.43	89070.66	10352.020695	995.1	false
NMeFOSAA_1	570.0 / 419.0	3.53	247578.52	9669.998332	764.6	false
NMeFOSAA_2	570.0 / 512.0	3.53	136052.21	9746.116228	714.0	false
NEtFOSAA_1	584.0 / 419.0	3.69	266611.51	9645.351972	1023.7	false
NEtFOSAA_2	584.0 / 483.0	3.69	16722.59	9770.385587	366.0	false

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Summary Quant Report

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	5979889.42	19973.375488	1299.5	false
PFBS_2	298.9 / 99.0	1.54	1770730.89	20149.369708	1038.4	false
PFHxA_1	313.0 / 269.0	1.85	4297269.33	21439.194338	339.1	false
PFHxA_2	313.0 / 119.0	1.85	299432.36	21077.199002	178.0	false
PFHpA_1	363.0 / 319.0	2.25	3558418.99	20947.805860	397.0	false
PFHpA_2	363.0 / 169.0	2.25	65077.69	20083.434581	274.1	false
PFHxS_1	399.0 / 80.0	2.27	5633915.67	21679.720237	566.5	false
PFHxS_2	399.0 / 99.0	2.27	1562005.88	21411.905624	1171.6	false
PFOA_1	413.0 / 369.0	2.64	4555463.20	20961.972925	900.9	false
PFOA_2	413.0 / 169.0	2.64	296143.52	21269.819462	499.4	false
PFNA_1	463.0 / 419.0	3.03	4129080.41	20933.802318	866.5	false
PFNA_2	463.0 / 219.0	3.03	1279786.15	21001.590051	704.0	false
PFOS_1	499.0 / 80.0	3.03	7419762.70	20903.154227	336.5	true
PFOS_2	499.0 / 99.0	3.03	1293954.17	20782.426999	652.7	true
PFDA_1	513.0 / 469.0	3.38	4171596.24	20111.131477	638.1	false
PFDA_2	513.0 / 219.0	3.38	178005.44	19846.020588	448.0	false
PFUnA_1	563.0 / 519.0	3.70	4450980.60	20472.014787	672.0	false
PFUnA_2	563.0 / 269.0	3.70	222176.84	20308.185390	435.3	false
PFDoA_1	613.0 / 569.0	3.98	4378438.72	19751.120321	725.3	false
PFDoA_2	613.0 / 319.0	3.98	663576.64	19766.796011	649.3	false
PFTrDA_1	663.0 / 619.0	4.22	3832386.63	19715.334854	999.6	false
PFTrDA_2	663.0 / 169.0	4.22	237938.70	19330.090498	734.8	false
PFTeDA_1	713.0 / 669.0	4.43	4050075.84	19534.832341	1513.4	false
PFTeDA_2	713.0 / 169.0	4.43	192087.71	19634.140495	1260.8	false
NMeFOSAA_1	570.0 / 419.0	3.53	565390.49	19238.393743	970.5	false
NMeFOSAA_2	570.0 / 512.0	3.53	301761.54	18850.385028	612.1	false
NEtFOSAA_1	584.0 / 419.0	3.69	561882.77	20511.053697	1134.1	false
NEtFOSAA_2	584.0 / 483.0	3.69	33735.78	19943.039662	449.3	false

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Summary Quant Report

Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.98	64876.60	249.086588	735.1	false
d3-MeFOSAA	573.0 / 419.0	3.53	9638.99	300.400671	127.9	false
d5-EtFOSAA	589.0 / 419.0	3.69	8962.71	275.037347	115.0	false
13C5-PFHxA	318.0 / 273.0	1.83	61076.03	258.596536	494.6	false
13C4-PFHpA	367.0 / 322.0	2.24	64407.50	248.258573	436.6	false
13C8-PFOA	421.0 / 376.0	2.64	67536.40	245.870251	1608.1	false
13C9-PFNA	472.0 / 427.0	3.02	63629.25	241.798020	567.4	false
13C6-PFDA	519.0 / 474.0	3.37	63509.47	247.777319	554.6	false
13C7-PFUnA	570.0 / 525.0	3.69	66423.92	258.185111	372.3	false
13C2-PFTeDA	715.0 / 670.0	4.44	51431.88	248.382765	1204.3	false
13C3-PFBS	302.0 / 99.0	1.52	27492.51	251.432640	365.8	false
13C3-PFHxS	402.0 / 99.0	2.26	21683.39	263.027392	235.0	false
13C8-PFOS	507.0 / 99.0	3.02	23180.29	271.446975	168.7	false

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Summary Quant Report

Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.97	56996.85	238.645940	665.1	false
d3-MeFOSAA	573.0 / 419.0	3.53	8669.35	274.452400	133.3	false
d5-EtFOSAA	589.0 / 419.0	3.69	9123.25	284.389280	101.4	false
13C5-PFHxA	318.0 / 273.0	1.83	47944.77	224.229706	367.4	false
13C4-PFHpA	367.0 / 322.0	2.23	58524.53	249.175721	435.9	false
13C8-PFOA	421.0 / 376.0	2.63	66448.08	267.208605	797.4	false
13C9-PFNA	472.0 / 427.0	3.02	61506.22	258.175435	893.3	false
13C6-PFDA	519.0 / 474.0	3.37	61374.04	261.125158	613.5	false
13C7-PFUnA	570.0 / 525.0	3.69	61861.61	262.221787	275.2	false
13C2-PFTeDA	715.0 / 670.0	4.44	49949.27	263.062594	931.8	false
13C3-PFBS	302.0 / 99.0	1.52	27628.61	256.671394	301.1	false
13C3-PFHxS	402.0 / 99.0	2.26	19554.82	240.956459	237.6	false
13C8-PFOS	507.0 / 99.0	3.02	19595.14	233.090965	160.8	false

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Summary Quant Report

Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.97	47290.64	238.394426	679.3	false
d3-MeFOSAA	573.0 / 419.0	3.53	6622.39	228.785668	101.2	false
d5-EtFOSAA	589.0 / 419.0	3.69	7635.42	259.734770	109.8	false
13C5-PFHxA	318.0 / 273.0	1.84	42954.97	265.935039	432.6	false
13C4-PFHpA	367.0 / 322.0	2.24	50282.84	283.398669	593.2	false
13C8-PFOA	421.0 / 376.0	2.64	47091.18	250.678923	2146.0	false
13C9-PFNA	472.0 / 427.0	3.02	48665.85	270.414804	696.2	false
13C6-PFDA	519.0 / 474.0	3.37	45646.94	233.826304	796.8	false
13C7-PFUnA	570.0 / 525.0	3.69	46831.54	239.003232	298.7	false
13C2-PFTeDA	715.0 / 670.0	4.43	38338.81	243.100760	1288.3	false
13C3-PFBS	302.0 / 99.0	1.52	20076.58	203.536121	282.8	false
13C3-PFHxS	402.0 / 99.0	2.26	16423.06	220.837181	188.2	false
13C8-PFOS	507.0 / 99.0	3.02	17175.14	222.951796	154.5	false

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Summary Quant Report

Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.97	48338.75	243.830078	633.8	false
d3-MeFOSAA	573.0 / 419.0	3.52	6354.37	245.527562	95.9	false
d5-EtFOSAA	589.0 / 419.0	3.68	7606.55	289.399919	110.0	false
13C5-PFHxA	318.0 / 273.0	1.84	44736.99	244.637046	467.0	false
13C4-PFHpA	367.0 / 322.0	2.23	48716.23	242.518576	525.8	false
13C8-PFOA	421.0 / 376.0	2.63	54152.67	254.619374	707.7	false
13C9-PFNA	472.0 / 427.0	3.02	51751.34	253.992581	595.1	false
13C6-PFDA	519.0 / 474.0	3.37	54688.56	280.316761	453.5	false
13C7-PFUnA	570.0 / 525.0	3.68	51335.16	262.150729	286.8	false
13C2-PFTeDA	715.0 / 670.0	4.43	40007.91	253.842582	931.7	false
13C3-PFBS	302.0 / 99.0	1.52	22634.57	256.647766	330.4	false
13C3-PFHxS	402.0 / 99.0	2.26	17599.61	264.688242	222.3	false
13C8-PFOS	507.0 / 99.0	3.01	19636.72	285.097240	147.4	false

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Summary Quant Report

Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.97	64718.10	253.934265	693.6	false
d3-MeFOSAA	573.0 / 419.0	3.52	8032.23	209.762632	96.4	false
d5-EtFOSAA	589.0 / 419.0	3.68	8107.33	208.474609	111.3	false
13C5-PFHxA	318.0 / 273.0	1.83	60734.16	274.765057	399.7	false
13C4-PFHpA	367.0 / 322.0	2.23	59732.77	246.012403	456.9	false
13C8-PFOA	421.0 / 376.0	2.63	69640.99	270.900302	865.6	false
13C9-PFNA	472.0 / 427.0	3.02	61827.50	251.046463	747.0	false
13C6-PFDA	519.0 / 474.0	3.36	63860.20	254.616538	451.2	false
13C7-PFUnA	570.0 / 525.0	3.68	63287.89	251.397262	405.9	false
13C2-PFTeDA	715.0 / 670.0	4.43	48405.33	238.899644	1091.3	false
13C3-PFBS	302.0 / 99.0	1.52	29199.94	223.775177	388.3	false
13C3-PFHxS	402.0 / 99.0	2.25	22308.70	226.762154	176.6	false
13C8-PFOS	507.0 / 99.0	3.01	24276.42	238.217338	149.2	false

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Summary Quant Report

Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	54239.26	270.113460	667.6	false
d3-MeFOSAA	573.0 / 419.0	3.52	7123.79	241.071066	76.6	false
d5-EtFOSAA	589.0 / 419.0	3.68	6941.92	231.311069	90.3	false
13C5-PFHxA	318.0 / 273.0	1.83	47055.00	247.025554	357.7	false
13C4-PFHpA	367.0 / 322.0	2.23	51357.92	245.447951	343.8	false
13C8-PFOA	421.0 / 376.0	2.63	52304.15	236.095879	764.3	false
13C9-PFNA	472.0 / 427.0	3.01	52128.74	245.616386	614.0	false
13C6-PFDA	519.0 / 474.0	3.37	50535.78	255.736225	615.0	false
13C7-PFUnA	570.0 / 525.0	3.68	51272.02	258.498069	443.2	false
13C2-PFTeDA	715.0 / 670.0	4.43	41109.98	257.517382	952.0	false
13C3-PFBS	302.0 / 99.0	1.52	21602.21	214.520986	319.9	false
13C3-PFHxS	402.0 / 99.0	2.25	18775.03	247.296909	219.8	false
13C8-PFOS	507.0 / 99.0	3.01	17804.77	226.394998	150.9	false

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Summary Quant Report

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.97	61473.35	255.995243	875.3	false
d3-MeFOSAA	573.0 / 419.0	3.52	8197.39	244.509991	70.1	false
d5-EtFOSAA	589.0 / 419.0	3.68	6865.95	201.653006	59.7	false
13C5-PFHxA	318.0 / 273.0	1.84	45690.43	234.811063	448.5	false
13C4-PFHpA	367.0 / 322.0	2.23	50269.68	235.188108	432.7	false
13C8-PFOA	421.0 / 376.0	2.63	50833.72	224.626665	841.0	false
13C9-PFNA	472.0 / 427.0	3.02	49638.12	228.956311	488.3	false
13C6-PFDA	519.0 / 474.0	3.37	51186.57	216.601695	865.3	false
13C7-PFUnA	570.0 / 525.0	3.68	51838.11	218.543809	398.2	false
13C2-PFTeDA	715.0 / 670.0	4.43	46809.99	245.194272	1127.0	false
13C3-PFBS	302.0 / 99.0	1.52	25038.84	219.165917	421.8	false
13C3-PFHxS	402.0 / 99.0	2.26	16531.85	191.931664	220.2	false
13C8-PFOS	507.0 / 99.0	3.02	17626.29	197.550687	122.4	false

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Summary Ion Ratio Report

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Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.360	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.060	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.27	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.65	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.04	PFNA			
PFNA_2	463.0 / 219.0	3.04	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.250	0.190	ü
PFDA_1	513.0 / 469.0	3.39	PFDA			
PFDA_2	513.0 / 219.0	3.39	PFDA	0.090	0.056	
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.080	0.063	ü
PFDoA_1	613.0 / 569.0	3.99	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.140	0.161	ü
PFTrDA_1	663.0 / 619.0	4.23	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.23	PFTrDA	0.080	0.065	ü
PFTeDA_1	713.0 / 669.0	4.45	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.45	PFTeDA	0.060	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.54	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.640	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.70	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	

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Summary Ion Ratio Report

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Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.280	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.320	0.290	ü
PFOA_1	413.0 / 369.0	2.65	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.340	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.200	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.060	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.170	0.161	ü
PFTrDA_1	663.0 / 619.0	4.23	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.54	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	NMeFOSAA	0.550	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.70	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.270	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.060	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.65	PFOA			
PFOA_2	413.0 / 169.0	2.65	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.300	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.160	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.060	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.080	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.54	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	NMeFOSAA	0.690	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.70	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.060	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.060	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.65	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.290	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.500	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.090	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.320	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.170	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.540	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.040	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.150	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.550	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.060	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.300	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.170	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.040	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.150	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.530	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.060	0.069	ü

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Summary Internal Standard Report

Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	27492.51	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	27492.51	232.25
PFHxA_1	313.0 / 269.0	1.85	13C5-PFHxA	318.0 / 273.0	61076.03	250.00
PFHxA_2	313.0 / 119.0	1.85	13C5-PFHxA	318.0 / 273.0	61076.03	250.00
PFHpA_1	363.0 / 319.0	2.25	13C8-PFOA	421.0 / 376.0	68521.51	250.00
PFHpA_2	363.0 / 169.0	2.27	13C8-PFOA	421.0 / 376.0	68521.51	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	21683.39	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	21683.39	236.50
PFOA_1	413.0 / 369.0	2.65	13C8-PFOA	421.0 / 376.0	68521.51	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	68521.51	250.00
PFNA_1	463.0 / 419.0	3.04	13C9-PFNA	472.0 / 427.0	63629.25	250.00
PFNA_2	463.0 / 219.0	3.04	13C9-PFNA	472.0 / 427.0	63629.25	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	22979.07	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	22979.07	239.25
PFDA_1	513.0 / 469.0	3.39	13C6-PFDA	519.0 / 474.0	63509.47	250.00
PFDA_2	513.0 / 219.0	3.39	13C6-PFDA	519.0 / 474.0	63509.47	250.00
PFUnA_1	563.0 / 519.0	3.70	13C7-PFUnA	570.0 / 525.0	66423.92	250.00
PFUnA_2	563.0 / 269.0	3.70	13C7-PFUnA	570.0 / 525.0	66423.92	250.00
PFDoA_1	613.0 / 569.0	3.99	13C2-PFDoA	615.0 / 570.0	64876.60	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	64876.60	250.00
PFTrDA_1	663.0 / 619.0	4.23	13C2-PFTeDA	715.0 / 670.0	51431.88	250.00
PFTrDA_2	663.0 / 169.0	4.23	13C2-PFTeDA	715.0 / 670.0	51431.88	250.00
PFTeDA_1	713.0 / 669.0	4.45	13C2-PFTeDA	715.0 / 670.0	51431.88	250.00
PFTeDA_2	713.0 / 169.0	4.45	13C2-PFTeDA	715.0 / 670.0	51431.88	250.00
NMeFOSAA_1	570.0 / 419.0	3.54	d3-MeFOSAA	573.0 / 419.0	9638.99	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	9638.99	250.00
NEtFOSAA_1	584.0 / 419.0	3.70	d5-EtFOSAA	589.0 / 419.0	8962.71	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	8962.71	250.00

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Summary Internal Standard Report

Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	27628.61	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	27628.61	232.25
PFHxA_1	313.0 / 269.0	1.84	13C5-PFHxA	318.0 / 273.0	47944.77	250.00
PFHxA_2	313.0 / 119.0	1.85	13C5-PFHxA	318.0 / 273.0	47944.77	250.00
PFHpA_1	363.0 / 319.0	2.25	13C8-PFOA	421.0 / 376.0	67100.36	250.00
PFHpA_2	363.0 / 169.0	2.25	13C8-PFOA	421.0 / 376.0	67100.36	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	19554.82	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	19554.82	236.50
PFOA_1	413.0 / 369.0	2.65	13C8-PFOA	421.0 / 376.0	67100.36	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	67100.36	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	61506.22	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	61506.22	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	20280.50	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	20280.50	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	61374.04	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	61374.04	250.00
PFUnA_1	563.0 / 519.0	3.70	13C7-PFUnA	570.0 / 525.0	61861.61	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	61861.61	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	56996.85	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	56996.85	250.00
PFTrDA_1	663.0 / 619.0	4.23	13C2-PFTeDA	715.0 / 670.0	49949.27	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	49949.27	250.00
PFTeDA_1	713.0 / 669.0	4.44	13C2-PFTeDA	715.0 / 670.0	49949.27	250.00
PFTeDA_2	713.0 / 169.0	4.44	13C2-PFTeDA	715.0 / 670.0	49949.27	250.00
NMeFOSAA_1	570.0 / 419.0	3.54	d3-MeFOSAA	573.0 / 419.0	8669.35	250.00
NMeFOSAA_2	570.0 / 512.0	3.54	d3-MeFOSAA	573.0 / 419.0	8669.35	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	9123.25	250.00
NEtFOSAA_2	584.0 / 483.0	3.70	d5-EtFOSAA	589.0 / 419.0	9123.25	250.00

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Summary Internal Standard Report

Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	20076.58	232.25
PFBS_2	298.9 / 99.0	1.54	13C3-PFBS	302.0 / 99.0	20076.58	232.25
PFHxA_1	313.0 / 269.0	1.85	13C5-PFHxA	318.0 / 273.0	42954.97	250.00
PFHxA_2	313.0 / 119.0	1.85	13C5-PFHxA	318.0 / 273.0	42954.97	250.00
PFHpA_1	363.0 / 319.0	2.25	13C8-PFOA	421.0 / 376.0	47255.37	250.00
PFHpA_2	363.0 / 169.0	2.23	13C8-PFOA	421.0 / 376.0	47255.37	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	16423.06	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	16423.06	236.50
PFOA_1	413.0 / 369.0	2.65	13C8-PFOA	421.0 / 376.0	47255.37	250.00
PFOA_2	413.0 / 169.0	2.65	13C8-PFOA	421.0 / 376.0	47255.37	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	48665.85	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	48665.85	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	17264.86	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	17264.86	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	45646.94	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	45646.94	250.00
PFUnA_1	563.0 / 519.0	3.70	13C7-PFUnA	570.0 / 525.0	46831.54	250.00
PFUnA_2	563.0 / 269.0	3.70	13C7-PFUnA	570.0 / 525.0	46831.54	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	47290.64	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	47290.64	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	38338.81	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	38338.81	250.00
PFTeDA_1	713.0 / 669.0	4.44	13C2-PFTeDA	715.0 / 670.0	38338.81	250.00
PFTeDA_2	713.0 / 169.0	4.44	13C2-PFTeDA	715.0 / 670.0	38338.81	250.00
NMeFOSAA_1	570.0 / 419.0	3.54	d3-MeFOSAA	573.0 / 419.0	6622.39	250.00
NMeFOSAA_2	570.0 / 512.0	3.54	d3-MeFOSAA	573.0 / 419.0	6622.39	250.00
NEtFOSAA_1	584.0 / 419.0	3.70	d5-EtFOSAA	589.0 / 419.0	7635.42	250.00
NEtFOSAA_2	584.0 / 483.0	3.68	d5-EtFOSAA	589.0 / 419.0	7635.42	250.00

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Summary Internal Standard Report

Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	22634.57	232.25
PFBS_2	298.9 / 99.0	1.54	13C3-PFBS	302.0 / 99.0	22634.57	232.25
PFHxA_1	313.0 / 269.0	1.85	13C5-PFHxA	318.0 / 273.0	44736.99	250.00
PFHxA_2	313.0 / 119.0	1.84	13C5-PFHxA	318.0 / 273.0	44736.99	250.00
PFHpA_1	363.0 / 319.0	2.25	13C8-PFOA	421.0 / 376.0	54699.49	250.00
PFHpA_2	363.0 / 169.0	2.25	13C8-PFOA	421.0 / 376.0	54699.49	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	17599.61	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	17599.61	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	54699.49	250.00
PFOA_2	413.0 / 169.0	2.65	13C8-PFOA	421.0 / 376.0	54699.49	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	51751.34	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	51751.34	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	19995.25	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	19995.25	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	54688.56	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	54688.56	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	51335.16	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	51335.16	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	48338.75	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	48338.75	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	40007.91	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	40007.91	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	40007.91	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	40007.91	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	6354.37	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	6354.37	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	7606.55	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	7606.55	250.00

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Summary Internal Standard Report

Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	29199.94	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	29199.94	232.25
PFHxA_1	313.0 / 269.0	1.84	13C5-PFHxA	318.0 / 273.0	60734.16	250.00
PFHxA_2	313.0 / 119.0	1.84	13C5-PFHxA	318.0 / 273.0	60734.16	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	70348.87	250.00
PFHpA_2	363.0 / 169.0	2.24	13C8-PFOA	421.0 / 376.0	70348.87	250.00
PFHxS_1	399.0 / 80.0	2.26	13C3-PFHxS	402.0 / 99.0	22308.70	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	22308.70	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	70348.87	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	70348.87	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	61827.50	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	61827.50	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	24578.12	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	24578.12	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	63860.20	250.00
PFDA_2	513.0 / 219.0	3.37	13C6-PFDA	519.0 / 474.0	63860.20	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	63287.89	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	63287.89	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	64718.10	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	64718.10	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	48405.33	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	48405.33	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	48405.33	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	48405.33	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	8032.23	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	8032.23	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	8107.33	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	8107.33	250.00

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Summary Internal Standard Report

Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	21602.21	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	21602.21	232.25
PFHxA_1	313.0 / 269.0	1.84	13C5-PFHxA	318.0 / 273.0	47055.00	250.00
PFHxA_2	313.0 / 119.0	1.84	13C5-PFHxA	318.0 / 273.0	47055.00	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	51878.23	250.00
PFHpA_2	363.0 / 169.0	2.24	13C8-PFOA	421.0 / 376.0	51878.23	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	18775.03	236.50
PFHxS_2	399.0 / 99.0	2.26	13C3-PFHxS	402.0 / 99.0	18775.03	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	51878.23	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	51878.23	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	52128.74	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	52128.74	250.00
PFOS_1	499.0 / 80.0	3.02	13C8-PFOS	507.0 / 99.0	18773.07	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	18773.07	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	50535.78	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	50535.78	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	51272.02	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	51272.02	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	54239.26	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	54239.26	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	41109.98	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	41109.98	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	41109.98	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	41109.98	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	7123.79	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	7123.79	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	6941.92	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	6941.92	250.00

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Summary Internal Standard Report

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	25038.84	232.25
PFBS_2	298.9 / 99.0	1.54	13C3-PFBS	302.0 / 99.0	25038.84	232.25
PFHxA_1	313.0 / 269.0	1.85	13C5-PFHxA	318.0 / 273.0	45690.43	250.00
PFHxA_2	313.0 / 119.0	1.85	13C5-PFHxA	318.0 / 273.0	45690.43	250.00
PFHpA_1	363.0 / 319.0	2.25	13C8-PFOA	421.0 / 376.0	50379.30	250.00
PFHpA_2	363.0 / 169.0	2.25	13C8-PFOA	421.0 / 376.0	50379.30	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	16531.85	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	16531.85	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	50379.30	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	50379.30	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	49638.12	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	49638.12	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	18523.42	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	18523.42	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	51186.57	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	51186.57	250.00
PFUnA_1	563.0 / 519.0	3.70	13C7-PFUnA	570.0 / 525.0	51838.11	250.00
PFUnA_2	563.0 / 269.0	3.70	13C7-PFUnA	570.0 / 525.0	51838.11	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	61473.35	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	61473.35	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	46809.99	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	46809.99	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	46809.99	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	46809.99	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	8197.39	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	8197.39	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	6865.95	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	6865.95	250.00

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Summary Internal Standard Report

Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.98	13C2-PFDA	515.0 / 470.0	62612.00	250.00
d3-MeFOSAA	573.0 / 419.0	3.53	13C4-PFOS	503.0 / 99.0	19991.76	239.25
d5-EtFOSAA	589.0 / 419.0	3.69	13C4-PFOS	503.0 / 99.0	19991.76	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	64521.69	250.00
13C4-PFHpA	367.0 / 322.0	2.24	13C2-PFOA	415.0 / 370.0	64521.69	250.00
13C8-PFOA	421.0 / 376.0	2.64	13C2-PFOA	415.0 / 370.0	64521.69	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	64521.69	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	62612.00	250.00
13C7-PFUnA	570.0 / 525.0	3.69	13C2-PFDA	515.0 / 470.0	62612.00	250.00
13C2-PFTeDA	715.0 / 670.0	4.44	13C2-PFDA	515.0 / 470.0	62612.00	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	19991.76	239.25
13C3-PFHxS	402.0 / 99.0	2.26	13C4-PFOS	503.0 / 99.0	19991.76	239.25
13C8-PFOS	507.0 / 99.0	3.02	13C4-PFOS	503.0 / 99.0	19991.76	239.25

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Summary Internal Standard Report

Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.97	13C2-PFDA	515.0 / 470.0	57413.84	250.00
d3-MeFOSAA	573.0 / 419.0	3.53	13C4-PFOS	503.0 / 99.0	19680.67	239.25
d5-EtFOSAA	589.0 / 419.0	3.69	13C4-PFOS	503.0 / 99.0	19680.67	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	58412.50	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	58412.50	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	58412.50	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	58412.50	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	57413.84	250.00
13C7-PFUnA	570.0 / 525.0	3.69	13C2-PFDA	515.0 / 470.0	57413.84	250.00
13C2-PFTeDA	715.0 / 670.0	4.44	13C2-PFDA	515.0 / 470.0	57413.84	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	19680.67	239.25
13C3-PFHxS	402.0 / 99.0	2.26	13C4-PFOS	503.0 / 99.0	19680.67	239.25
13C8-PFOS	507.0 / 99.0	3.02	13C4-PFOS	503.0 / 99.0	19680.67	239.25

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Summary Internal Standard Report

Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.97	13C2-PFDA	515.0 / 470.0	47686.88	250.00
d3-MeFOSAA	573.0 / 419.0	3.53	13C4-PFOS	503.0 / 99.0	18034.60	239.25
d5-EtFOSAA	589.0 / 419.0	3.69	13C4-PFOS	503.0 / 99.0	18034.60	239.25
13C5-PFHxA	318.0 / 273.0	1.84	13C2-PFOA	415.0 / 370.0	44126.10	250.00
13C4-PFHpA	367.0 / 322.0	2.24	13C2-PFOA	415.0 / 370.0	44126.10	250.00
13C8-PFOA	421.0 / 376.0	2.64	13C2-PFOA	415.0 / 370.0	44126.10	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	44126.10	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	47686.88	250.00
13C7-PFUnA	570.0 / 525.0	3.69	13C2-PFDA	515.0 / 470.0	47686.88	250.00
13C2-PFTeDA	715.0 / 670.0	4.43	13C2-PFDA	515.0 / 470.0	47686.88	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	18034.60	239.25
13C3-PFHxS	402.0 / 99.0	2.26	13C4-PFOS	503.0 / 99.0	18034.60	239.25
13C8-PFOS	507.0 / 99.0	3.02	13C4-PFOS	503.0 / 99.0	18034.60	239.25

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Summary Internal Standard Report

Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.97	13C2-PFDA	515.0 / 470.0	47657.14	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	16124.75	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	16124.75	239.25
13C5-PFHxA	318.0 / 273.0	1.84	13C2-PFOA	415.0 / 370.0	49957.68	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	49957.68	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	49957.68	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	49957.68	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	47657.14	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	47657.14	250.00
13C2-PFTeDA	715.0 / 670.0	4.43	13C2-PFDA	515.0 / 470.0	47657.14	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	16124.75	239.25
13C3-PFHxS	402.0 / 99.0	2.26	13C4-PFOS	503.0 / 99.0	16124.75	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	16124.75	239.25

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Summary Internal Standard Report

Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.97	13C2-PFDA	515.0 / 470.0	61266.67	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	23857.68	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	23857.68	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	60385.02	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	60385.02	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	60385.02	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	60385.02	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	61266.67	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	61266.67	250.00
13C2-PFTeDA	715.0 / 670.0	4.43	13C2-PFDA	515.0 / 470.0	61266.67	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	23857.68	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	23857.68	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	23857.68	239.25

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Summary Internal Standard Report

Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	48271.12	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	18411.39	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	18411.39	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	52038.12	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	52038.12	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	52038.12	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	52038.12	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	48271.12	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	48271.12	250.00
13C2-PFTeDA	715.0 / 670.0	4.43	13C2-PFDA	515.0 / 470.0	48271.12	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	18411.39	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	18411.39	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	18411.39	239.25

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Summary Internal Standard Report

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.97	13C2-PFDA	515.0 / 470.0	57726.45	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	20888.13	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	20888.13	239.25
13C5-PFHxA	318.0 / 273.0	1.84	13C2-PFOA	415.0 / 370.0	53157.48	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	53157.48	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	53157.48	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	53157.48	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	57726.45	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	57726.45	250.00
13C2-PFTeDA	715.0 / 670.0	4.43	13C2-PFDA	515.0 / 470.0	57726.45	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	20888.13	239.25
13C3-PFHxS	402.0 / 99.0	2.26	13C4-PFOS	503.0 / 99.0	20888.13	239.25
13C8-PFOS	507.0 / 99.0	3.02	13C4-PFOS	503.0 / 99.0	20888.13	239.25

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.54	1116.333150	1010.00	110.53
PFBS_2	298.9 / 99.0	1.53	1111.905753	1010.00	110.09
PFHxA_1	313.0 / 269.0	1.85	971.237452	1010.00	96.16
PFHxA_2	313.0 / 119.0	1.85	1014.998847	1010.00	100.49
PFHpA_1	363.0 / 319.0	2.24	885.762834	1000.00	88.58
PFHpA_2	363.0 / 169.0	2.25	823.742767	1000.00	82.37
PFHxS_1	399.0 / 80.0	2.27	893.448263	1010.00	88.46
PFHxS_2	399.0 / 99.0	2.27	894.022753	1010.00	88.52
PFOA_1	413.0 / 369.0	2.64	904.476779	1000.00	90.45
PFOA_2	413.0 / 169.0	2.64	821.562878	1000.00	82.16
PFNA_1	463.0 / 419.0	3.03	875.909235	1000.00	87.59
PFNA_2	463.0 / 219.0	3.03	890.057205	1000.00	89.01
PFOS_1	499.0 / 80.0	3.03	915.195881	1000.00	91.52
PFOS_2	499.0 / 99.0	3.03	887.163253	1000.00	88.72
PFDA_1	513.0 / 469.0	3.38	1017.457860	1000.00	101.75
PFDA_2	513.0 / 219.0	3.38	972.619130	1000.00	97.26
PFUnA_1	563.0 / 519.0	3.69	1010.148911	1000.00	101.01
PFUnA_2	563.0 / 269.0	3.69	1008.854852	1000.00	100.89
PFDoA_1	613.0 / 569.0	3.98	1017.301356	1000.00	101.73
PFDoA_2	613.0 / 319.0	3.97	1024.352918	1000.00	102.44
PFTrDA_1	663.0 / 619.0	4.22	1127.958999	1000.00	112.80
PFTrDA_2	663.0 / 169.0	4.22	1067.801351	1000.00	106.78
PFTeDA_1	713.0 / 669.0	4.43	1082.338578	1000.00	108.23
PFTeDA_2	713.0 / 169.0	4.43	1083.852728	1000.00	108.39
NMeFOSAA_1	570.0 / 419.0	3.53	992.889949	1000.00	99.29
NMeFOSAA_2	570.0 / 512.0	3.53	877.311431	1000.00	87.73
NEtFOSAA_1	584.0 / 419.0	3.69	1127.984070	1000.00	112.80
NEtFOSAA_2	584.0 / 483.0	3.69	958.925191	1000.00	95.89

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.53	2562.158854	2525.00	101.47
PFBS_2	298.9 / 99.0	1.53	2523.811438	2525.00	99.95
PFHxA_1	313.0 / 269.0	1.84	2210.407494	2525.00	87.54
PFHxA_2	313.0 / 119.0	1.84	2224.902959	2525.00	88.11
PFHpA_1	363.0 / 319.0	2.24	2108.523934	2500.00	84.34
PFHpA_2	363.0 / 169.0	2.24	2082.294087	2500.00	83.29
PFHxS_1	399.0 / 80.0	2.26	2262.286719	2525.00	89.60
PFHxS_2	399.0 / 99.0	2.26	2363.136829	2525.00	93.59
PFOA_1	413.0 / 369.0	2.64	2186.203668	2500.00	87.45
PFOA_2	413.0 / 169.0	2.64	2141.091874	2500.00	85.64
PFNA_1	463.0 / 419.0	3.02	2189.921889	2500.00	87.60
PFNA_2	463.0 / 219.0	3.02	2077.266124	2500.00	83.09
PFOS_1	499.0 / 80.0	3.02	2578.120772	2500.00	103.12
PFOS_2	499.0 / 99.0	3.02	2723.056815	2500.00	108.92
PFDA_1	513.0 / 469.0	3.38	2364.317466	2500.00	94.57
PFDA_2	513.0 / 219.0	3.37	2201.311331	2500.00	88.05
PFUnA_1	563.0 / 519.0	3.69	2215.286564	2500.00	88.61
PFUnA_2	563.0 / 269.0	3.69	2292.018710	2500.00	91.68
PFDoA_1	613.0 / 569.0	3.97	2456.729993	2500.00	98.27
PFDoA_2	613.0 / 319.0	3.97	2503.451892	2500.00	100.14
PFTrDA_1	663.0 / 619.0	4.22	2698.215172	2500.00	107.93
PFTrDA_2	663.0 / 169.0	4.21	2656.127469	2500.00	106.25
PFTeDA_1	713.0 / 669.0	4.43	2622.647058	2500.00	104.91
PFTeDA_2	713.0 / 169.0	4.43	2581.993222	2500.00	103.28
NMeFOSAA_1	570.0 / 419.0	3.53	2550.890367	2500.00	102.04
NMeFOSAA_2	570.0 / 512.0	3.53	2461.204487	2500.00	98.45
NEtFOSAA_1	584.0 / 419.0	3.69	1914.531767	2500.00	76.58
NEtFOSAA_2	584.0 / 483.0	3.69	2257.930143	2500.00	90.32

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.96	249.050713	250.00	99.62
d3-MeFOSAA	573.0 / 419.0	3.52	240.151495	250.00	96.06
d5-EtFOSAA	589.0 / 419.0	3.68	215.693399	250.00	86.28
13C5-PFHxA	318.0 / 273.0	1.83	253.703004	250.00	101.48
13C4-PFHpA	367.0 / 322.0	2.23	255.340283	250.00	102.14
13C8-PFOA	421.0 / 376.0	2.63	279.453097	250.00	111.78
13C9-PFNA	472.0 / 427.0	3.01	295.245165	250.00	118.10
13C6-PFDA	519.0 / 474.0	3.37	249.663304	250.00	99.87
13C7-PFUnA	570.0 / 525.0	3.68	252.400097	250.00	100.96
13C2-PFTeDA	715.0 / 670.0	4.42	240.677736	250.00	96.27
13C3-PFBS	302.0 / 99.0	1.52	200.782472	232.25	86.45
13C3-PFHxS	402.0 / 99.0	2.25	244.099953	236.50	103.21
13C8-PFOS	507.0 / 99.0	3.02	234.963362	239.25	98.21

QC Summary Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.96	252.577447	250.00	101.03
d3-MeFOSAA	573.0 / 419.0	3.52	261.066600	250.00	104.43
d5-EtFOSAA	589.0 / 419.0	3.68	311.544389	250.00	124.62
13C5-PFHxA	318.0 / 273.0	1.83	265.867654	250.00	106.35
13C4-PFHpA	367.0 / 322.0	2.23	246.903056	250.00	98.76
13C8-PFOA	421.0 / 376.0	2.63	268.778426	250.00	107.51
13C9-PFNA	472.0 / 427.0	3.01	280.852546	250.00	112.34
13C6-PFDA	519.0 / 474.0	3.36	246.763154	250.00	98.71
13C7-PFUnA	570.0 / 525.0	3.68	259.082819	250.00	103.63
13C2-PFTeDA	715.0 / 670.0	4.42	225.555711	250.00	90.22
13C3-PFBS	302.0 / 99.0	1.51	232.647581	232.25	100.17
13C3-PFHxS	402.0 / 99.0	2.25	257.585777	236.50	108.92
13C8-PFOS	507.0 / 99.0	3.01	250.267566	239.25	104.61

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	326299.85	1116.333150	294.0	false
PFBS_2	298.9 / 99.0	1.53	95654.48	1111.905753	255.1	false
PFHxA_1	313.0 / 269.0	1.85	215204.19	971.237452	46.3	false
PFHxA_2	313.0 / 119.0	1.85	15616.00	1014.998847	27.6	false
PFHpA_1	363.0 / 319.0	2.24	192228.20	885.762834	71.3	false
PFHpA_2	363.0 / 169.0	2.25	3515.94	823.742767	45.5	false
PFHxS_1	399.0 / 80.0	2.27	311634.77	893.448263	181.9	false
PFHxS_2	399.0 / 99.0	2.27	88732.78	894.022753	373.1	false
PFOA_1	413.0 / 369.0	2.64	251449.25	904.476779	147.7	false
PFOA_2	413.0 / 169.0	2.64	14720.36	821.562878	103.8	false
PFNA_1	463.0 / 419.0	3.03	224213.95	875.909235	169.3	false
PFNA_2	463.0 / 219.0	3.03	70477.63	890.057205	167.4	false
PFOS_1	499.0 / 80.0	3.03	395057.23	915.195881	119.3	true
PFOS_2	499.0 / 99.0	3.03	69335.57	887.163253	261.9	false
PFDA_1	513.0 / 469.0	3.38	238581.19	1017.457860	236.1	false
PFDA_2	513.0 / 219.0	3.38	11080.24	972.619130	115.4	false
PFUnA_1	563.0 / 519.0	3.69	245714.34	1010.148911	212.6	false
PFUnA_2	563.0 / 269.0	3.69	13482.19	1008.854852	132.7	false
PFDoA_1	613.0 / 569.0	3.98	221378.78	1017.301356	238.0	false
PFDoA_2	613.0 / 319.0	3.97	36053.23	1024.352918	216.6	false
PFTrDA_1	663.0 / 619.0	4.22	215877.88	1127.958999	356.4	false
PFTrDA_2	663.0 / 169.0	4.22	13094.30	1067.801351	250.5	false
PFTeDA_1	713.0 / 669.0	4.43	219657.94	1082.338578	626.0	false
PFTeDA_2	713.0 / 169.0	4.43	10541.33	1083.852728	416.5	false
NMeFOSAA_1	570.0 / 419.0	3.53	32345.28	992.889949	275.2	false
NMeFOSAA_2	570.0 / 512.0	3.53	16010.58	877.311431	191.5	false
NEtFOSAA_1	584.0 / 419.0	3.69	34570.32	1127.984070	310.5	false
NEtFOSAA_2	584.0 / 483.0	3.69	1898.04	958.925191	75.3	false

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Summary Quant Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	927546.32	2562.158854	501.4	false
PFBS_2	298.9 / 99.0	1.53	268458.69	2523.811438	383.9	false
PFHxA_1	313.0 / 269.0	1.84	660208.96	2210.407494	100.4	false
PFHxA_2	313.0 / 119.0	1.84	46684.19	2224.902959	62.7	false
PFHpA_1	363.0 / 319.0	2.24	571853.13	2108.523934	145.0	false
PFHpA_2	363.0 / 169.0	2.24	10900.29	2082.294087	108.5	false
PFHxS_1	399.0 / 80.0	2.26	895941.54	2262.286719	218.8	false
PFHxS_2	399.0 / 99.0	2.26	264064.19	2363.136829	383.3	false
PFOA_1	413.0 / 369.0	2.64	759035.37	2186.203668	352.5	false
PFOA_2	413.0 / 169.0	2.64	47753.26	2141.091874	239.0	false
PFNA_1	463.0 / 419.0	3.02	693374.09	2189.921889	421.6	false
PFNA_2	463.0 / 219.0	3.02	203135.56	2077.266124	323.2	false
PFOS_1	499.0 / 80.0	3.02	1205971.52	2578.120772	176.5	false
PFOS_2	499.0 / 99.0	3.02	225754.17	2723.056815	415.9	false
PFDA_1	513.0 / 469.0	3.38	715120.56	2364.317466	277.0	false
PFDA_2	513.0 / 219.0	3.37	30252.88	2201.311331	220.8	false
PFUnA_1	563.0 / 519.0	3.69	726891.43	2215.286564	325.5	false
PFUnA_2	563.0 / 269.0	3.69	39268.12	2292.018710	189.6	false
PFDoA_1	613.0 / 569.0	3.97	695380.61	2456.729993	364.6	false
PFDoA_2	613.0 / 319.0	3.97	110084.72	2503.451892	359.8	false
PFTrDA_1	663.0 / 619.0	4.22	622967.70	2698.215172	618.3	false
PFTrDA_2	663.0 / 169.0	4.21	38993.43	2656.127469	369.7	false
PFTeDA_1	713.0 / 669.0	4.43	644351.33	2622.647058	1002.6	false
PFTeDA_2	713.0 / 169.0	4.43	30118.09	2581.993222	574.2	false
NMeFOSAA_1	570.0 / 419.0	3.53	93132.54	2550.890367	412.2	false
NMeFOSAA_2	570.0 / 512.0	3.53	49343.74	2461.204487	378.0	false
NEtFOSAA_1	584.0 / 419.0	3.69	91152.16	1914.531767	550.4	false
NEtFOSAA_2	584.0 / 483.0	3.69	6792.34	2257.930143	163.6	false

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Summary Quant Report

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	58979.14	249.050713	753.8	false
d3-MeFOSAA	573.0 / 419.0	3.52	8688.20	240.151495	116.6	false
d5-EtFOSAA	589.0 / 419.0	3.68	7924.98	215.693399	104.8	false
13C5-PFHxA	318.0 / 273.0	1.83	51040.06	253.703004	396.3	false
13C4-PFHpA	367.0 / 322.0	2.23	56427.26	255.340283	436.2	false
13C8-PFOA	421.0 / 376.0	2.63	65385.03	279.453097	891.3	false
13C9-PFNA	472.0 / 427.0	3.01	66179.63	295.245165	809.1	false
13C6-PFDA	519.0 / 474.0	3.37	58184.13	249.663304	594.5	false
13C7-PFUnA	570.0 / 525.0	3.68	59041.28	252.400097	387.6	false
13C2-PFTeDA	715.0 / 670.0	4.42	45312.68	240.677736	1029.3	false
13C3-PFBS	302.0 / 99.0	1.52	24753.26	200.782472	325.6	false
13C3-PFHxS	402.0 / 99.0	2.25	22688.61	244.099953	242.7	false
13C8-PFOS	507.0 / 99.0	3.02	22622.89	234.963362	143.5	false

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Summary Quant Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	77802.76	252.577447	841.4	false
d3-MeFOSAA	573.0 / 419.0	3.52	10020.09	261.066600	94.9	false
d5-EtFOSAA	589.0 / 419.0	3.68	12143.88	311.544389	131.1	false
13C5-PFHxA	318.0 / 273.0	1.83	68378.64	265.867654	535.7	false
13C4-PFHpA	367.0 / 322.0	2.23	69753.42	246.903056	335.8	false
13C8-PFOA	421.0 / 376.0	2.63	80395.77	268.778426	1006.9	false
13C9-PFNA	472.0 / 427.0	3.01	80480.25	280.852546	942.4	false
13C6-PFDA	519.0 / 474.0	3.36	74803.16	246.763154	408.4	false
13C7-PFUnA	570.0 / 525.0	3.68	78830.57	259.082819	351.7	false
13C2-PFTeDA	715.0 / 670.0	4.42	55236.67	225.555711	1014.0	false
13C3-PFBS	302.0 / 99.0	1.51	30428.54	232.647581	339.3	false
13C3-PFHxS	402.0 / 99.0	2.25	25400.26	257.585777	269.7	false
13C8-PFOS	507.0 / 99.0	3.01	25563.98	250.267566	163.1	false

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Summary Ion Ratio Report

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Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.490	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.050	0.069	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 18/09/2018 3:34:22 PM

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.290	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.190	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.040	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.530	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Internal Standard Report

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	24753.26	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	24753.26	232.25
PFHxA_1	313.0 / 269.0	1.85	13C5-PFHxA	318.0 / 273.0	51040.06	250.00
PFHxA_2	313.0 / 119.0	1.85	13C5-PFHxA	318.0 / 273.0	51040.06	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	65717.90	250.00
PFHpA_2	363.0 / 169.0	2.25	13C8-PFOA	421.0 / 376.0	65717.90	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	22688.61	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	22688.61	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	65717.90	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	65717.90	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	66179.63	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	66179.63	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	23415.77	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	23415.77	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	58184.13	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	58184.13	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	59041.28	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	59041.28	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	58979.14	250.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFDoA	615.0 / 570.0	58979.14	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	45312.68	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	45312.68	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	45312.68	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	45312.68	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	8688.20	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	8688.20	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	7924.98	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	7924.98	250.00

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Summary Internal Standard Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	30428.54	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	30428.54	232.25
PFHxA_1	313.0 / 269.0	1.84	13C5-PFHxA	318.0 / 273.0	68378.64	250.00
PFHxA_2	313.0 / 119.0	1.84	13C5-PFHxA	318.0 / 273.0	68378.64	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	81093.73	250.00
PFHpA_2	363.0 / 169.0	2.24	13C8-PFOA	421.0 / 376.0	81093.73	250.00
PFHxS_1	399.0 / 80.0	2.26	13C3-PFHxS	402.0 / 99.0	25400.26	236.50
PFHxS_2	399.0 / 99.0	2.26	13C3-PFHxS	402.0 / 99.0	25400.26	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	81093.73	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	81093.73	250.00
PFNA_1	463.0 / 419.0	3.02	13C9-PFNA	472.0 / 427.0	80480.25	250.00
PFNA_2	463.0 / 219.0	3.02	13C9-PFNA	472.0 / 427.0	80480.25	250.00
PFOS_1	499.0 / 80.0	3.02	13C8-PFOS	507.0 / 99.0	24716.07	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	24716.07	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	74803.16	250.00
PFDA_2	513.0 / 219.0	3.37	13C6-PFDA	519.0 / 474.0	74803.16	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	78830.57	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	78830.57	250.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFDoA	615.0 / 570.0	77802.76	250.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFDoA	615.0 / 570.0	77802.76	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	55236.67	250.00
PFTrDA_2	663.0 / 169.0	4.21	13C2-PFTeDA	715.0 / 670.0	55236.67	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	55236.67	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	55236.67	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	10020.09	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	10020.09	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	12143.88	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	12143.88	250.00

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Summary Internal Standard Report

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	56928.59	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	22540.57	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	22540.57	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	54959.55	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	54959.55	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	54959.55	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	54959.55	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	56928.59	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	56928.59	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	56928.59	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	22540.57	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	22540.57	239.25
13C8-PFOS	507.0 / 99.0	3.02	13C4-PFOS	503.0 / 99.0	22540.57	239.25

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Summary Internal Standard Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	74049.18	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	23913.38	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	23913.38	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	70260.72	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	70260.72	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	70260.72	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	70260.72	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	74049.18	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	74049.18	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	74049.18	250.00
13C3-PFBS	302.0 / 99.0	1.51	13C4-PFOS	503.0 / 99.0	23913.38	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	23913.38	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	23913.38	239.25

Raw Analytical Data

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Summary Quant Report

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Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.55	9640.41	42.033977	42.4	true
PFBS_2	298.9 / 99.0	1.53	3004.53	40.540739	28.3	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	2.27	7446.88	42.673804	30.2	true
PFHxS_2	399.0 / 99.0	2.27	3075.45	40.729064	24.5	false
PFOA_1	413.0 / 369.0	2.64	10435.63	50.921098	16.8	false
PFOA_2	413.0 / 169.0	2.63	757.21	48.512475	13.8	false
PFNA_1	463.0 / 419.0	3.03	7500.69	51.731740	14.7	false
PFNA_2	463.0 / 219.0	3.04	2777.25	56.441700	16.8	false
PFOS_1	499.0 / 80.0	2.99	14943.03	68.941649	19.0	true
PFOS_2	499.0 / 99.0	3.04	1818.74	29.184320	19.0	false
PFDA_1	513.0 / 469.0	3.38	10305.64	43.156400	34.3	false
PFDA_2	513.0 / 219.0	3.41	798.80	< 0	22.4	false
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	3.97	7963.72	9.862118	63.3	false
PFDoA_2	613.0 / 319.0	3.98	1275.65	< 0	38.3	false
PFTrDA_1	663.0 / 619.0	4.22	6945.16	12.938958	78.0	false
PFTrDA_2	663.0 / 169.0	4.22	573.83	10.645735	33.6	false
PFTeDA_1	713.0 / 669.0	4.43	7405.80	20.538228	157.2	false
PFTeDA_2	713.0 / 169.0	4.44	497.13	16.589298	46.1	true
NMeFOSAA_1	570.0 / 419.0	3.53	1458.70	3.715060	32.4	false
NMeFOSAA_2	570.0 / 512.0	3.53	745.03	< 0	15.6	false
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

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Summary Quant Report

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Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	true
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	true
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	true
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	true
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	true
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	true
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	true
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	true
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	true
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	true
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	true
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true

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Summary Quant Report

Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	702386.70	2087.218172	492.3	false
PFBS_2	298.9 / 99.0	1.53	212216.23	2145.161454	366.6	false
PFHxA_1	313.0 / 269.0	1.84	519161.38	1914.440644	79.1	false
PFHxA_2	313.0 / 119.0	1.84	34120.97	1796.090677	49.5	false
PFHpA_1	363.0 / 319.0	2.24	430021.73	1821.075661	119.1	false
PFHpA_2	363.0 / 169.0	2.24	7992.00	1749.628358	107.2	false
PFHxS_1	399.0 / 80.0	2.26	713202.49	2024.204627	199.8	false
PFHxS_2	399.0 / 99.0	2.26	190964.61	1920.358357	435.4	false
PFOA_1	413.0 / 369.0	2.64	569419.86	1883.507511	305.5	false
PFOA_2	413.0 / 169.0	2.64	38599.79	1985.723452	203.2	false
PFNA_1	463.0 / 419.0	3.03	513377.42	1846.108139	311.7	false
PFNA_2	463.0 / 219.0	3.02	152749.01	1778.174455	286.9	false
PFOS_1	499.0 / 80.0	3.02	941405.52	2248.145351	173.2	false
PFOS_2	499.0 / 99.0	3.02	168830.23	2271.162330	306.2	false
PFDA_1	513.0 / 469.0	3.37	530858.11	1942.946653	296.7	false
PFDA_2	513.0 / 219.0	3.37	24621.57	1970.195876	215.7	false
PFUnA_1	563.0 / 519.0	3.69	541236.46	1952.293001	272.8	false
PFUnA_2	563.0 / 269.0	3.69	30898.36	2126.723012	235.7	false
PFDoA_1	613.0 / 569.0	3.97	504871.12	2000.150069	352.4	false
PFDoA_2	613.0 / 319.0	3.97	79794.18	2020.830443	270.9	false
PFTrDA_1	663.0 / 619.0	4.22	472140.07	2143.164402	587.9	false
PFTrDA_2	663.0 / 169.0	4.21	30182.44	2152.720735	416.2	false
PFTeDA_1	713.0 / 669.0	4.43	523658.04	2236.243374	874.4	false
PFTeDA_2	713.0 / 169.0	4.43	24788.62	2227.313161	662.4	false
NMeFOSAA_1	570.0 / 419.0	3.53	72841.91	2175.751612	566.1	false
NMeFOSAA_2	570.0 / 512.0	3.53	37779.66	2050.221539	396.8	false
NEtFOSAA_1	584.0 / 419.0	3.69	73079.73	2196.248313	551.9	false
NEtFOSAA_2	584.0 / 483.0	3.68	4259.20	2029.526435	136.4	false

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Summary Quant Report

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Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	26452.53	102.979903	47.6	true
PFOS_2	499.0 / 99.0	3.02	4741.13	74.735344	34.2	false
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	3.69	11568.14	64.470068	39.8	false
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	3.97	3525.73	< 0	27.5	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.21	1390.08	< 0	29.5	true
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true

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Summary Quant Report

Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	52353.91	159.696705	64.2	false
PFOS_2	499.0 / 99.0	3.02	12059.17	168.778367	102.7	false
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	3.69	12313.49	70.275777	40.2	false
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	3.97	2017.38	< 0	29.2	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.21	1474.16	< 0	30.2	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true

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Summary Quant Report

Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	1587012.77	4743.033035	686.8	false
PFBS_2	298.9 / 99.0	1.53	475797.80	4841.791987	602.5	false
PFHxA_1	313.0 / 269.0	1.84	1088862.18	4670.209609	135.3	false
PFHxA_2	313.0 / 119.0	1.84	79129.85	4805.172692	88.7	false
PFHpA_1	363.0 / 319.0	2.24	966075.54	4624.768356	214.8	false
PFHpA_2	363.0 / 169.0	2.24	20410.81	5099.556117	136.3	false
PFHxS_1	399.0 / 80.0	2.26	1514389.24	4954.910703	336.4	false
PFHxS_2	399.0 / 99.0	2.26	425453.24	4949.209850	562.4	false
PFOA_1	413.0 / 369.0	2.64	1220331.43	4566.028931	489.6	false
PFOA_2	413.0 / 169.0	2.64	75869.06	4426.102636	356.2	false
PFNA_1	463.0 / 419.0	3.03	1106395.44	4511.986794	479.8	false
PFNA_2	463.0 / 219.0	3.03	337034.23	4448.661993	414.3	false
PFOS_1	499.0 / 80.0	3.02	1966017.31	5184.303287	213.3	false
PFOS_2	499.0 / 99.0	3.02	354943.52	5312.723320	533.7	false
PFDA_1	513.0 / 469.0	3.38	1161316.47	5005.640132	351.1	false
PFDA_2	513.0 / 219.0	3.38	52559.87	5145.702051	248.5	false
PFUnA_1	563.0 / 519.0	3.69	1210946.05	4577.545517	481.7	false
PFUnA_2	563.0 / 269.0	3.69	62318.96	4607.171884	267.6	false
PFDoA_1	613.0 / 569.0	3.97	1060010.50	4916.074147	426.1	false
PFDoA_2	613.0 / 319.0	3.97	175677.87	5327.411434	400.2	false
PFTrDA_1	663.0 / 619.0	4.22	985986.64	4872.714853	756.0	false
PFTrDA_2	663.0 / 169.0	4.22	67284.00	5243.643453	547.9	false
PFTeDA_1	713.0 / 669.0	4.43	1097693.64	5092.768892	1138.4	false
PFTeDA_2	713.0 / 169.0	4.43	51809.00	5080.404999	719.5	false
NMeFOSAA_1	570.0 / 419.0	3.53	141044.82	5957.311879	754.9	false
NMeFOSAA_2	570.0 / 512.0	3.53	80044.33	6194.512605	612.0	false
NEtFOSAA_1	584.0 / 419.0	3.69	138788.58	4615.124608	696.1	false
NEtFOSAA_2	584.0 / 483.0	3.69	9222.18	4925.167192	248.0	false

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Summary Quant Report

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Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	1288221.09	4756.760441	586.8	false
PFBS_2	298.9 / 99.0	1.54	393292.70	4944.553859	473.1	false
PFHxA_1	313.0 / 269.0	1.85	875672.59	4527.149531	128.5	false
PFHxA_2	313.0 / 119.0	1.85	61157.74	4478.415726	77.6	false
PFHpA_1	363.0 / 319.0	2.24	780006.14	4012.908480	173.5	false
PFHpA_2	363.0 / 169.0	2.25	15512.68	4161.080996	165.9	false
PFHxS_1	399.0 / 80.0	2.27	1233164.16	4460.584130	297.5	false
PFHxS_2	399.0 / 99.0	2.27	365730.89	4701.707895	687.6	false
PFOA_1	413.0 / 369.0	2.64	1059674.07	4259.581172	453.0	false
PFOA_2	413.0 / 169.0	2.64	60458.79	3789.785485	279.9	false
PFNA_1	463.0 / 419.0	3.03	901290.89	4586.369386	475.5	false
PFNA_2	463.0 / 219.0	3.03	279943.10	4610.296521	359.8	false
PFOS_1	499.0 / 80.0	3.03	1646800.41	5200.768796	220.3	false
PFOS_2	499.0 / 99.0	3.03	287049.98	5145.954312	428.0	false
PFDA_1	513.0 / 469.0	3.38	995803.15	5476.861810	354.5	false
PFDA_2	513.0 / 219.0	3.38	45238.15	5663.699997	266.3	false
PFUnA_1	563.0 / 519.0	3.69	971911.42	4944.460349	375.8	false
PFUnA_2	563.0 / 269.0	3.69	51110.73	5094.829478	282.7	false
PFDoA_1	613.0 / 569.0	3.98	910249.60	4881.145599	428.3	false
PFDoA_2	613.0 / 319.0	3.97	140045.04	4902.730484	407.2	false
PFTrDA_1	663.0 / 619.0	4.22	839352.39	4981.057292	670.1	false
PFTrDA_2	663.0 / 169.0	4.22	53341.10	4989.795759	476.8	false
PFTeDA_1	713.0 / 669.0	4.43	894972.00	4985.357983	1229.4	false
PFTeDA_2	713.0 / 169.0	4.43	42952.32	5057.143806	694.5	false
NMeFOSAA_1	570.0 / 419.0	3.53	127756.85	5068.918868	543.0	false
NMeFOSAA_2	570.0 / 512.0	3.53	63280.75	4588.863857	342.4	false
NEtFOSAA_1	584.0 / 419.0	3.69	123535.12	3916.659732	654.5	false
NEtFOSAA_2	584.0 / 483.0	3.69	8163.61	4148.754731	253.9	false

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Summary Quant Report

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Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	4540.43	31.303827	15.8	true
PFBS_2	298.9 / 99.0	1.51	2616.11	44.112100	18.2	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	2.27	5092.87	37.059789	22.2	false
PFHxS_2	399.0 / 99.0	2.27	2186.86	33.434244	16.3	false
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	3.03	61997.11	192.465266	76.4	true
PFOS_2	499.0 / 99.0	3.02	16433.01	242.828606	113.1	false
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	3.70	8987.93	59.022092	31.9	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	3.98	4534.18	< 0	41.5	false
PFDoA_2	613.0 / 319.0	3.98	937.42	< 0	27.7	false
PFTrDA_1	663.0 / 619.0	4.22	2566.89	< 0	45.1	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true

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Summary Quant Report

Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	63643.52	235.348356	819.0	false
d3-MeFOSAA	573.0 / 419.0	3.52	7866.31	212.071382	123.1	false
d5-EtFOSAA	589.0 / 419.0	3.68	8486.95	225.291937	104.0	false
13C5-PFHxA	318.0 / 273.0	1.83	58581.26	238.709081	505.1	false
13C4-PFHpA	367.0 / 322.0	2.23	61190.62	226.992200	367.2	false
13C8-PFOA	421.0 / 376.0	2.63	73092.64	256.094337	1056.7	false
13C9-PFNA	472.0 / 427.0	3.01	68712.83	251.299761	877.4	false
13C6-PFDA	519.0 / 474.0	3.36	68222.64	256.357678	557.7	false
13C7-PFUnA	570.0 / 525.0	3.68	68972.52	258.212616	436.5	false
13C2-PFTeDA	715.0 / 670.0	4.42	50077.24	232.929295	925.6	false
13C3-PFBS	302.0 / 99.0	1.52	29473.65	233.175466	325.2	false
13C3-PFHxS	402.0 / 99.0	2.25	21337.71	223.904644	226.8	false
13C8-PFOS	507.0 / 99.0	3.01	23378.90	236.827299	137.7	false

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Summary Quant Report

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Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	52857.82	238.120576	823.2	false
d3-MeFOSAA	573.0 / 419.0	3.52	6217.95	204.328493	97.3	false
d5-EtFOSAA	589.0 / 419.0	3.68	6614.55	214.025460	78.2	false
13C5-PFHxA	318.0 / 273.0	1.83	49260.58	245.374452	339.9	false
13C4-PFHpA	367.0 / 322.0	2.23	54122.11	245.425931	397.4	false
13C8-PFOA	421.0 / 376.0	2.63	60328.38	258.385206	1126.5	false
13C9-PFNA	472.0 / 427.0	3.01	50964.84	227.847624	824.0	false
13C6-PFDA	519.0 / 474.0	3.36	51105.47	233.946132	609.8	false
13C7-PFUnA	570.0 / 525.0	3.68	55015.35	250.908852	451.3	false
13C2-PFTeDA	715.0 / 670.0	4.42	44399.36	251.588707	1041.5	false
13C3-PFBS	302.0 / 99.0	1.52	23735.13	228.881846	321.7	false
13C3-PFHxS	402.0 / 99.0	2.25	18478.02	236.342292	196.1	false
13C8-PFOS	507.0 / 99.0	3.01	20074.38	247.868135	125.8	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 18/09/2018 3:39:31 PM

Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	69223.72	226.404107	724.4	false
d3-MeFOSAA	573.0 / 419.0	3.52	9159.03	222.827867	105.2	false
d5-EtFOSAA	589.0 / 419.0	3.68	8466.11	202.808817	112.4	false
13C5-PFHxA	318.0 / 273.0	1.83	62129.10	238.084600	512.7	false
13C4-PFHpA	367.0 / 322.0	2.23	61375.91	214.116489	379.1	false
13C8-PFOA	421.0 / 376.0	2.63	70220.47	231.374856	893.0	false
13C9-PFNA	472.0 / 427.0	3.01	70833.42	243.623094	902.9	false
13C6-PFDA	519.0 / 474.0	3.36	67608.20	224.692976	682.3	false
13C7-PFUnA	570.0 / 525.0	3.68	66680.35	220.786039	502.0	false
13C2-PFTeDA	715.0 / 670.0	4.42	52602.56	216.402866	786.0	false
13C3-PFBS	302.0 / 99.0	1.52	28322.44	202.203462	324.2	false
13C3-PFHxS	402.0 / 99.0	2.25	22622.04	214.218048	212.7	false
13C8-PFOS	507.0 / 99.0	3.01	23352.95	213.480646	133.5	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 18/09/2018 3:39:35 PM

Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	57388.11	201.496991	653.4	false
d3-MeFOSAA	573.0 / 419.0	3.51	6635.00	213.446273	93.5	false
d5-EtFOSAA	589.0 / 419.0	3.67	9721.92	307.951645	116.6	false
13C5-PFHxA	318.0 / 273.0	1.83	51895.87	230.408526	413.7	false
13C4-PFHpA	367.0 / 322.0	2.23	56013.37	226.398374	490.5	false
13C8-PFOA	421.0 / 376.0	2.63	63880.31	243.864648	668.2	false
13C9-PFNA	472.0 / 427.0	3.01	65190.32	259.772297	624.7	false
13C6-PFDA	519.0 / 474.0	3.36	57760.55	206.081388	677.1	false
13C7-PFUnA	570.0 / 525.0	3.67	60327.30	214.439543	478.9	false
13C2-PFTeDA	715.0 / 670.0	4.42	47994.37	211.964792	717.3	false
13C3-PFBS	302.0 / 99.0	1.52	27283.92	257.568152	323.3	false
13C3-PFHxS	402.0 / 99.0	2.25	19642.13	245.946402	248.9	false
13C8-PFOS	507.0 / 99.0	3.01	20741.94	250.722644	164.9	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 18/09/2018 3:39:38 PM

Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	57721.86	191.853681	768.2	false
d3-MeFOSAA	573.0 / 419.0	3.52	6715.87	161.806870	104.3	false
d5-EtFOSAA	589.0 / 419.0	3.68	7786.29	184.717701	111.1	false
13C5-PFHxA	318.0 / 273.0	1.83	52276.24	187.693878	695.1	false
13C4-PFHpA	367.0 / 322.0	2.23	56233.34	183.804251	532.6	false
13C8-PFOA	421.0 / 376.0	2.63	66194.14	204.353200	1237.2	false
13C9-PFNA	472.0 / 427.0	3.01	62222.16	200.509464	684.1	false
13C6-PFDA	519.0 / 474.0	3.36	59452.27	200.797860	699.3	false
13C7-PFUnA	570.0 / 525.0	3.68	56972.91	191.709038	532.5	false
13C2-PFTeDA	715.0 / 670.0	4.42	45817.88	191.554153	812.5	false
13C3-PFBS	302.0 / 99.0	1.51	25548.14	180.630908	389.0	false
13C3-PFHxS	402.0 / 99.0	2.25	18881.92	177.070112	208.0	false
13C8-PFOS	507.0 / 99.0	3.01	21140.92	191.388263	149.6	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 18/09/2018 3:39:42 PM

Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	59566.95	190.143743	658.2	false
d3-MeFOSAA	573.0 / 419.0	3.52	6567.39	147.411477	69.9	false
d5-EtFOSAA	589.0 / 419.0	3.68	7583.97	167.616960	94.5	false
13C5-PFHxA	318.0 / 273.0	1.83	53241.30	203.629477	388.9	false
13C4-PFHpA	367.0 / 322.0	2.23	58282.61	202.930309	448.2	false
13C8-PFOA	421.0 / 376.0	2.63	61620.67	202.644387	883.8	false
13C9-PFNA	472.0 / 427.0	3.01	61971.63	212.730097	749.2	false
13C6-PFDA	519.0 / 474.0	3.36	57301.42	185.867253	722.2	false
13C7-PFUnA	570.0 / 525.0	3.68	63275.25	204.481929	483.0	false
13C2-PFTeDA	715.0 / 670.0	4.42	48573.79	195.031774	884.9	false
13C3-PFBS	302.0 / 99.0	1.52	28049.50	184.757200	341.2	false
13C3-PFHxS	402.0 / 99.0	2.25	19505.44	170.411271	196.8	false
13C8-PFOS	507.0 / 99.0	3.01	20043.96	169.051275	143.5	false

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Summary Quant Report

Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.96	51515.36	211.930697	810.1	false
d3-MeFOSAA	573.0 / 419.0	3.52	6981.44	216.394864	71.0	false
d5-EtFOSAA	589.0 / 419.0	3.68	7965.64	243.111412	95.7	false
13C5-PFHxA	318.0 / 273.0	1.83	44173.34	207.638202	379.4	false
13C4-PFHpA	367.0 / 322.0	2.23	51467.43	220.239611	426.6	false
13C8-PFOA	421.0 / 376.0	2.63	57394.82	231.972187	1248.3	false
13C9-PFNA	472.0 / 427.0	3.02	49660.17	209.507353	669.1	false
13C6-PFDA	519.0 / 474.0	3.37	44902.67	187.711161	300.0	false
13C7-PFUnA	570.0 / 525.0	3.68	47002.04	195.757429	444.0	false
13C2-PFTeDA	715.0 / 670.0	4.42	40454.26	209.338055	679.8	false
13C3-PFBS	302.0 / 99.0	1.52	22702.63	206.497888	288.8	false
13C3-PFHxS	402.0 / 99.0	2.26	17651.56	212.955572	179.7	false
13C8-PFOS	507.0 / 99.0	3.01	16058.59	187.027561	129.3	false

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Summary Quant Report

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Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
13C2-PFDoA	615.0 / 570.0	3.97	57877.70	223.305536	950.8	false
d3-MeFOSAA	573.0 / 419.0	3.52	6014.71	165.504859	98.9	false
d5-EtFOSAA	589.0 / 419.0	3.68	6972.89	188.925890	116.9	false
13C5-PFHxA	318.0 / 273.0	1.83	47443.36	215.238486	485.4	false
13C4-PFHpA	367.0 / 322.0	2.23	51038.07	210.792245	432.2	false
13C8-PFOA	421.0 / 376.0	2.63	61142.22	238.507397	647.1	false
13C9-PFNA	472.0 / 427.0	3.01	61278.04	249.513120	821.5	false
13C6-PFDA	519.0 / 474.0	3.36	55019.70	215.708498	794.3	false
13C7-PFUnA	570.0 / 525.0	3.68	53219.04	207.873742	310.9	false
13C2-PFTeDA	715.0 / 670.0	4.42	43126.06	209.293022	977.5	false
13C3-PFBS	302.0 / 99.0	1.52	22851.90	184.525334	313.6	false
13C3-PFHxS	402.0 / 99.0	2.25	19537.74	209.254364	212.7	false
13C8-PFOS	507.0 / 99.0	3.01	19828.17	205.010078	139.5	false

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Summary Ion Ratio Report

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Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.55	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.310	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.410	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.04	PFNA	0.370	0.309	ü
PFOS_1	499.0 / 80.0	2.99	PFOS			
PFOS_2	499.0 / 99.0	3.04	PFOS	0.120	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.41	PFDA	0.080	0.056	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.080	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.070	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.510	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.161	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.300	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.270	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.300	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.520	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.060	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.161	
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.230	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.161	
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.300	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.300	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.170	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.570	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.310	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.300	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.170	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.150	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.500	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.580	0.296	
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.430	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.270	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.210	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Internal Standard Report

Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.55	13C3-PFBS	302.0 / 99.0	29473.65	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	29473.65	232.25
PFHxA_1	313.0 / 269.0	N/A	13C5-PFHxA	318.0 / 273.0	58581.26	250.00
PFHxA_2	313.0 / 119.0	N/A	13C5-PFHxA	318.0 / 273.0	58581.26	250.00
PFHpA_1	363.0 / 319.0	N/A	13C8-PFOA	421.0 / 376.0	74005.10	250.00
PFHpA_2	363.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	74005.10	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	21337.71	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	21337.71	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	74005.10	250.00
PFOA_2	413.0 / 169.0	2.63	13C8-PFOA	421.0 / 376.0	74005.10	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	68712.83	250.00
PFNA_2	463.0 / 219.0	3.04	13C9-PFNA	472.0 / 427.0	68712.83	250.00
PFOS_1	499.0 / 80.0	2.99	13C8-PFOS	507.0 / 99.0	23844.70	239.25
PFOS_2	499.0 / 99.0	3.04	13C8-PFOS	507.0 / 99.0	23844.70	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	68222.64	250.00
PFDA_2	513.0 / 219.0	3.41	13C6-PFDA	519.0 / 474.0	68222.64	250.00
PFUnA_1	563.0 / 519.0	N/A	13C7-PFUnA	570.0 / 525.0	68972.52	250.00
PFUnA_2	563.0 / 269.0	N/A	13C7-PFUnA	570.0 / 525.0	68972.52	250.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFDoA	615.0 / 570.0	63643.52	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	63643.52	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	50077.24	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	50077.24	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	50077.24	250.00
PFTeDA_2	713.0 / 169.0	4.44	13C2-PFTeDA	715.0 / 670.0	50077.24	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	7866.31	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	7866.31	250.00
NEtFOSAA_1	584.0 / 419.0	N/A	d5-EtFOSAA	589.0 / 419.0	8486.95	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	8486.95	250.00

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Summary Internal Standard Report

Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	23735.13	232.25
PFBS_2	298.9 / 99.0	N/A	13C3-PFBS	302.0 / 99.0	23735.13	232.25
PFHxA_1	313.0 / 269.0	N/A	13C5-PFHxA	318.0 / 273.0	49260.58	250.00
PFHxA_2	313.0 / 119.0	N/A	13C5-PFHxA	318.0 / 273.0	49260.58	250.00
PFHpA_1	363.0 / 319.0	N/A	13C8-PFOA	421.0 / 376.0	60810.31	250.00
PFHpA_2	363.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	60810.31	250.00
PFHxS_1	399.0 / 80.0	N/A	13C3-PFHxS	402.0 / 99.0	18478.02	236.50
PFHxS_2	399.0 / 99.0	N/A	13C3-PFHxS	402.0 / 99.0	18478.02	236.50
PFOA_1	413.0 / 369.0	N/A	13C8-PFOA	421.0 / 376.0	60810.31	250.00
PFOA_2	413.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	60810.31	250.00
PFNA_1	463.0 / 419.0	N/A	13C9-PFNA	472.0 / 427.0	50964.84	250.00
PFNA_2	463.0 / 219.0	N/A	13C9-PFNA	472.0 / 427.0	50964.84	250.00
PFOS_1	499.0 / 80.0	N/A	13C8-PFOS	507.0 / 99.0	20803.02	239.25
PFOS_2	499.0 / 99.0	N/A	13C8-PFOS	507.0 / 99.0	20803.02	239.25
PFDA_1	513.0 / 469.0	N/A	13C6-PFDA	519.0 / 474.0	51105.47	250.00
PFDA_2	513.0 / 219.0	N/A	13C6-PFDA	519.0 / 474.0	51105.47	250.00
PFUnA_1	563.0 / 519.0	N/A	13C7-PFUnA	570.0 / 525.0	55015.35	250.00
PFUnA_2	563.0 / 269.0	N/A	13C7-PFUnA	570.0 / 525.0	55015.35	250.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFDoA	615.0 / 570.0	52857.82	250.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFDoA	615.0 / 570.0	52857.82	250.00
PFTrDA_1	663.0 / 619.0	N/A	13C2-PFTeDA	715.0 / 670.0	44399.36	250.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	44399.36	250.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFTeDA	715.0 / 670.0	44399.36	250.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	44399.36	250.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	6217.95	250.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	6217.95	250.00
NEtFOSAA_1	584.0 / 419.0	N/A	d5-EtFOSAA	589.0 / 419.0	6614.55	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	6614.55	250.00

Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	28322.44	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	28322.44	232.25
PFHxA_1	313.0 / 269.0	1.84	13C5-PFHxA	318.0 / 273.0	62129.10	250.00
PFHxA_2	313.0 / 119.0	1.84	13C5-PFHxA	318.0 / 273.0	62129.10	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	70708.14	250.00
PFHpA_2	363.0 / 169.0	2.24	13C8-PFOA	421.0 / 376.0	70708.14	250.00
PFHxS_1	399.0 / 80.0	2.26	13C3-PFHxS	402.0 / 99.0	22622.04	236.50
PFHxS_2	399.0 / 99.0	2.26	13C3-PFHxS	402.0 / 99.0	22622.04	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	70708.14	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	70708.14	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	70833.42	250.00
PFNA_2	463.0 / 219.0	3.02	13C9-PFNA	472.0 / 427.0	70833.42	250.00
PFOS_1	499.0 / 80.0	3.02	13C8-PFOS	507.0 / 99.0	22172.22	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	22172.22	239.25
PFDA_1	513.0 / 469.0	3.37	13C6-PFDA	519.0 / 474.0	67608.20	250.00
PFDA_2	513.0 / 219.0	3.37	13C6-PFDA	519.0 / 474.0	67608.20	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	66680.35	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	66680.35	250.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFDoA	615.0 / 570.0	69223.72	250.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFDoA	615.0 / 570.0	69223.72	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	52602.56	250.00
PFTrDA_2	663.0 / 169.0	4.21	13C2-PFTeDA	715.0 / 670.0	52602.56	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	52602.56	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	52602.56	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	9159.03	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	9159.03	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	8466.11	250.00
NEtFOSAA_2	584.0 / 483.0	3.68	d5-EtFOSAA	589.0 / 419.0	8466.11	250.00

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Summary Internal Standard Report

Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	27283.92	232.25
PFBS_2	298.9 / 99.0	N/A	13C3-PFBS	302.0 / 99.0	27283.92	232.25
PFHxA_1	313.0 / 269.0	N/A	13C5-PFHxA	318.0 / 273.0	51895.87	250.00
PFHxA_2	313.0 / 119.0	N/A	13C5-PFHxA	318.0 / 273.0	51895.87	250.00
PFHpA_1	363.0 / 319.0	N/A	13C8-PFOA	421.0 / 376.0	63044.72	250.00
PFHpA_2	363.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	63044.72	250.00
PFHxS_1	399.0 / 80.0	N/A	13C3-PFHxS	402.0 / 99.0	19642.13	236.50
PFHxS_2	399.0 / 99.0	N/A	13C3-PFHxS	402.0 / 99.0	19642.13	236.50
PFOA_1	413.0 / 369.0	N/A	13C8-PFOA	421.0 / 376.0	63044.72	250.00
PFOA_2	413.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	63044.72	250.00
PFNA_1	463.0 / 419.0	N/A	13C9-PFNA	472.0 / 427.0	65190.32	250.00
PFNA_2	463.0 / 219.0	N/A	13C9-PFNA	472.0 / 427.0	65190.32	250.00
PFOS_1	499.0 / 80.0	3.02	13C8-PFOS	507.0 / 99.0	20664.73	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	20664.73	239.25
PFDA_1	513.0 / 469.0	N/A	13C6-PFDA	519.0 / 474.0	57760.55	250.00
PFDA_2	513.0 / 219.0	N/A	13C6-PFDA	519.0 / 474.0	57760.55	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	60327.30	250.00
PFUnA_2	563.0 / 269.0	N/A	13C7-PFUnA	570.0 / 525.0	60327.30	250.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFDoA	615.0 / 570.0	57388.11	250.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFDoA	615.0 / 570.0	57388.11	250.00
PFTrDA_1	663.0 / 619.0	4.21	13C2-PFTeDA	715.0 / 670.0	47994.37	250.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	47994.37	250.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFTeDA	715.0 / 670.0	47994.37	250.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	47994.37	250.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	6635.00	250.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	6635.00	250.00
NEtFOSAA_1	584.0 / 419.0	N/A	d5-EtFOSAA	589.0 / 419.0	9721.92	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	9721.92	250.00

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Summary Internal Standard Report

Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	25548.14	232.25
PFBS_2	298.9 / 99.0	N/A	13C3-PFBS	302.0 / 99.0	25548.14	232.25
PFHxA_1	313.0 / 269.0	N/A	13C5-PFHxA	318.0 / 273.0	52276.24	250.00
PFHxA_2	313.0 / 119.0	N/A	13C5-PFHxA	318.0 / 273.0	52276.24	250.00
PFHpA_1	363.0 / 319.0	N/A	13C8-PFOA	421.0 / 376.0	64753.75	250.00
PFHpA_2	363.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	64753.75	250.00
PFHxS_1	399.0 / 80.0	N/A	13C3-PFHxS	402.0 / 99.0	18881.92	236.50
PFHxS_2	399.0 / 99.0	N/A	13C3-PFHxS	402.0 / 99.0	18881.92	236.50
PFOA_1	413.0 / 369.0	N/A	13C8-PFOA	421.0 / 376.0	64753.75	250.00
PFOA_2	413.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	64753.75	250.00
PFNA_1	463.0 / 419.0	N/A	13C9-PFNA	472.0 / 427.0	62222.16	250.00
PFNA_2	463.0 / 219.0	N/A	13C9-PFNA	472.0 / 427.0	62222.16	250.00
PFOS_1	499.0 / 80.0	3.02	13C8-PFOS	507.0 / 99.0	22101.26	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	22101.26	239.25
PFDA_1	513.0 / 469.0	N/A	13C6-PFDA	519.0 / 474.0	59452.27	250.00
PFDA_2	513.0 / 219.0	N/A	13C6-PFDA	519.0 / 474.0	59452.27	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	56972.91	250.00
PFUnA_2	563.0 / 269.0	N/A	13C7-PFUnA	570.0 / 525.0	56972.91	250.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFDoA	615.0 / 570.0	57721.86	250.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFDoA	615.0 / 570.0	57721.86	250.00
PFTrDA_1	663.0 / 619.0	4.21	13C2-PFTeDA	715.0 / 670.0	45817.88	250.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	45817.88	250.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFTeDA	715.0 / 670.0	45817.88	250.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	45817.88	250.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	6715.87	250.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	6715.87	250.00
NEtFOSAA_1	584.0 / 419.0	N/A	d5-EtFOSAA	589.0 / 419.0	7786.29	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	7786.29	250.00

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Summary Internal Standard Report

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Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	13C3-PFBS	302.0 / 99.0	28049.50	232.25
PFBS_2	298.9 / 99.0	1.53	13C3-PFBS	302.0 / 99.0	28049.50	232.25
PFHxA_1	313.0 / 269.0	1.84	13C5-PFHxA	318.0 / 273.0	53241.30	250.00
PFHxA_2	313.0 / 119.0	1.84	13C5-PFHxA	318.0 / 273.0	53241.30	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	62151.65	250.00
PFHpA_2	363.0 / 169.0	2.24	13C8-PFOA	421.0 / 376.0	62151.65	250.00
PFHxS_1	399.0 / 80.0	2.26	13C3-PFHxS	402.0 / 99.0	19505.44	236.50
PFHxS_2	399.0 / 99.0	2.26	13C3-PFHxS	402.0 / 99.0	19505.44	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	62151.65	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	62151.65	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	61971.63	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	61971.63	250.00
PFOS_1	499.0 / 80.0	3.02	13C8-PFOS	507.0 / 99.0	19894.65	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	19894.65	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	57301.42	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	57301.42	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	63275.25	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	63275.25	250.00
PFDoA_1	613.0 / 569.0	3.97	13C2-PFDoA	615.0 / 570.0	59566.95	250.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFDoA	615.0 / 570.0	59566.95	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	48573.79	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	48573.79	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	48573.79	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	48573.79	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	6567.39	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	6567.39	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	7583.97	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	7583.97	250.00

Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	22702.63	232.25
PFBS_2	298.9 / 99.0	1.54	13C3-PFBS	302.0 / 99.0	22702.63	232.25
PFHxA_1	313.0 / 269.0	1.85	13C5-PFHxA	318.0 / 273.0	44173.34	250.00
PFHxA_2	313.0 / 119.0	1.85	13C5-PFHxA	318.0 / 273.0	44173.34	250.00
PFHpA_1	363.0 / 319.0	2.24	13C8-PFOA	421.0 / 376.0	57868.79	250.00
PFHpA_2	363.0 / 169.0	2.25	13C8-PFOA	421.0 / 376.0	57868.79	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	17651.56	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	17651.56	236.50
PFOA_1	413.0 / 369.0	2.64	13C8-PFOA	421.0 / 376.0	57868.79	250.00
PFOA_2	413.0 / 169.0	2.64	13C8-PFOA	421.0 / 376.0	57868.79	250.00
PFNA_1	463.0 / 419.0	3.03	13C9-PFNA	472.0 / 427.0	49660.17	250.00
PFNA_2	463.0 / 219.0	3.03	13C9-PFNA	472.0 / 427.0	49660.17	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	16611.28	239.25
PFOS_2	499.0 / 99.0	3.03	13C8-PFOS	507.0 / 99.0	16611.28	239.25
PFDA_1	513.0 / 469.0	3.38	13C6-PFDA	519.0 / 474.0	44902.67	250.00
PFDA_2	513.0 / 219.0	3.38	13C6-PFDA	519.0 / 474.0	44902.67	250.00
PFUnA_1	563.0 / 519.0	3.69	13C7-PFUnA	570.0 / 525.0	47002.04	250.00
PFUnA_2	563.0 / 269.0	3.69	13C7-PFUnA	570.0 / 525.0	47002.04	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	51515.36	250.00
PFDoA_2	613.0 / 319.0	3.97	13C2-PFDoA	615.0 / 570.0	51515.36	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	40454.26	250.00
PFTrDA_2	663.0 / 169.0	4.22	13C2-PFTeDA	715.0 / 670.0	40454.26	250.00
PFTeDA_1	713.0 / 669.0	4.43	13C2-PFTeDA	715.0 / 670.0	40454.26	250.00
PFTeDA_2	713.0 / 169.0	4.43	13C2-PFTeDA	715.0 / 670.0	40454.26	250.00
NMeFOSAA_1	570.0 / 419.0	3.53	d3-MeFOSAA	573.0 / 419.0	6981.44	250.00
NMeFOSAA_2	570.0 / 512.0	3.53	d3-MeFOSAA	573.0 / 419.0	6981.44	250.00
NEtFOSAA_1	584.0 / 419.0	3.69	d5-EtFOSAA	589.0 / 419.0	7965.64	250.00
NEtFOSAA_2	584.0 / 483.0	3.69	d5-EtFOSAA	589.0 / 419.0	7965.64	250.00

Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	22851.90	232.25
PFBS_2	298.9 / 99.0	1.51	13C3-PFBS	302.0 / 99.0	22851.90	232.25
PFHxA_1	313.0 / 269.0	N/A	13C5-PFHxA	318.0 / 273.0	47443.36	250.00
PFHxA_2	313.0 / 119.0	N/A	13C5-PFHxA	318.0 / 273.0	47443.36	250.00
PFHpA_1	363.0 / 319.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFHpA_2	363.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	19537.74	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	19537.74	236.50
PFOA_1	413.0 / 369.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFOA_2	413.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFNA_1	463.0 / 419.0	N/A	13C9-PFNA	472.0 / 427.0	61278.04	250.00
PFNA_2	463.0 / 219.0	N/A	13C9-PFNA	472.0 / 427.0	61278.04	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	20680.55	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	20680.55	239.25
PFDA_1	513.0 / 469.0	N/A	13C6-PFDA	519.0 / 474.0	55019.70	250.00
PFDA_2	513.0 / 219.0	N/A	13C6-PFDA	519.0 / 474.0	55019.70	250.00
PFUnA_1	563.0 / 519.0	3.70	13C7-PFUnA	570.0 / 525.0	53219.04	250.00
PFUnA_2	563.0 / 269.0	N/A	13C7-PFUnA	570.0 / 525.0	53219.04	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	57877.70	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	57877.70	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	6014.71	250.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	6014.71	250.00
NEtFOSAA_1	584.0 / 419.0	N/A	d5-EtFOSAA	589.0 / 419.0	6972.89	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	6972.89	250.00

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Summary Internal Standard Report

Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	65007.41	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	23110.50	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	23110.50	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	67042.08	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	67042.08	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	67042.08	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	67042.08	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	65007.41	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	65007.41	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	65007.41	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	23110.50	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	23110.50	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	23110.50	239.25

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Summary Internal Standard Report

Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	53362.00	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	18960.01	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	18960.01	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	54843.84	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	54843.84	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	54843.84	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	54843.84	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	53362.00	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	53362.00	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	53362.00	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	18960.01	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	18960.01	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	18960.01	239.25

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Summary Internal Standard Report

Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	73500.53	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	25609.45	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	25609.45	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	71288.82	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	71288.82	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	71288.82	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	71288.82	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	73500.53	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	73500.53	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	73500.53	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	25609.45	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	25609.45	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	25609.45	239.25

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Summary Internal Standard Report

Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	68465.72	250.00
d3-MeFOSAA	573.0 / 419.0	3.51	13C4-PFOS	503.0 / 99.0	19367.47	239.25
d5-EtFOSAA	589.0 / 419.0	3.67	13C4-PFOS	503.0 / 99.0	19367.47	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	61530.71	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	61530.71	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	61530.71	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	61530.71	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	68465.72	250.00
13C7-PFUnA	570.0 / 525.0	3.67	13C2-PFDA	515.0 / 470.0	68465.72	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	68465.72	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	19367.47	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	19367.47	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	19367.47	239.25

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Summary Internal Standard Report

Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	72325.26	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	25859.82	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	25859.82	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	76087.25	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	76087.25	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	76087.25	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	76087.25	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	72325.26	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	72325.26	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	72325.26	250.00
13C3-PFBS	302.0 / 99.0	1.51	13C4-PFOS	503.0 / 99.0	25859.82	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	25859.82	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	25859.82	239.25

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Summary Internal Standard Report

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Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	75308.36	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	27757.61	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	27757.61	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	71427.53	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	71427.53	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	71427.53	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	71427.53	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	75308.36	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	75308.36	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	75308.36	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	27757.61	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	27757.61	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	27757.61	239.25

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Summary Internal Standard Report

Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.96	13C2-PFDA	515.0 / 470.0	58433.60	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	20101.05	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	20101.05	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	58117.99	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	58117.99	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	58117.99	250.00
13C9-PFNA	472.0 / 427.0	3.02	13C2-PFOA	415.0 / 370.0	58117.99	250.00
13C6-PFDA	519.0 / 474.0	3.37	13C2-PFDA	515.0 / 470.0	58433.60	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	58433.60	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	58433.60	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	20101.05	239.25
13C3-PFHxS	402.0 / 99.0	2.26	13C4-PFOS	503.0 / 99.0	20101.05	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	20101.05	239.25

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Summary Internal Standard Report

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Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
13C2-PFDoA	615.0 / 570.0	3.97	13C2-PFDA	515.0 / 470.0	62306.25	250.00
d3-MeFOSAA	573.0 / 419.0	3.52	13C4-PFOS	503.0 / 99.0	22642.51	239.25
d5-EtFOSAA	589.0 / 419.0	3.68	13C4-PFOS	503.0 / 99.0	22642.51	239.25
13C5-PFHxA	318.0 / 273.0	1.83	13C2-PFOA	415.0 / 370.0	60216.17	250.00
13C4-PFHpA	367.0 / 322.0	2.23	13C2-PFOA	415.0 / 370.0	60216.17	250.00
13C8-PFOA	421.0 / 376.0	2.63	13C2-PFOA	415.0 / 370.0	60216.17	250.00
13C9-PFNA	472.0 / 427.0	3.01	13C2-PFOA	415.0 / 370.0	60216.17	250.00
13C6-PFDA	519.0 / 474.0	3.36	13C2-PFDA	515.0 / 470.0	62306.25	250.00
13C7-PFUnA	570.0 / 525.0	3.68	13C2-PFDA	515.0 / 470.0	62306.25	250.00
13C2-PFTeDA	715.0 / 670.0	4.42	13C2-PFDA	515.0 / 470.0	62306.25	250.00
13C3-PFBS	302.0 / 99.0	1.52	13C4-PFOS	503.0 / 99.0	22642.51	239.25
13C3-PFHxS	402.0 / 99.0	2.25	13C4-PFOS	503.0 / 99.0	22642.51	239.25
13C8-PFOS	507.0 / 99.0	3.01	13C4-PFOS	503.0 / 99.0	22642.51	239.25

Chromatograms

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Chromatogram Report

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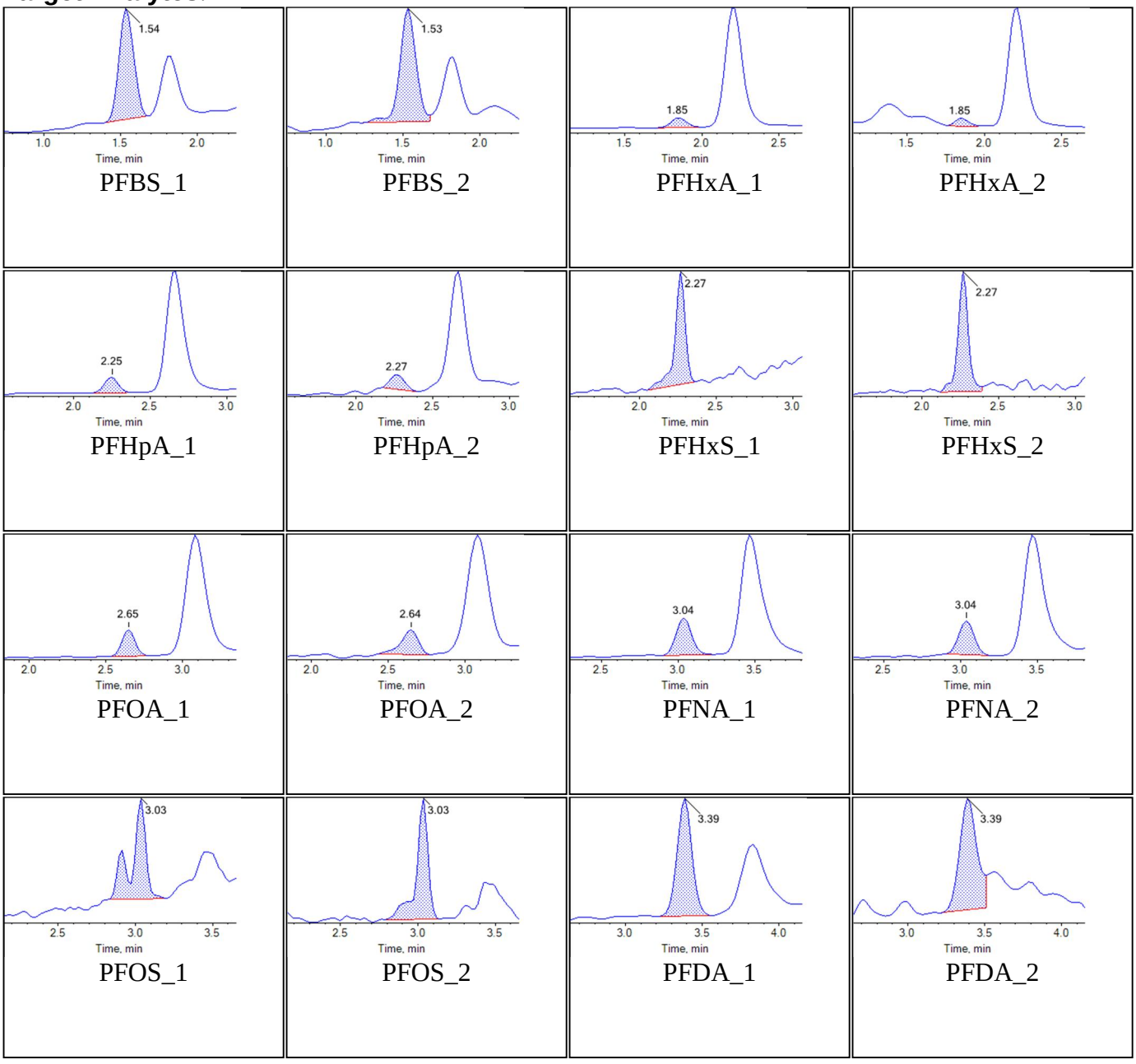
Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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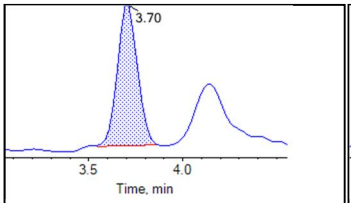
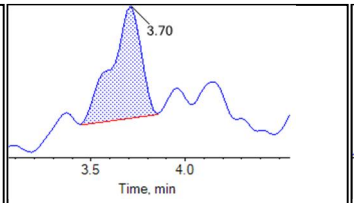
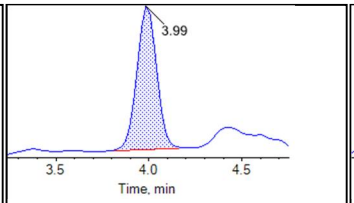


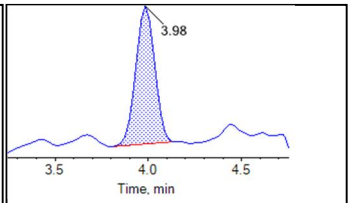
PFUnA_1



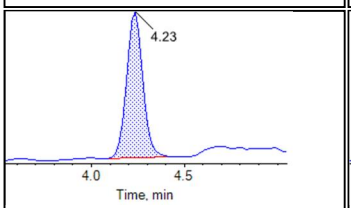
PFUnA_2



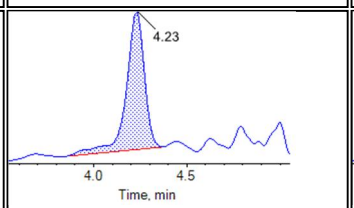
PFDoA_1



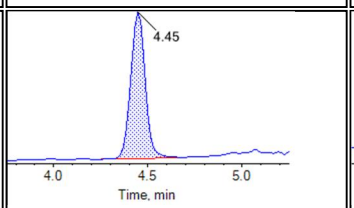
PFDoA_2



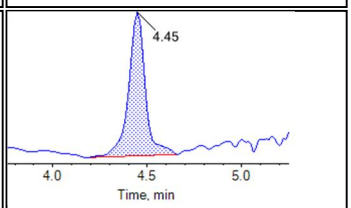
PFTrDA_1



PFTrDA_2



PFTeDA_1



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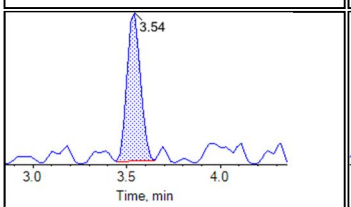

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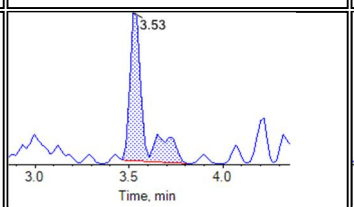
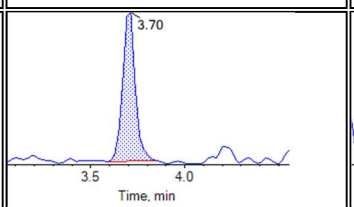


NMeFOSAA_2



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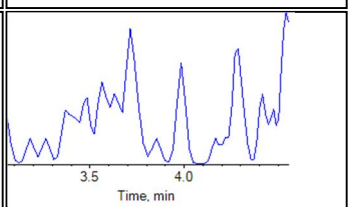
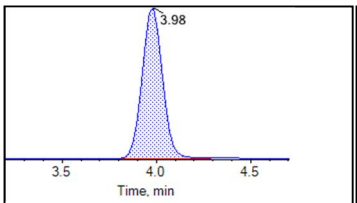
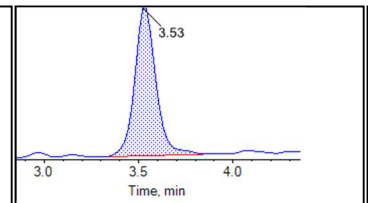


NEtFOSAA_2

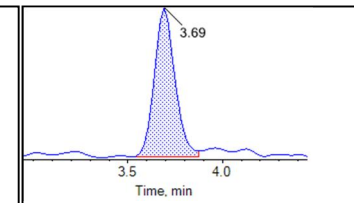
Internal Standards:



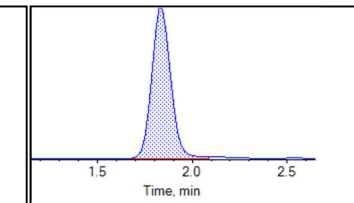
13C2-PFDoA



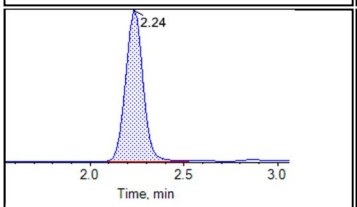
d3-MeFOSAA



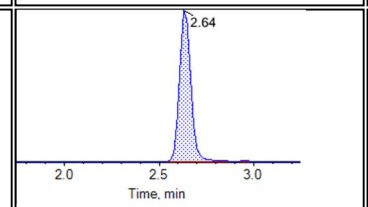
d5-EtFOSAA



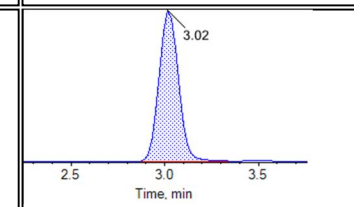
13C5-PFHxA



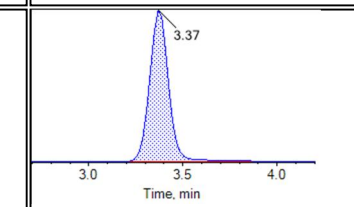
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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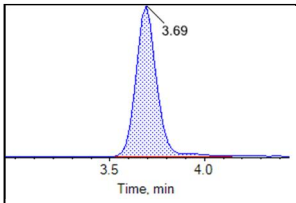
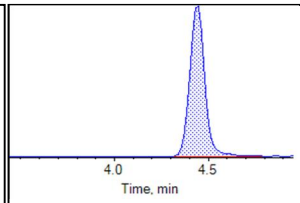
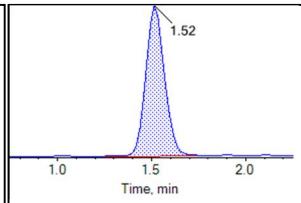


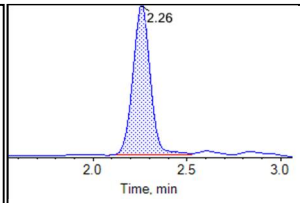
13C7-PFUnA



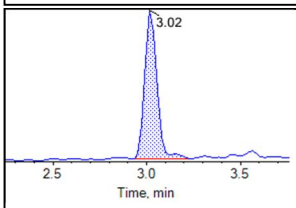
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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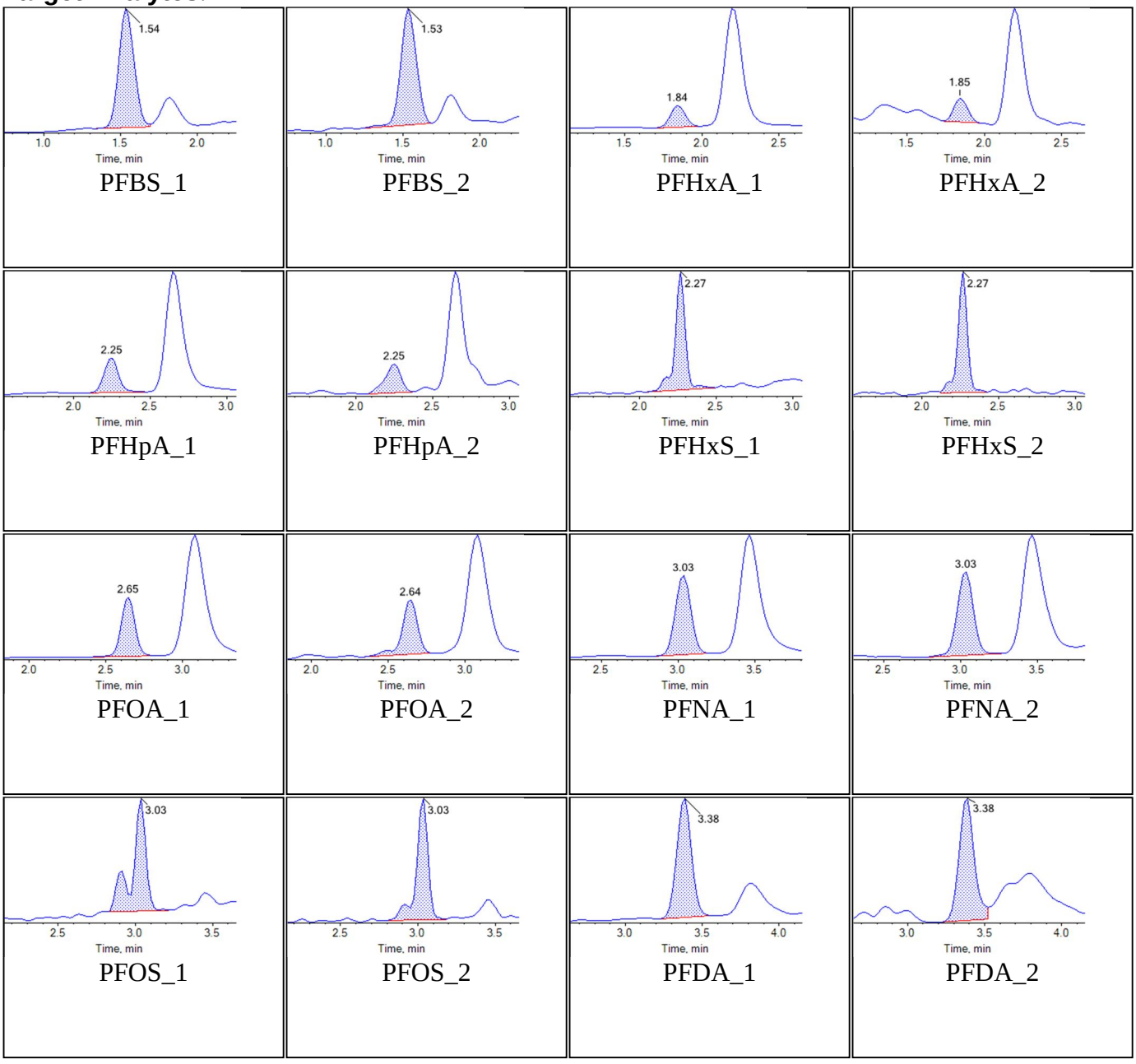
Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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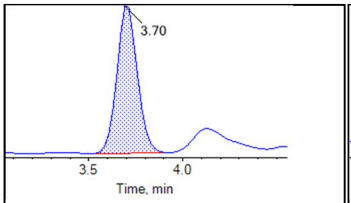
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:43:54 PM



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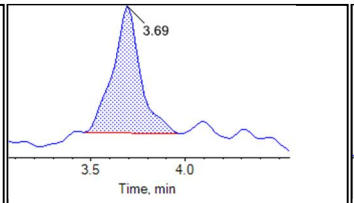
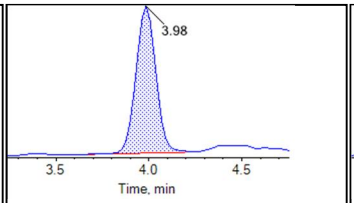
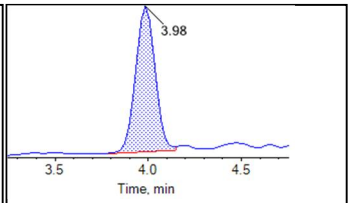


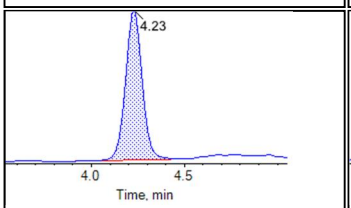
PFUnA_2



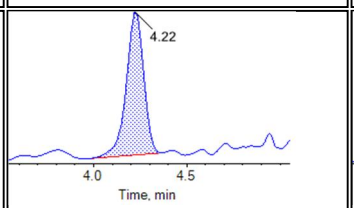
PFDoA_1



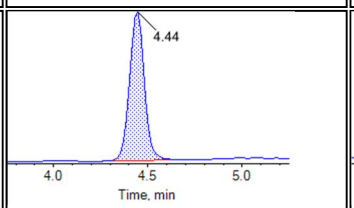
PFDoA_2



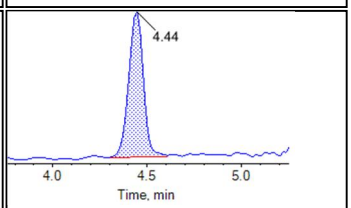
PFTrDA_1



PFTrDA_2



PFTeDA_1



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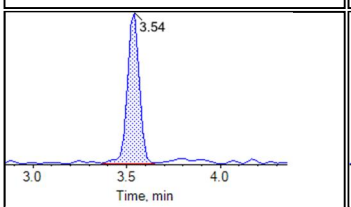

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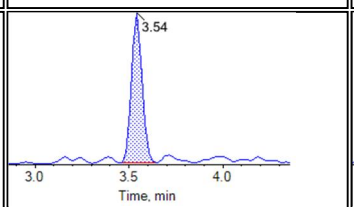

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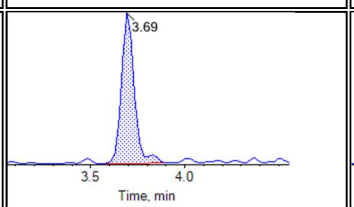

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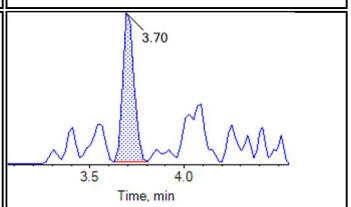

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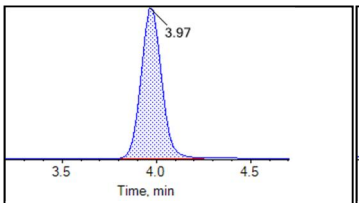
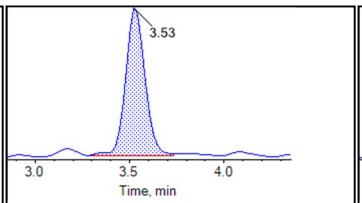
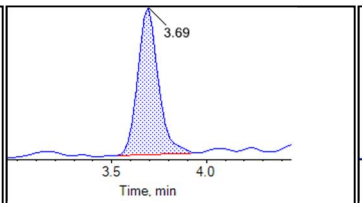


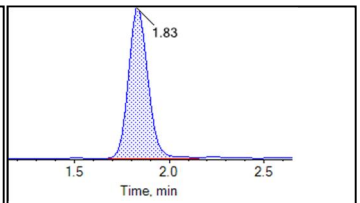
13C2-PFDoA



d3-MeFOSAA



d5-EtFOSAA



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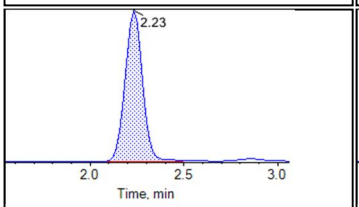
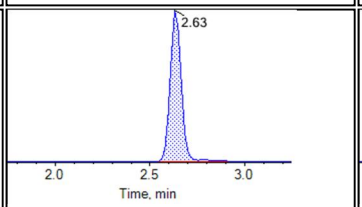
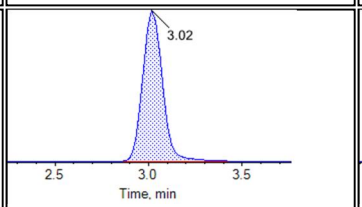


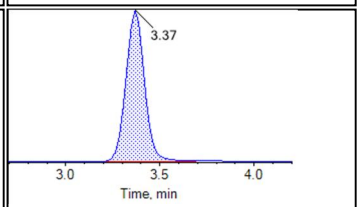
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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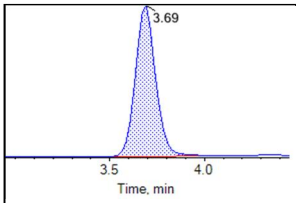
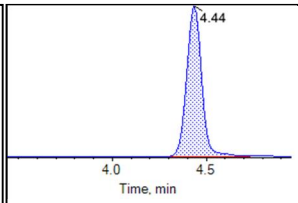


13C7-PFUnA



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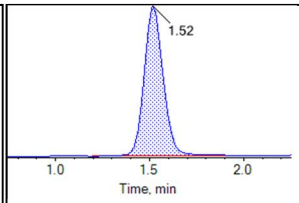
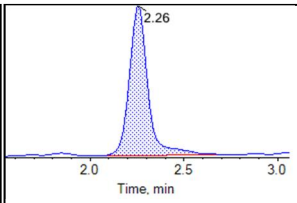


13C3-PFBS



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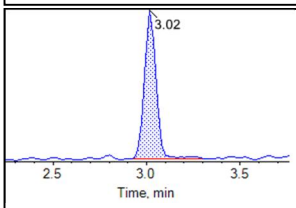

13C8-PFOS

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Chromatogram Report

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Printed: 18/09/2018 3:43:59 PM

Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

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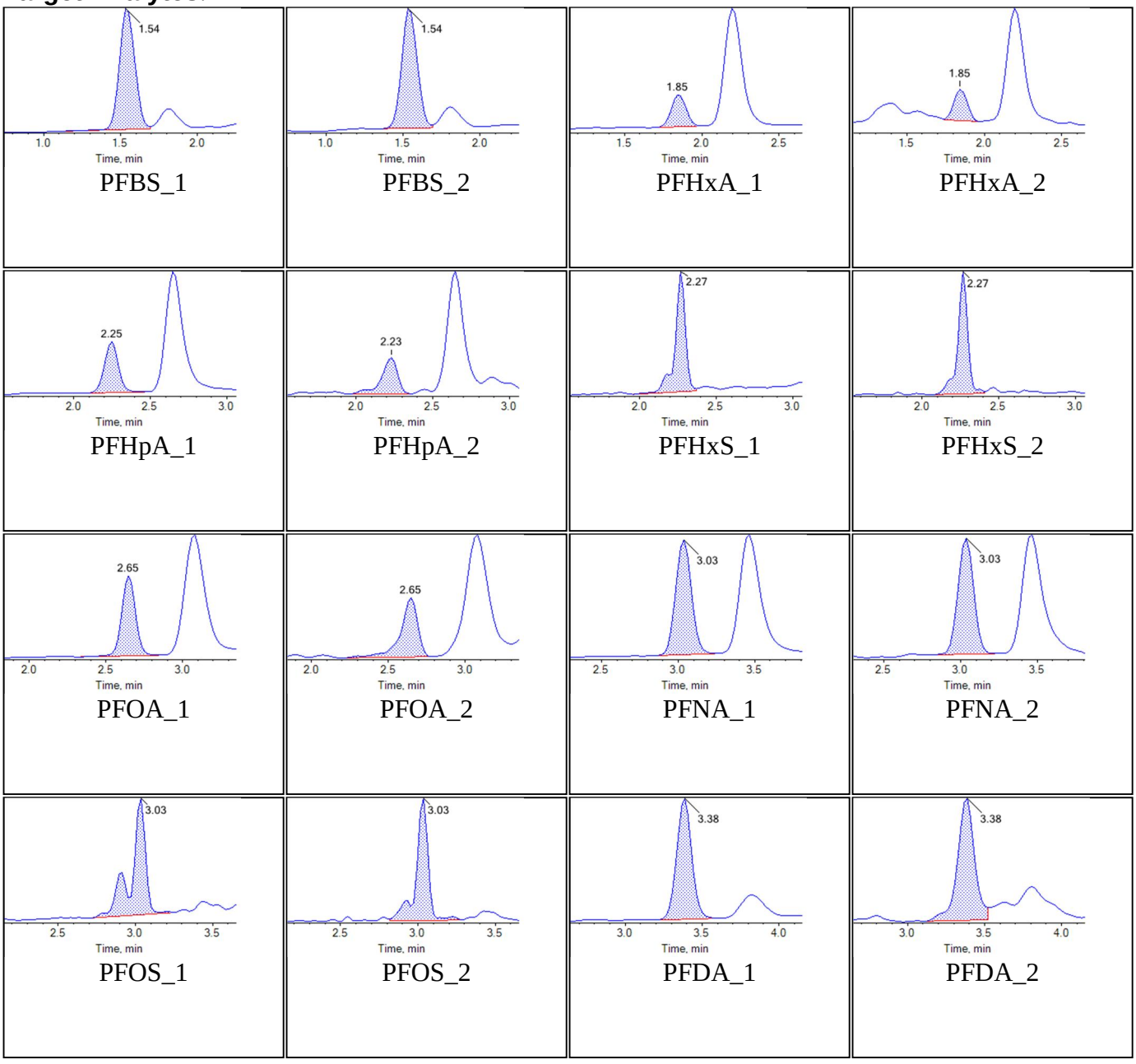

BATTELLE

Chromatogram Report

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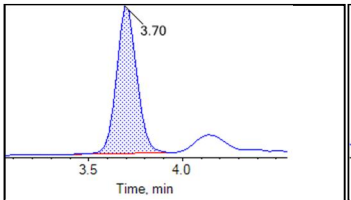

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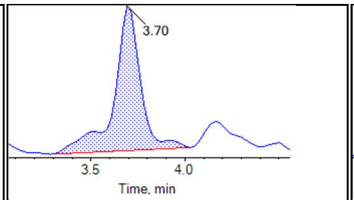
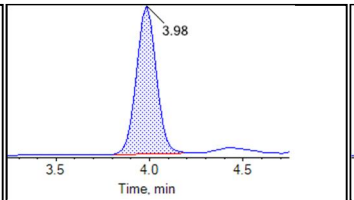


PFUnA_2



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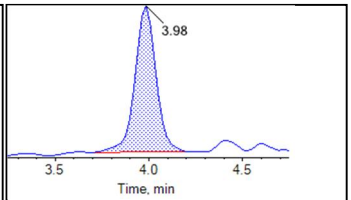

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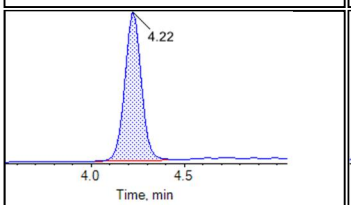

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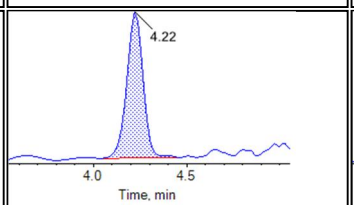

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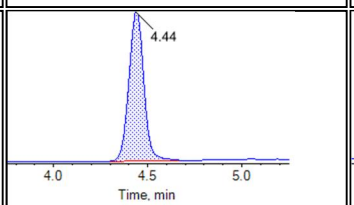

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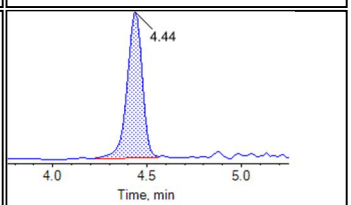

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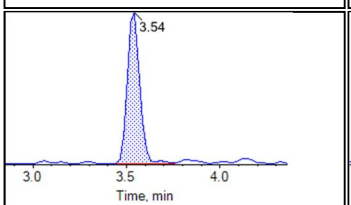

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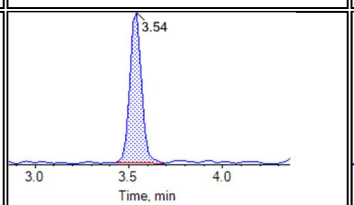

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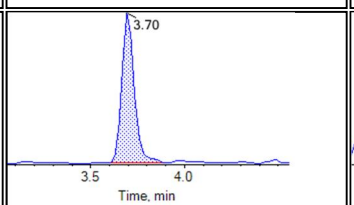

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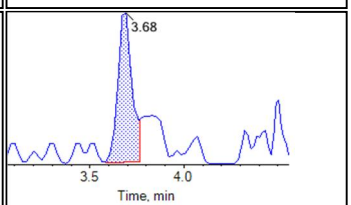

NEtFOSAA_2

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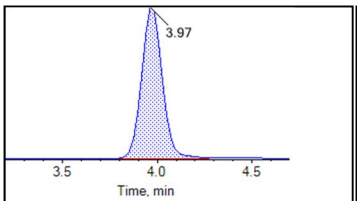

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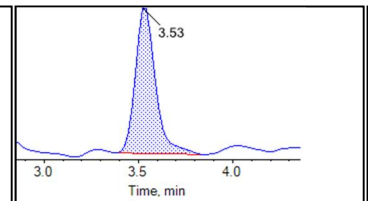
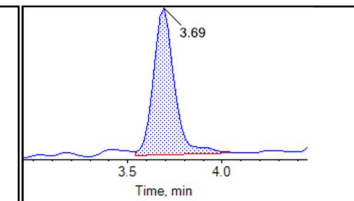
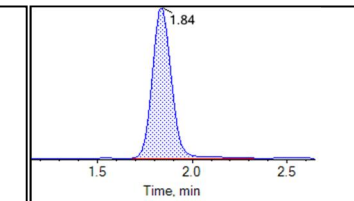


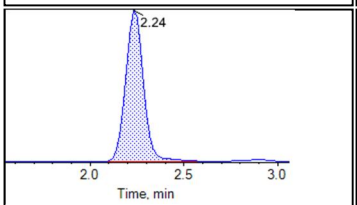
d3-MeFOSAA



d5-EtFOSAA



13C5-PFHxA



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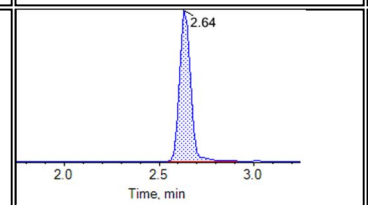
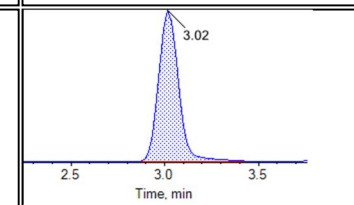
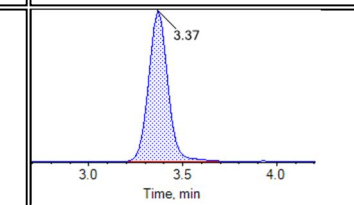


13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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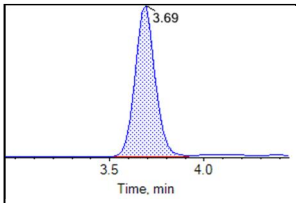
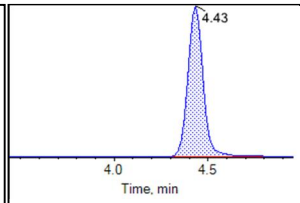
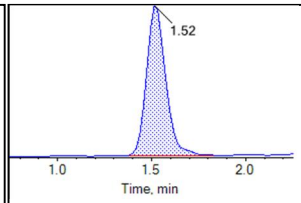


13C7-PFUnA



13C2-PFTeDA



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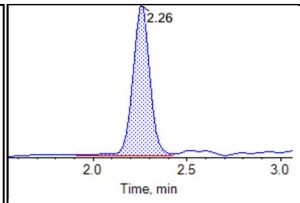

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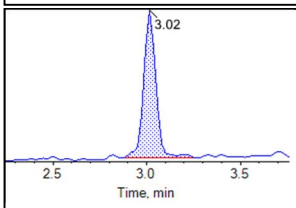

13C8-PFOS

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Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:44:04 PM

Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

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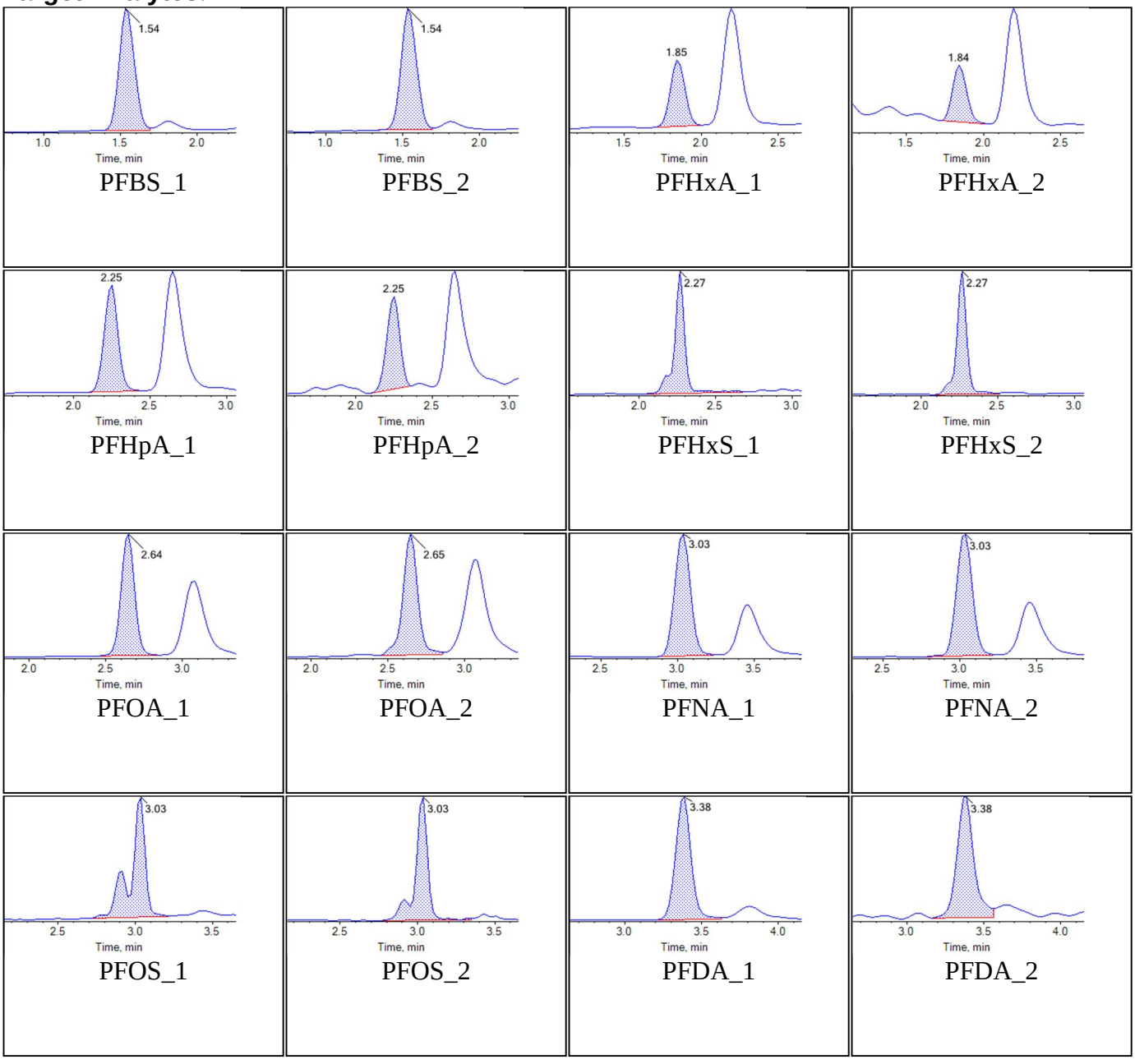

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Chromatogram Report

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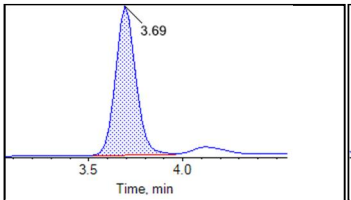
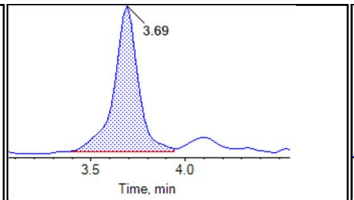
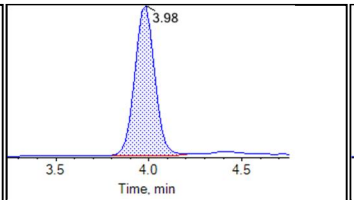
Printed: 18/09/2018 3:44:04 PM



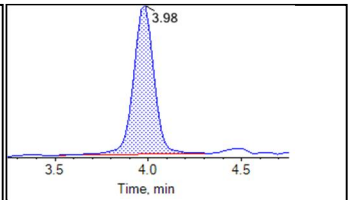
PFUnA_1



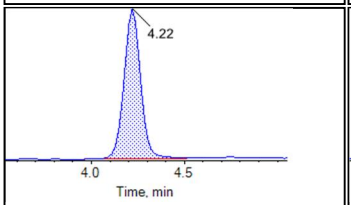
PFUnA_2



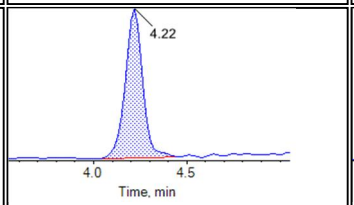
PFDoA_1



PFDoA_2



PFTrDA_1



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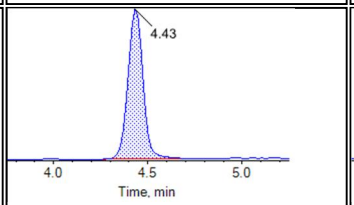

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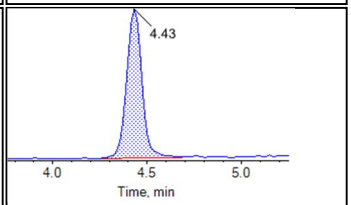

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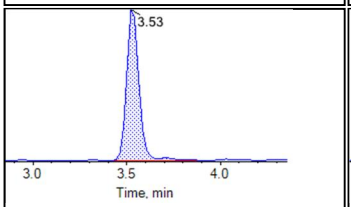

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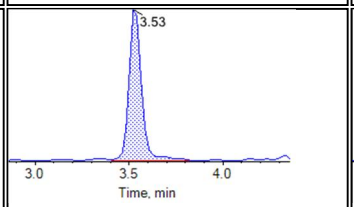

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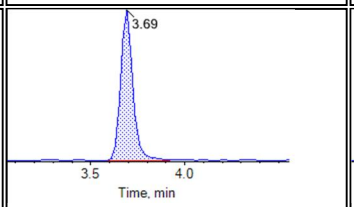

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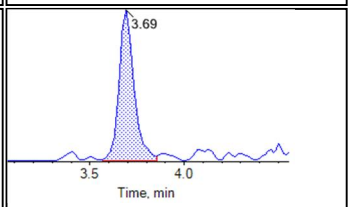

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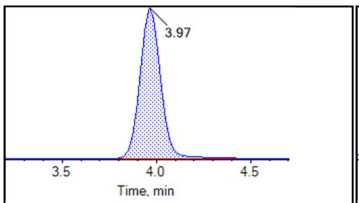
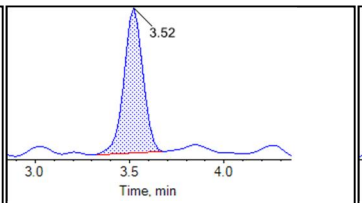
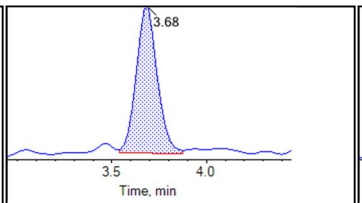


13C2-PFDoA



d3-MeFOSAA



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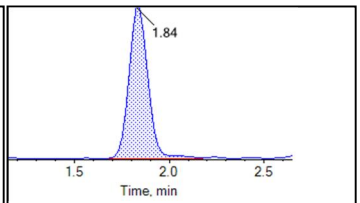
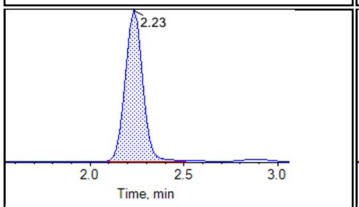


13C5-PFHxA



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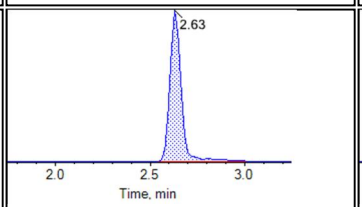
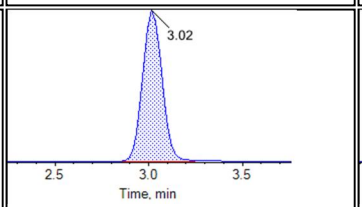
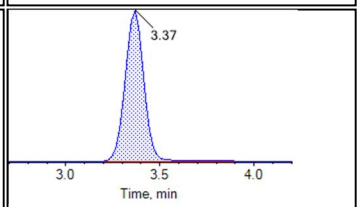


13C8-PFOA



13C9-PFNA



13C6-PFDA

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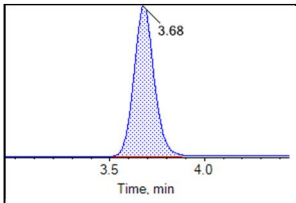
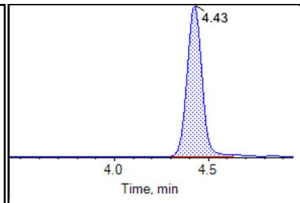
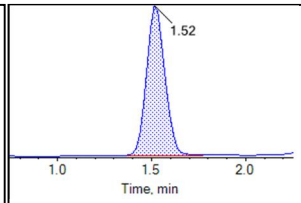


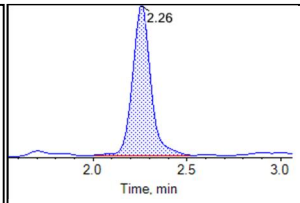
13C7-PFUnA



13C2-PFTeDA



13C3-PFBS



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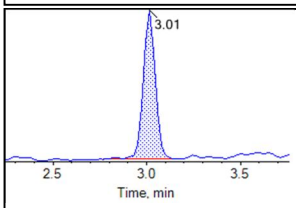

13C8-PFOS

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Chromatogram Report

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Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

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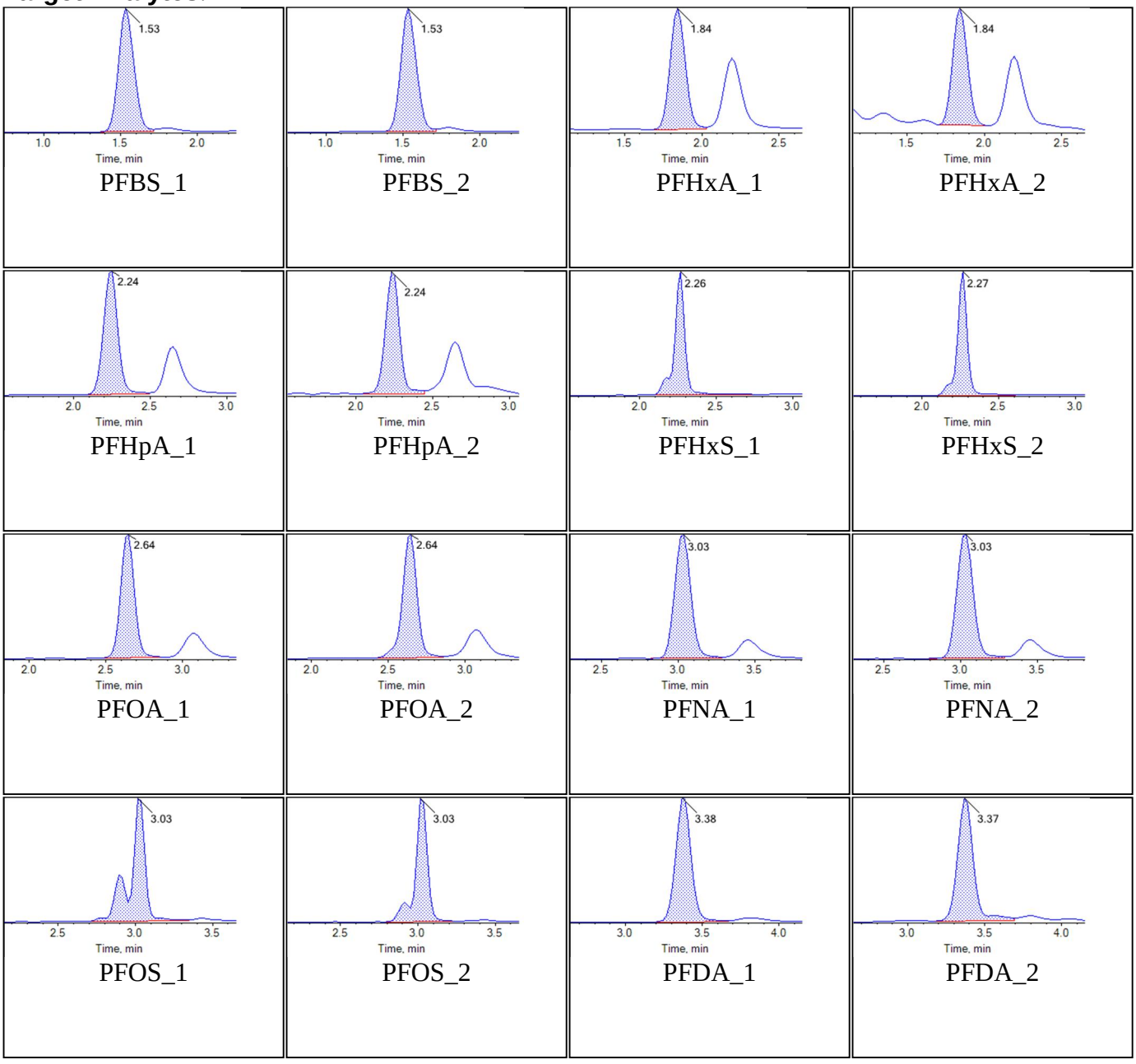

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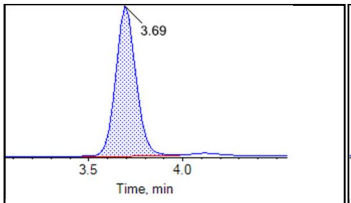

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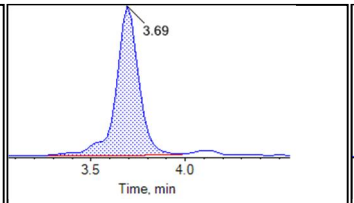

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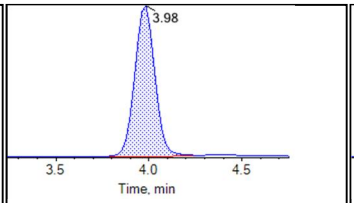

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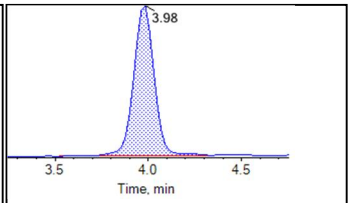

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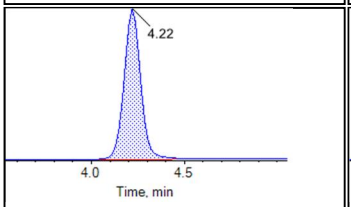

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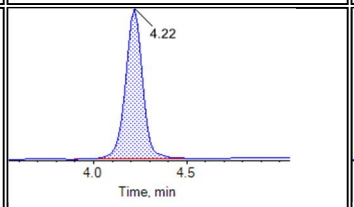

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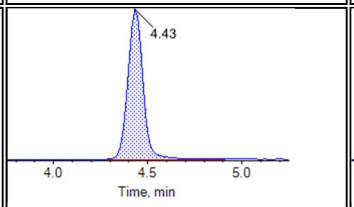

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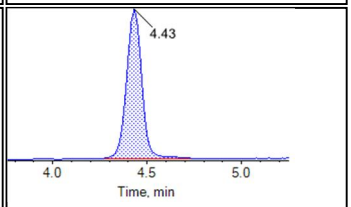

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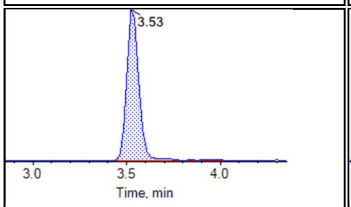

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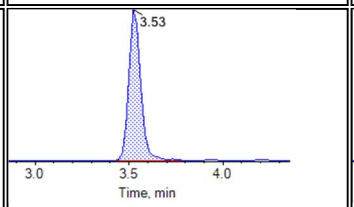

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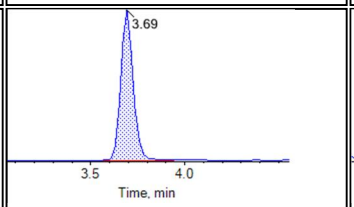

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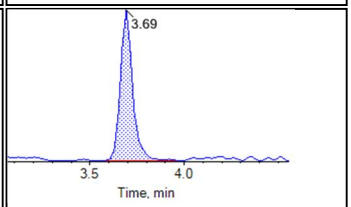

NEtFOSAA_2

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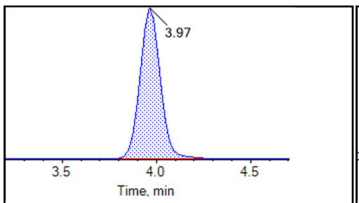

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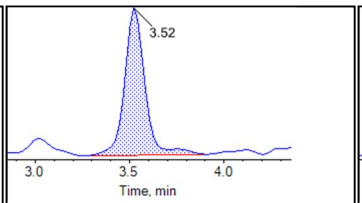
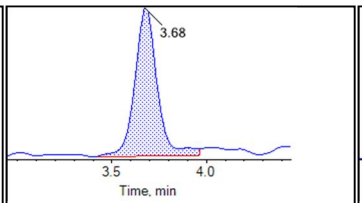
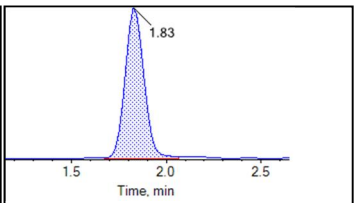


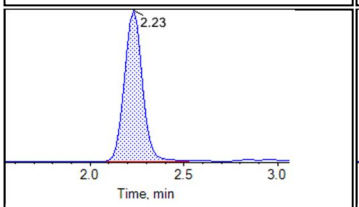
d3-MeFOSAA



d5-EtFOSAA



13C5-PFHxA



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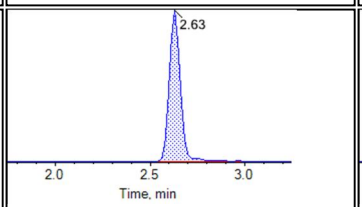
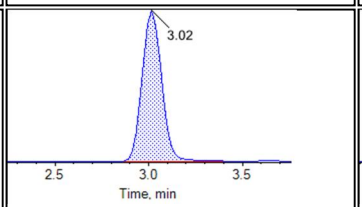
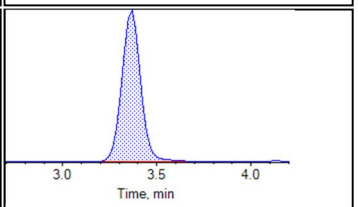


13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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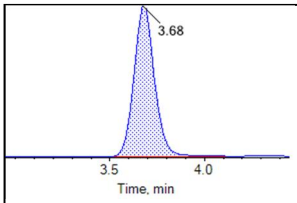
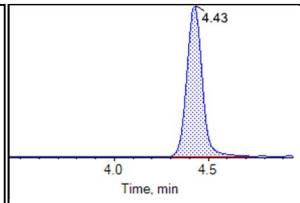
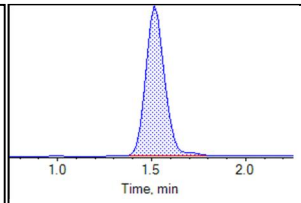


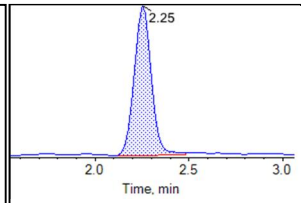
13C7-PFUnA



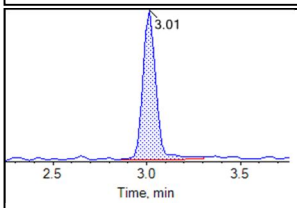
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:44:14 PM

Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

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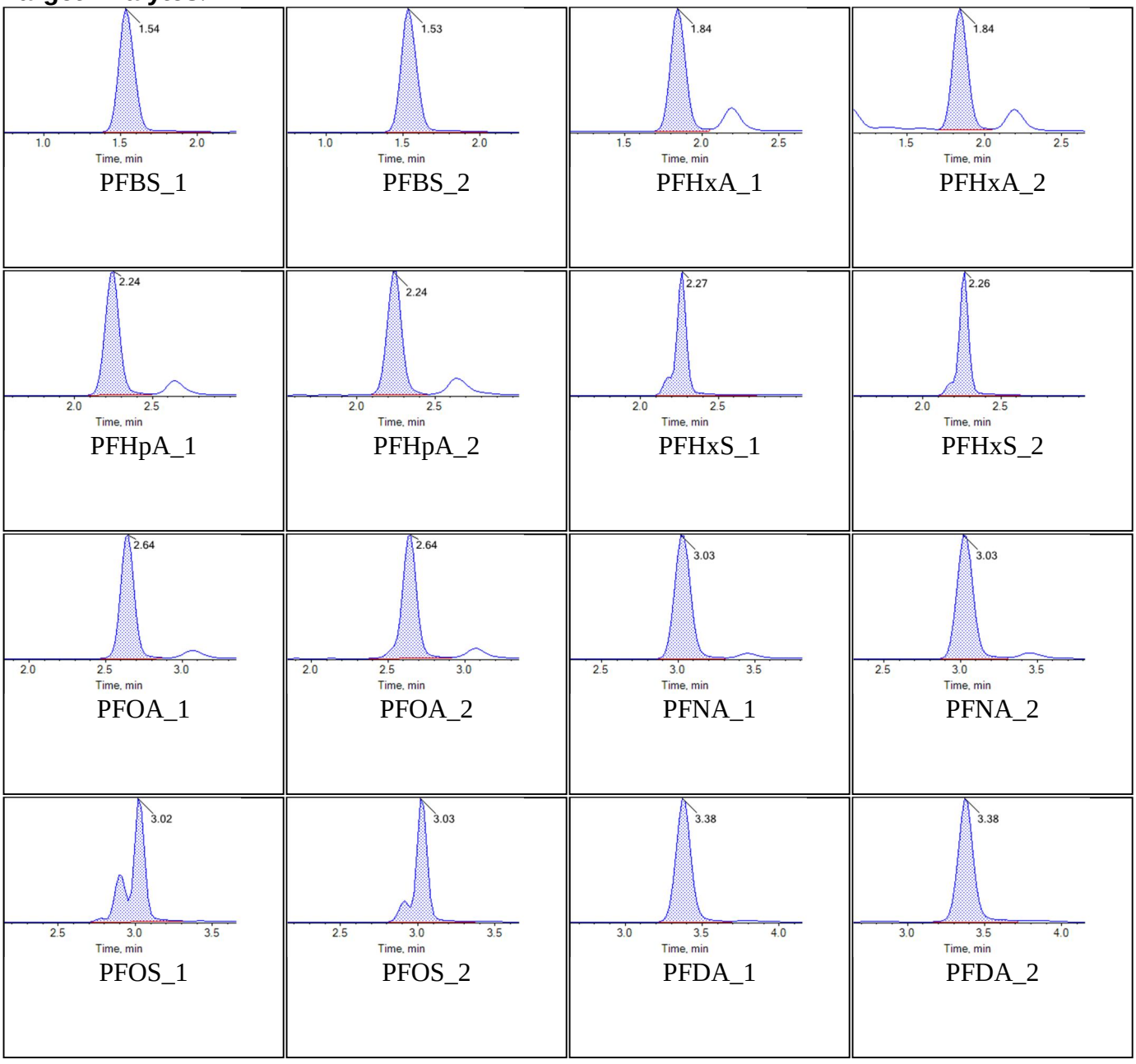

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Chromatogram Report

Created with Analyst Reporter
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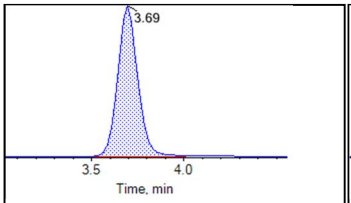
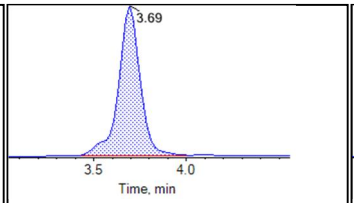
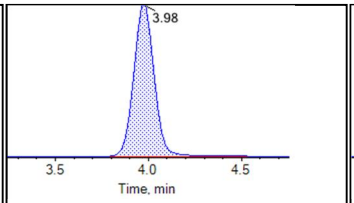


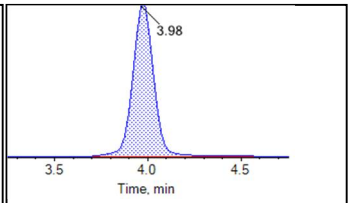
PFUnA_1



PFUnA_2



PFDoA_1



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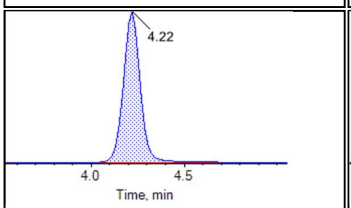

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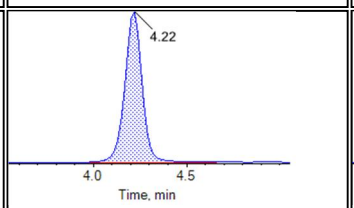

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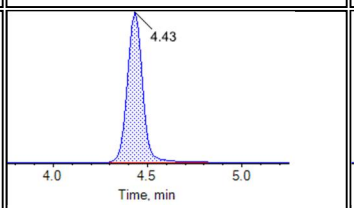

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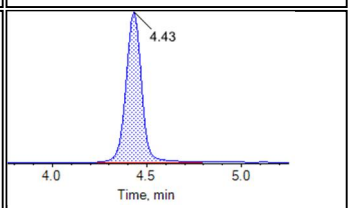

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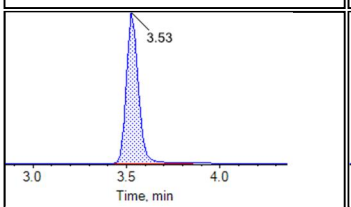

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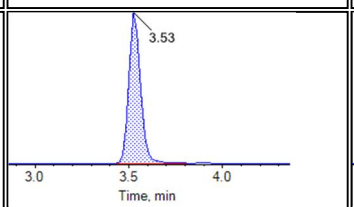

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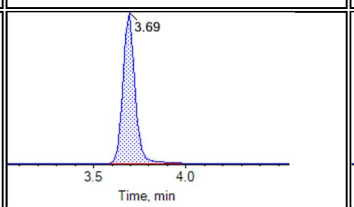

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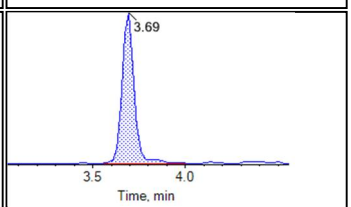

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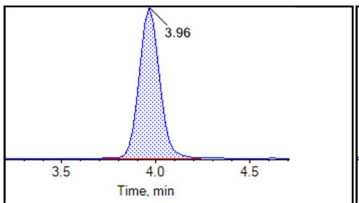
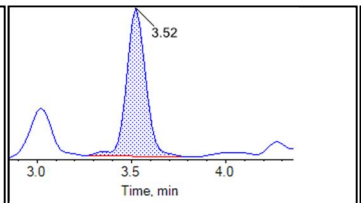
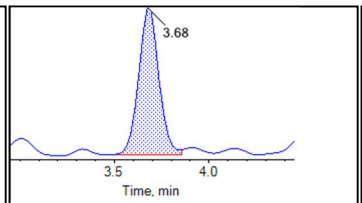


13C2-PFDoA



d3-MeFOSAA



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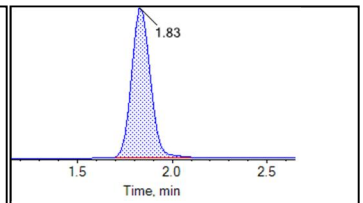

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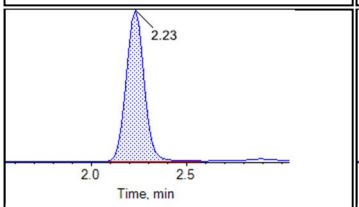
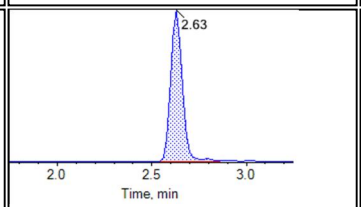
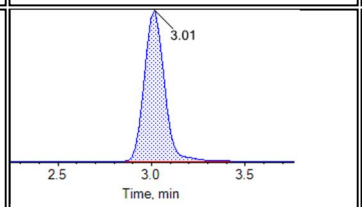


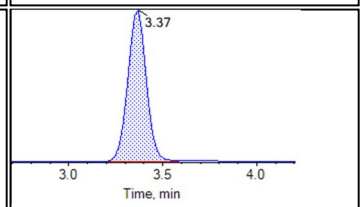
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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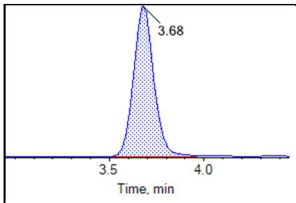
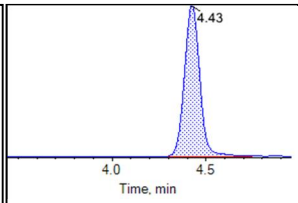


13C7-PFUnA



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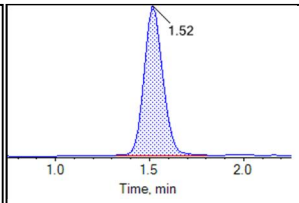
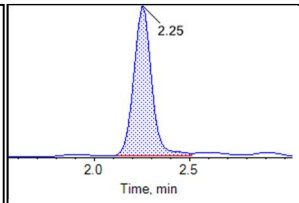


13C3-PFBS



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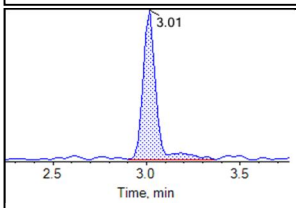

13C8-PFOS

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Chromatogram Report

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Printed: 18/09/2018 3:44:19 PM

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

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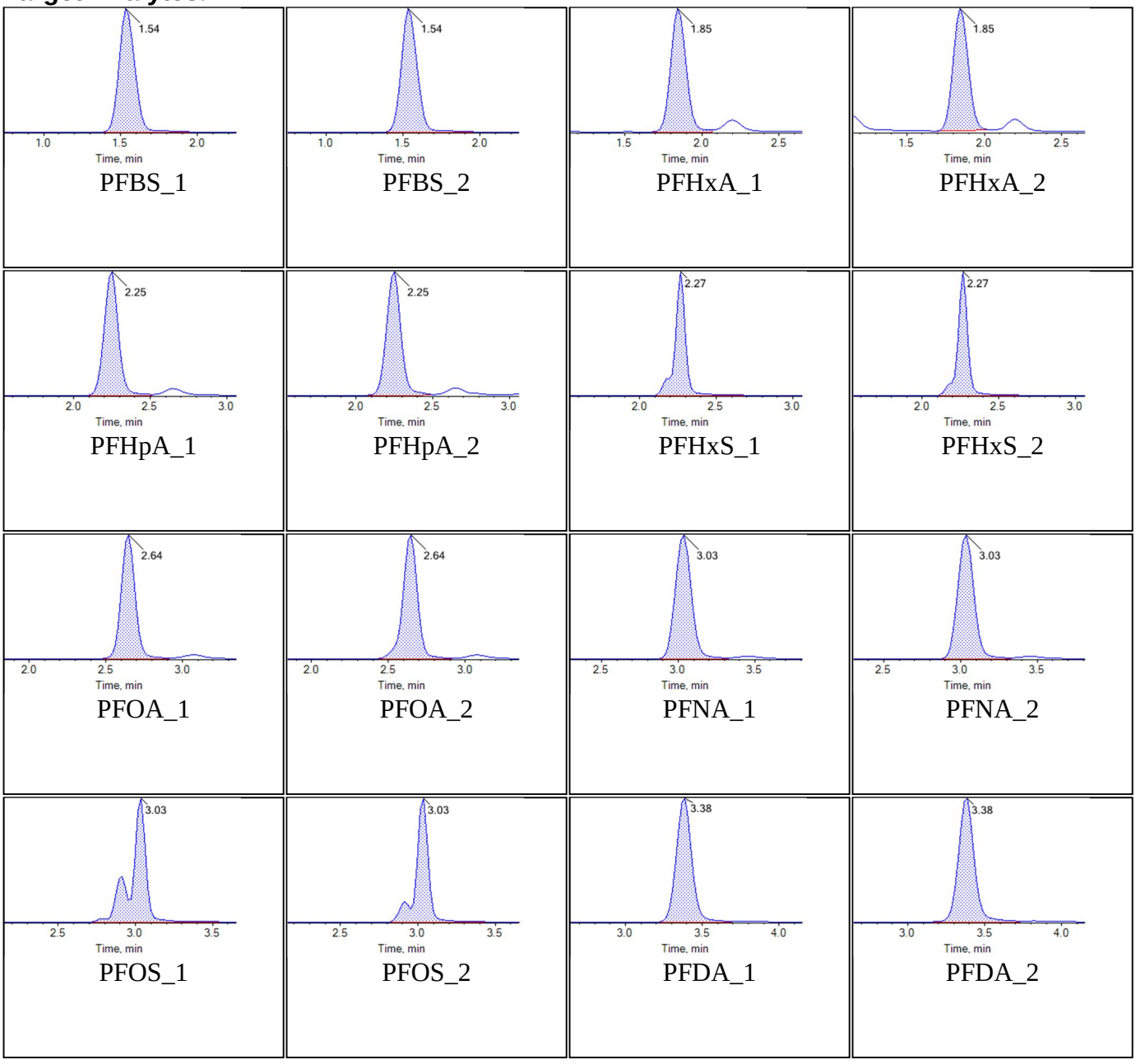

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Chromatogram Report

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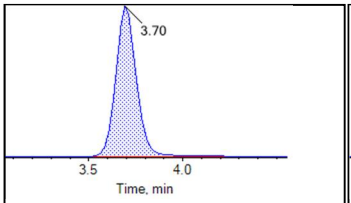

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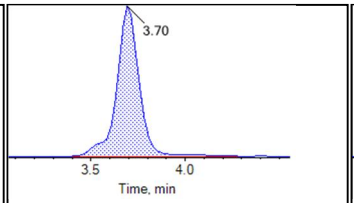

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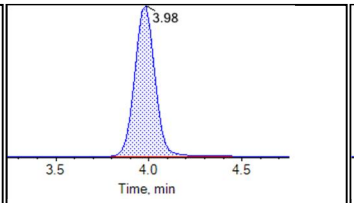

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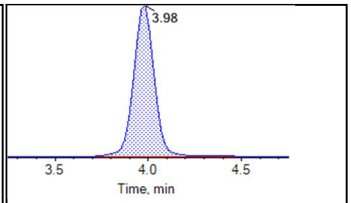

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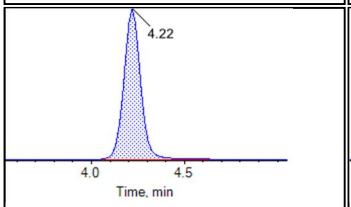

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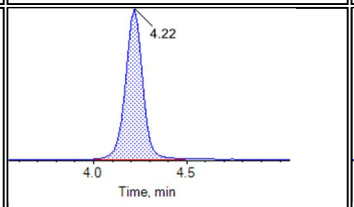

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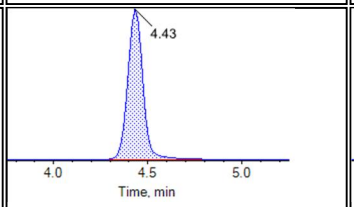

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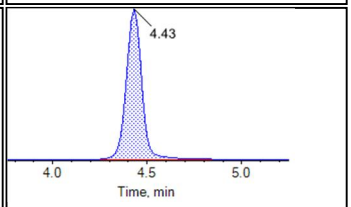

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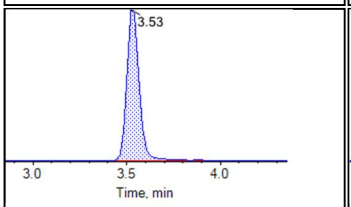

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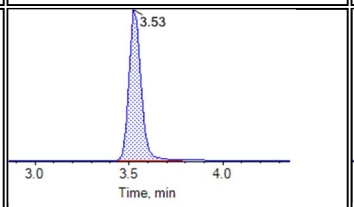

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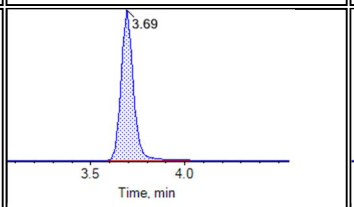

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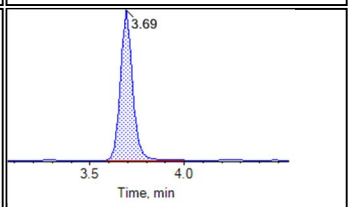

NEtFOSAA_2

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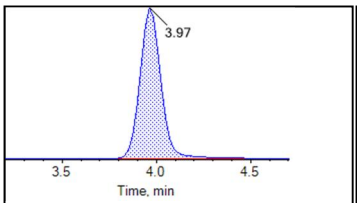
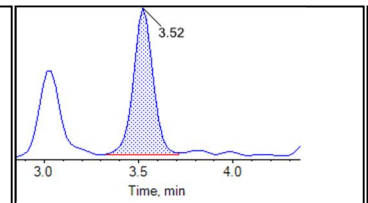
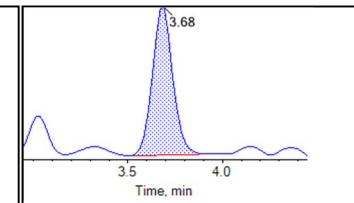


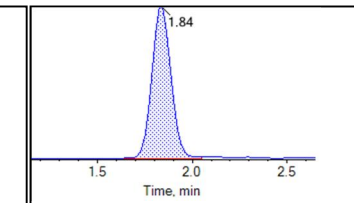
13C2-PFDoA



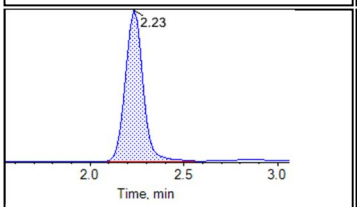
d3-MeFOSAA



d5-EtFOSAA



13C5-PFHxA



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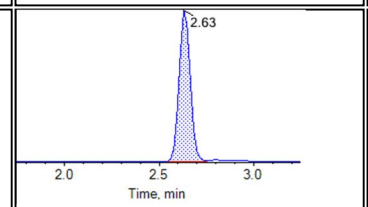
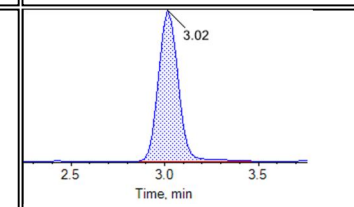
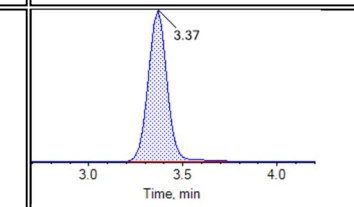


13C8-PFOA



13C9-PFNA



13C6-PFDA

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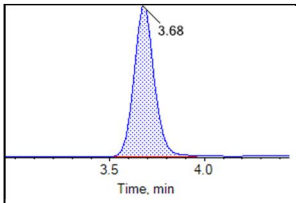
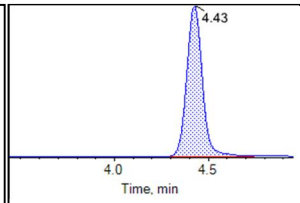
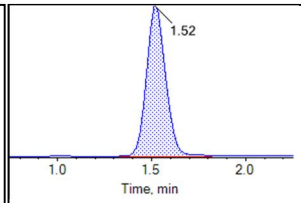


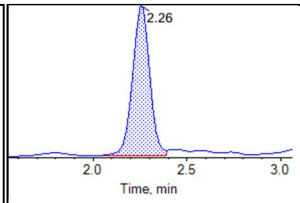
13C7-PFUnA



13C2-PFTeDA



13C3-PFBS



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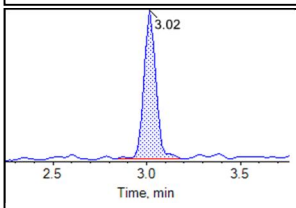

13C8-PFOS

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Chromatogram Report

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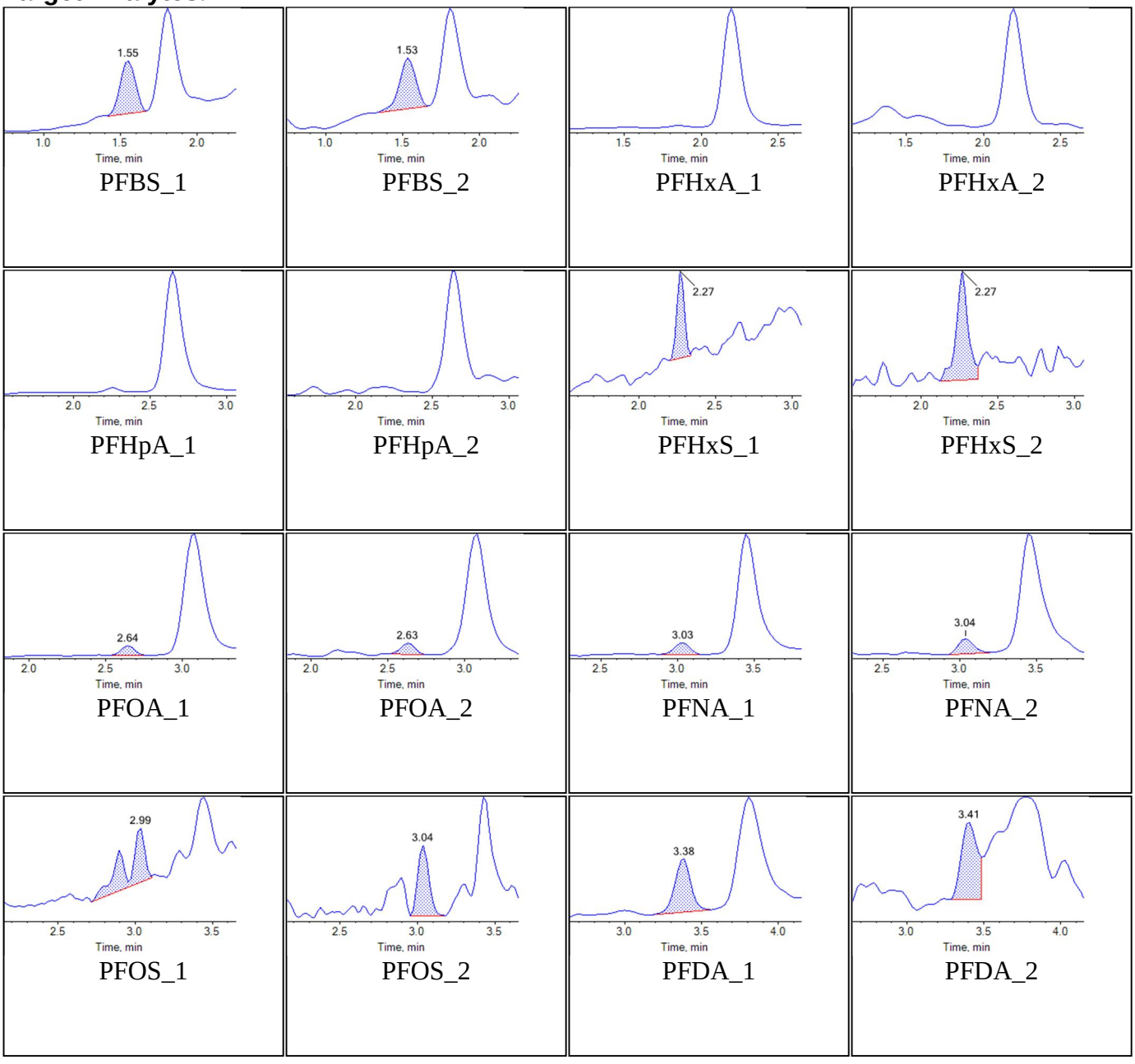
Printed: 18/09/2018 3:44:23 PM

Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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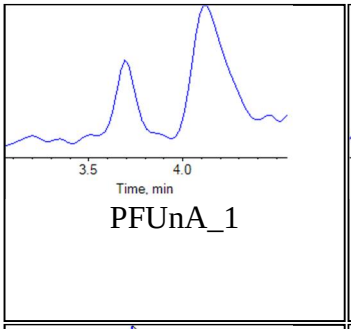
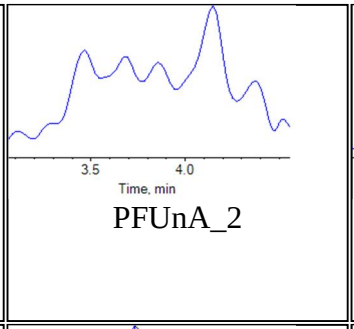


PFUnA_1



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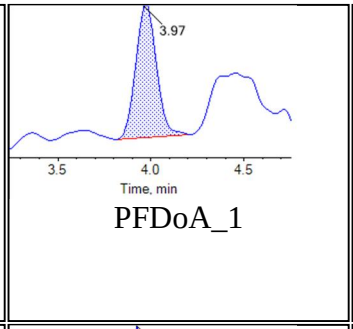

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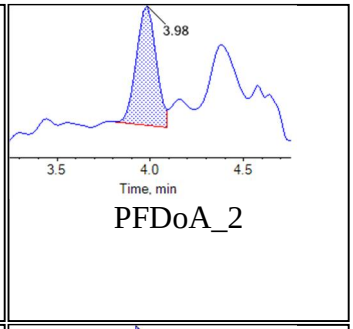

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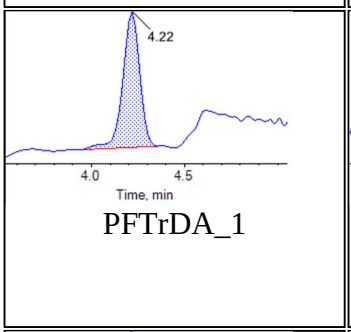

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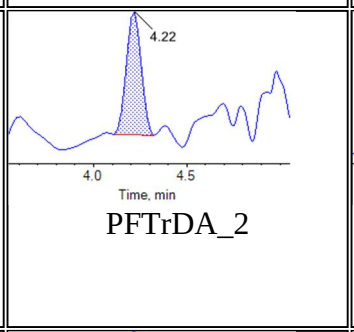

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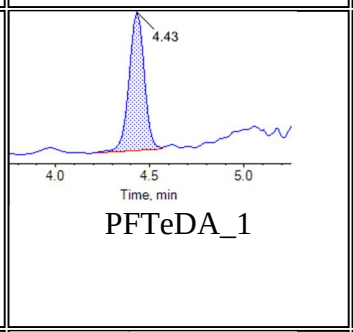

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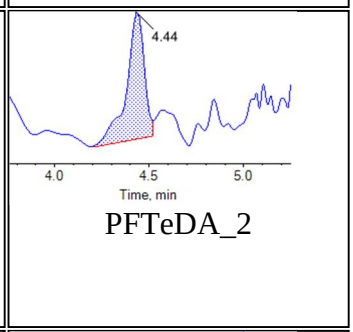

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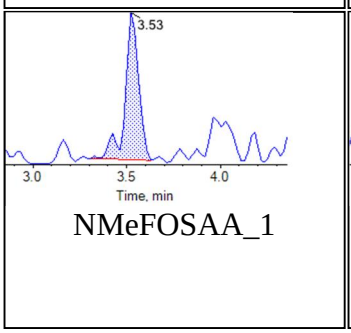

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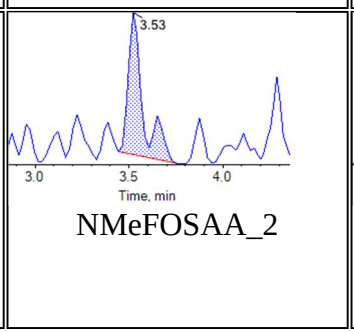

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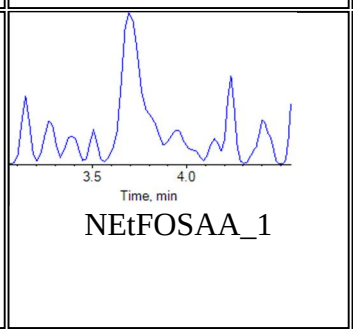

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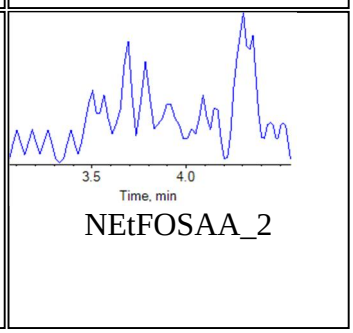

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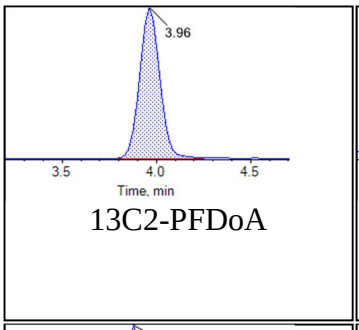

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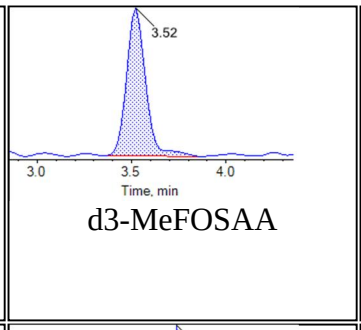

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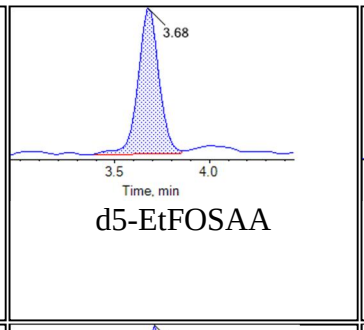

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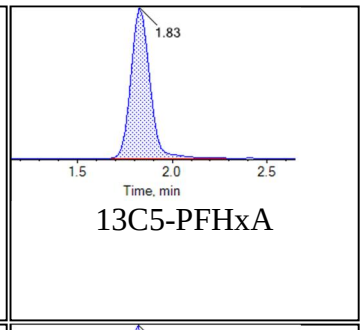

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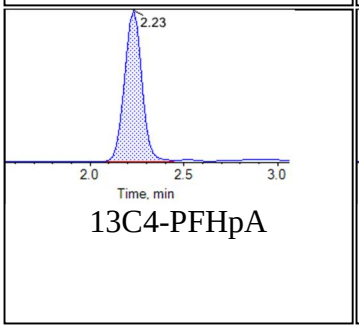

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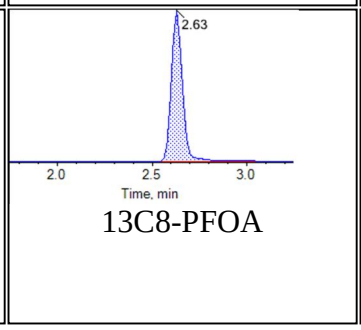

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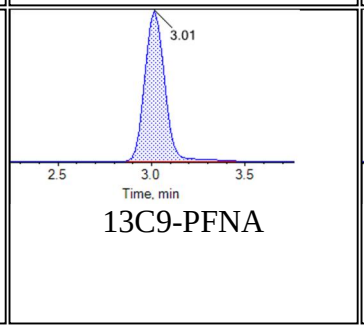

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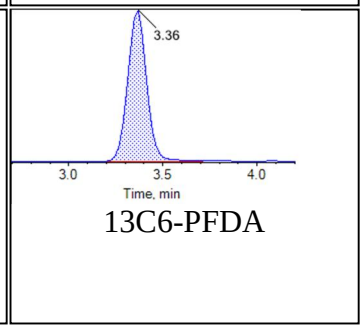

13C6-PFDA

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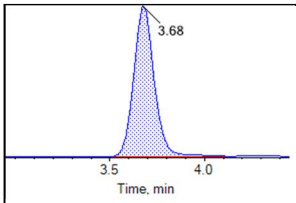
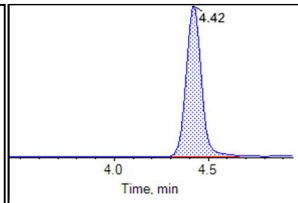


13C7-PFUnA



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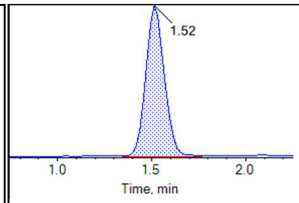

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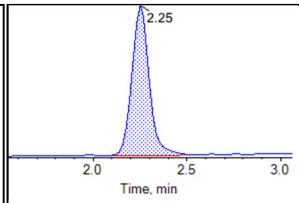

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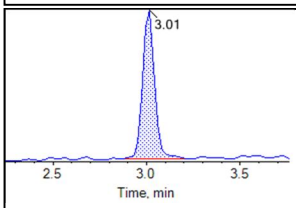

13C8-PFOS

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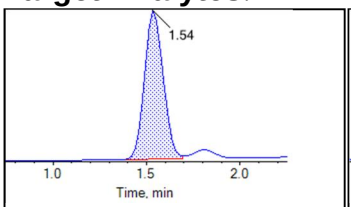
Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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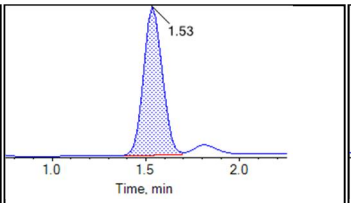

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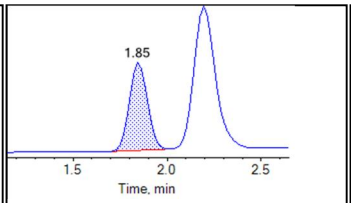

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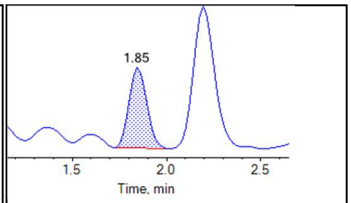

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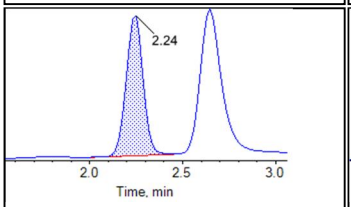

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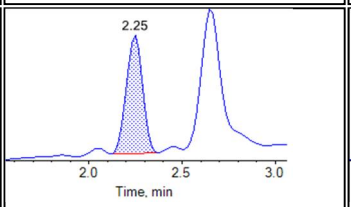

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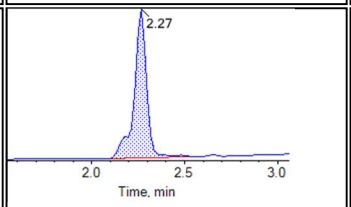

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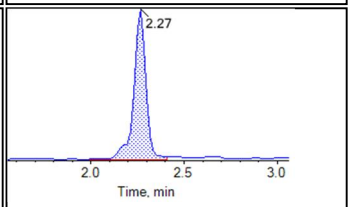

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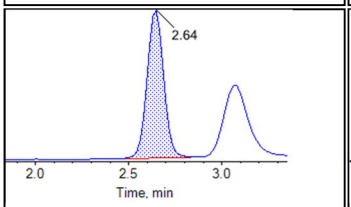

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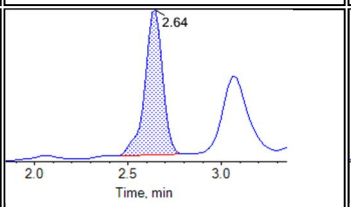

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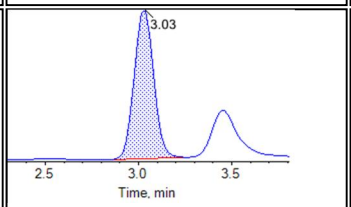

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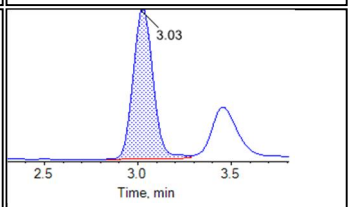

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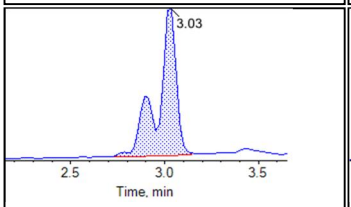

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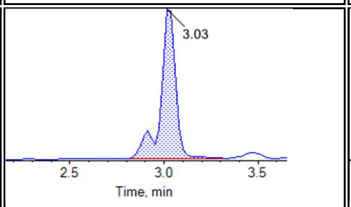

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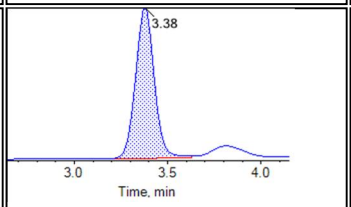

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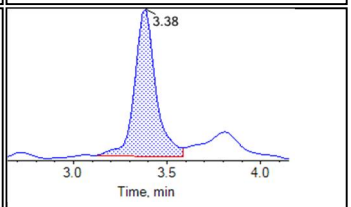

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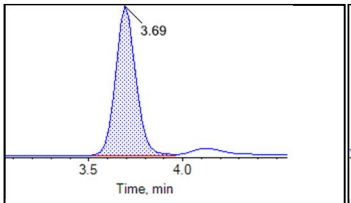

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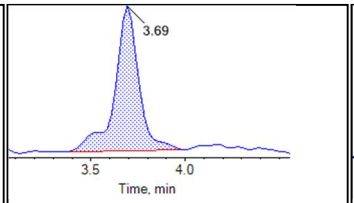

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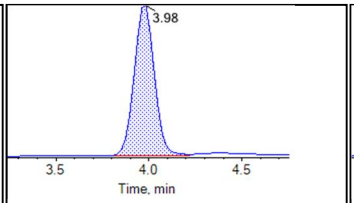

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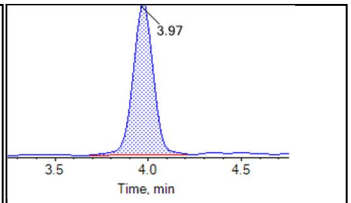

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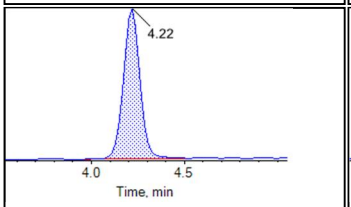

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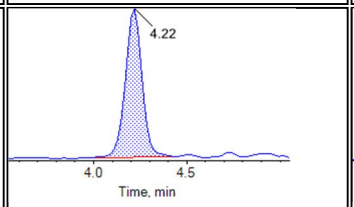

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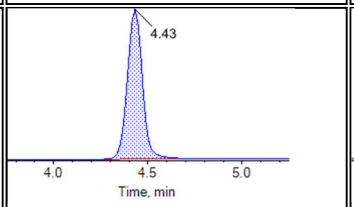

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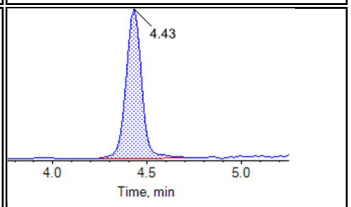

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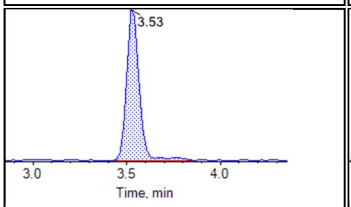

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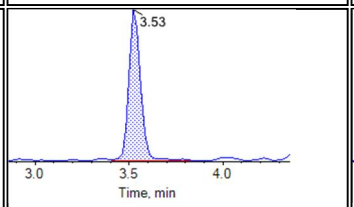

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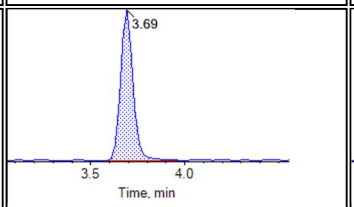

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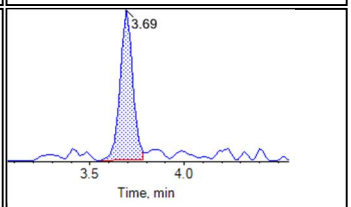
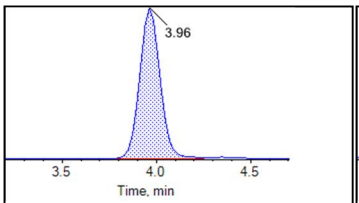
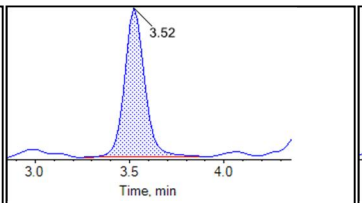


NEtFOSAA_2

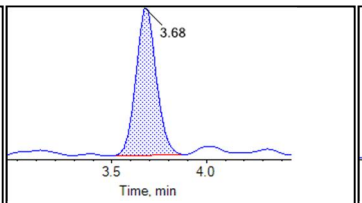
Internal Standards:



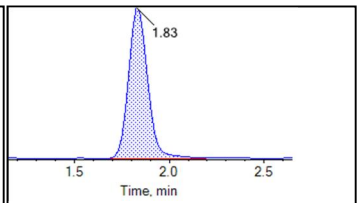
13C2-PFDoA



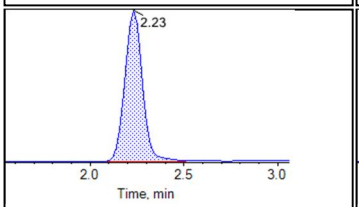
d3-MeFOSAA



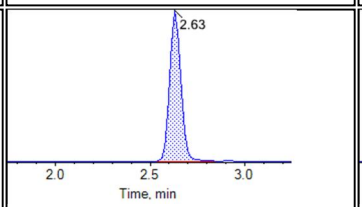
d5-EtFOSAA



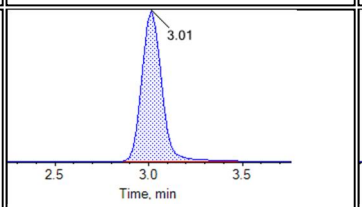
13C5-PFHxA



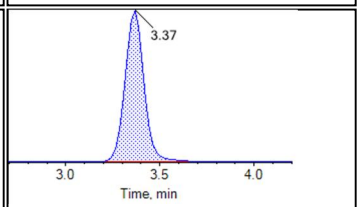
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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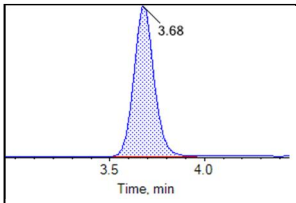
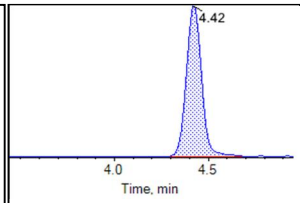
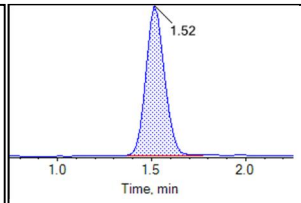


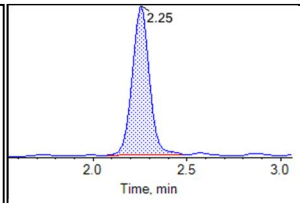
13C7-PFUnA



13C2-PFTeDA



13C3-PFBS



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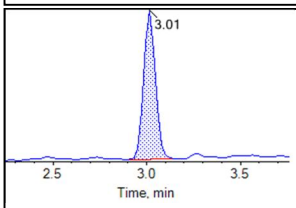

13C8-PFOS

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Chromatogram Report

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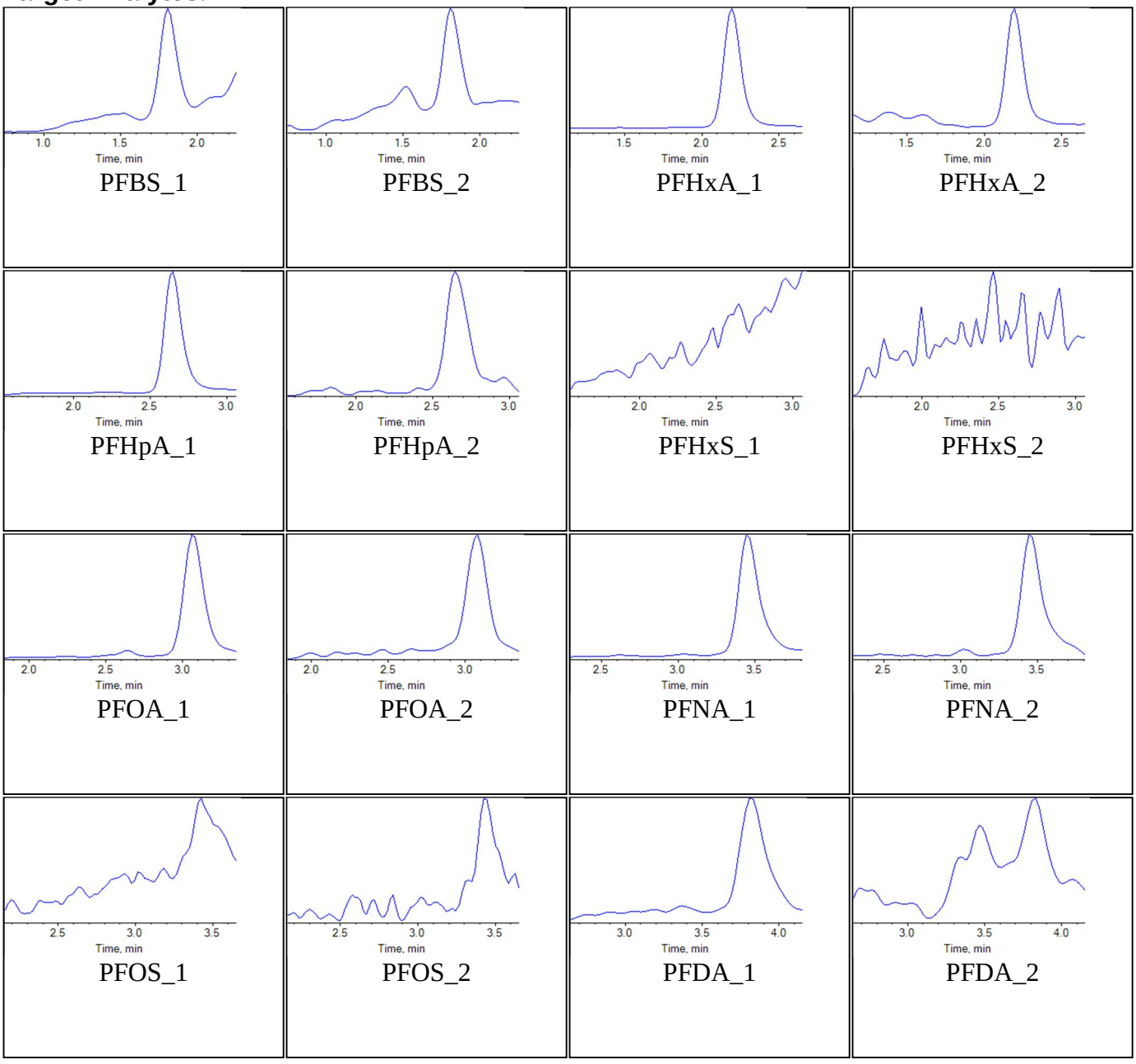
Printed: 18/09/2018 3:44:45 PM

Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



BATTELLE

Chromatogram Report

Created with Analyst Reporter
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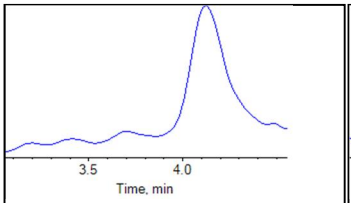
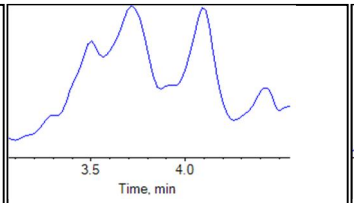
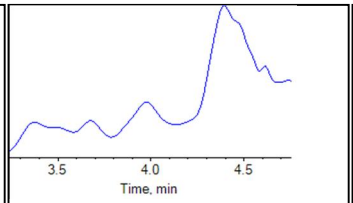


PFUnA_1



PFUnA_2



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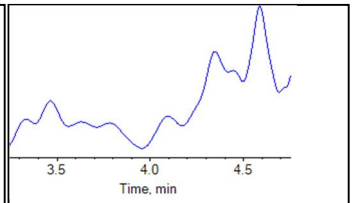

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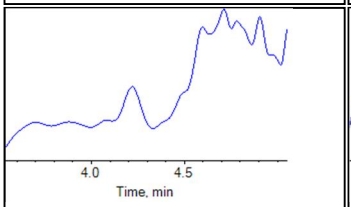
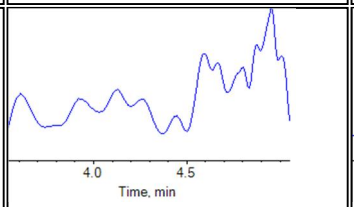
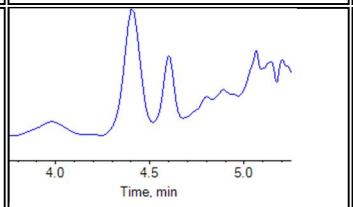


PFTrDA_1



PFTrDA_2



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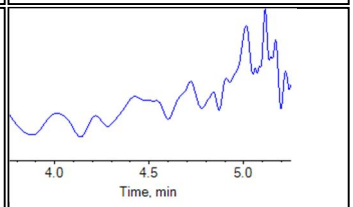

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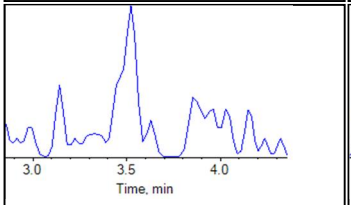

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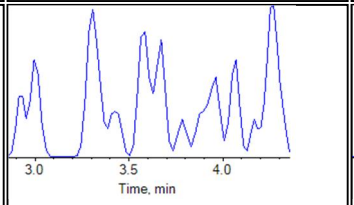
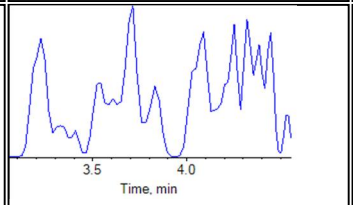


NMeFOSAA_2



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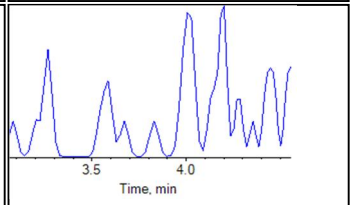
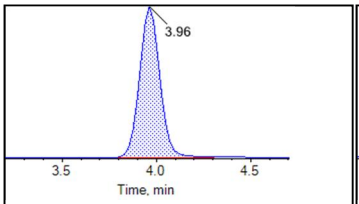
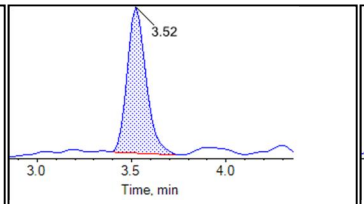


NEtFOSAA_2

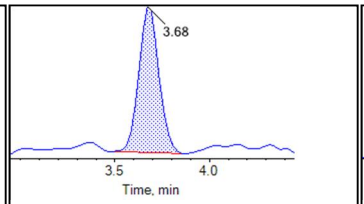
Internal Standards:



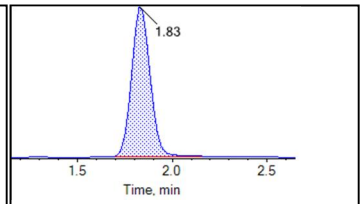
13C2-PFDoA



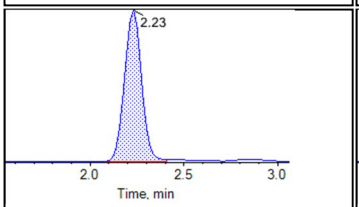
d3-MeFOSAA



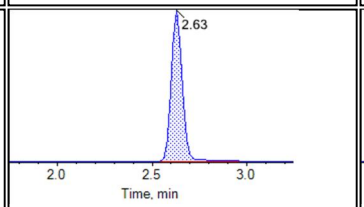
d5-EtFOSAA



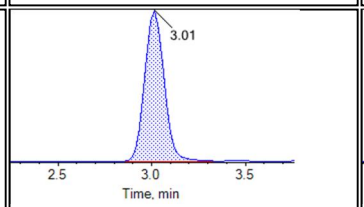
13C5-PFHxA



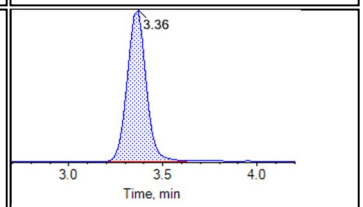
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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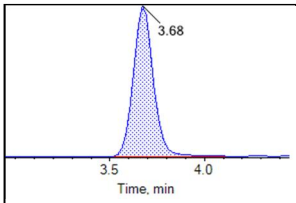
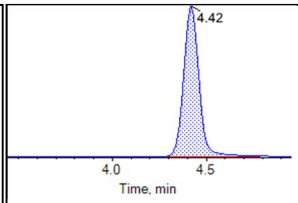
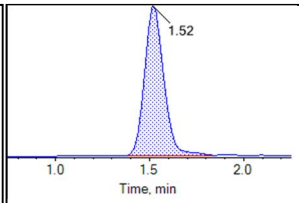


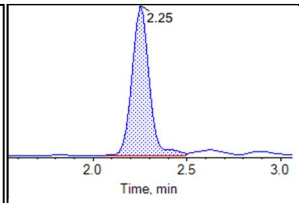
13C7-PFUnA



13C2-PFTeDA



13C3-PFBS



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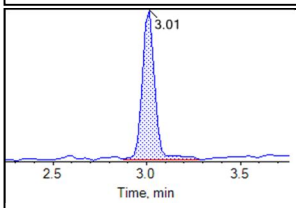


13C8-PFOS

BATTELLE

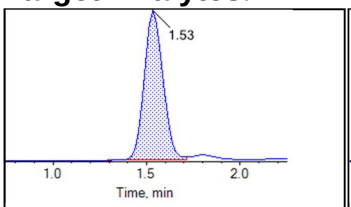
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:44:51 PM

Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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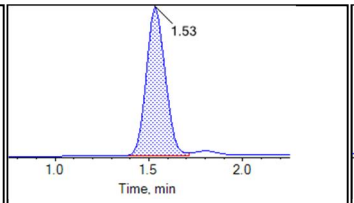
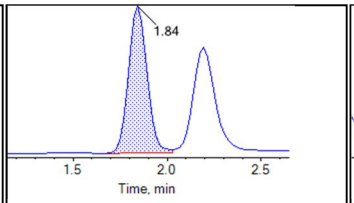


PFBS_2



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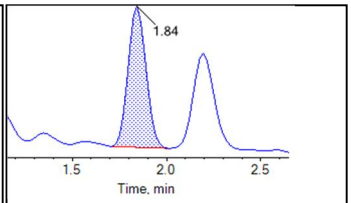
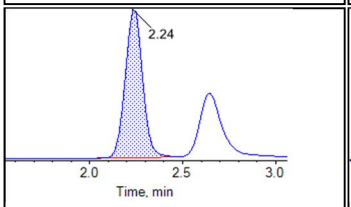


PFHxA_2



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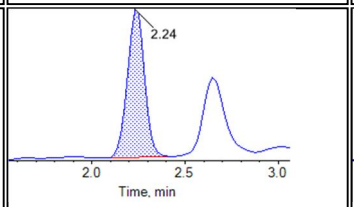

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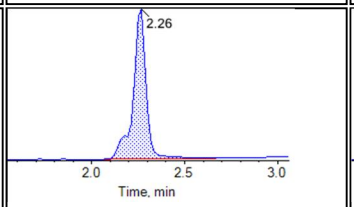

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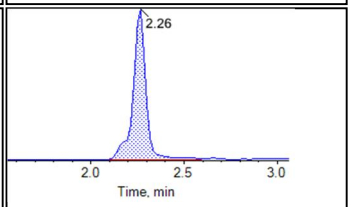

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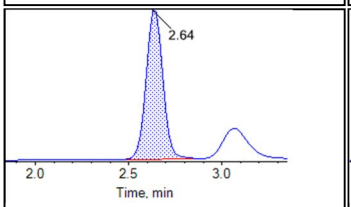

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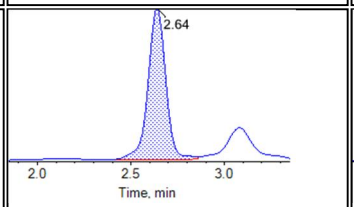
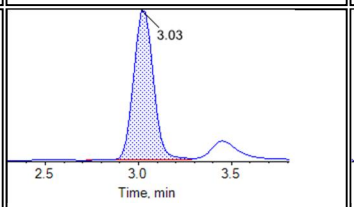


PFOA_2



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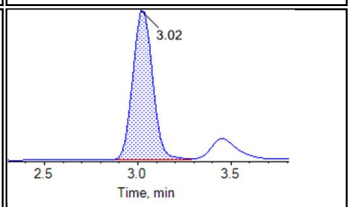

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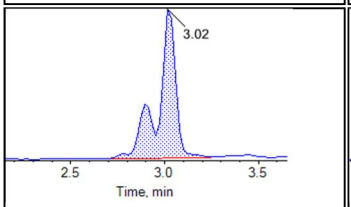

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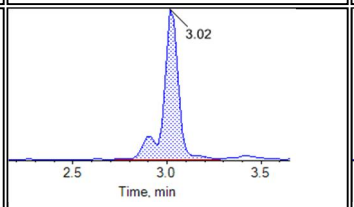

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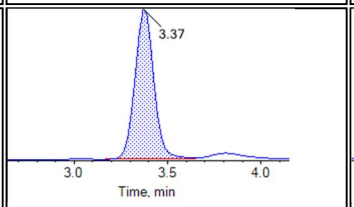

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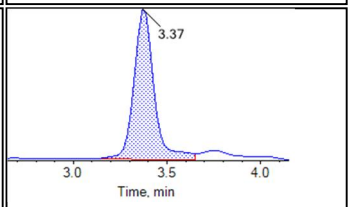

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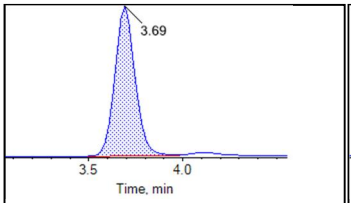

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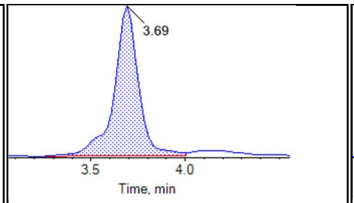

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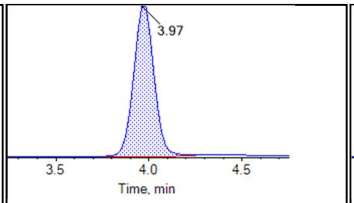

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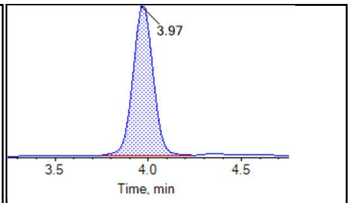

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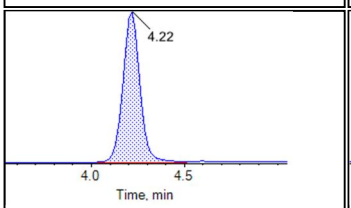

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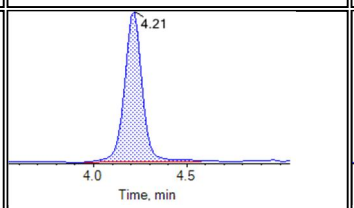

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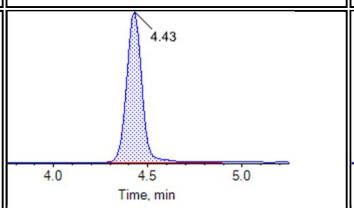

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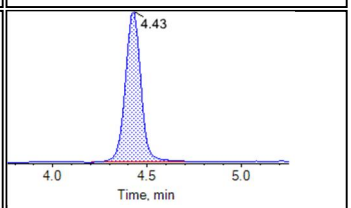

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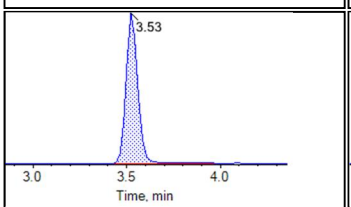

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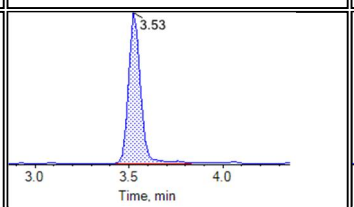

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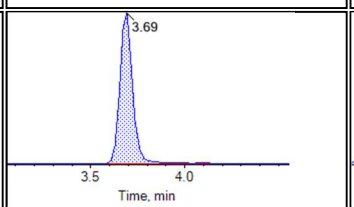

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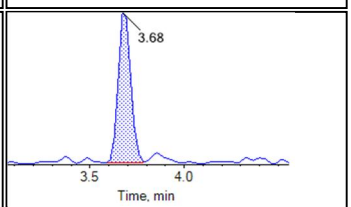

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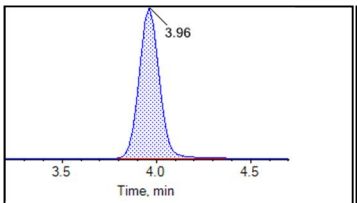

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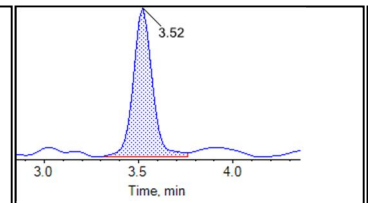

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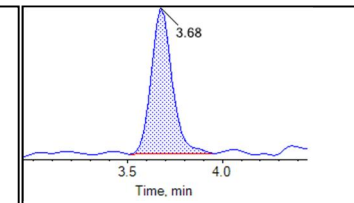

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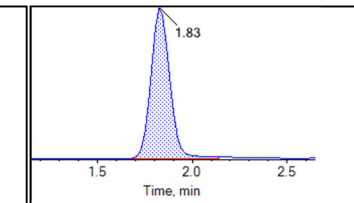

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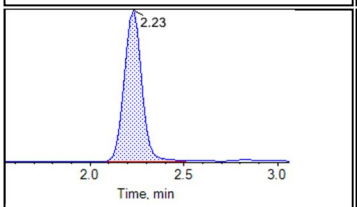

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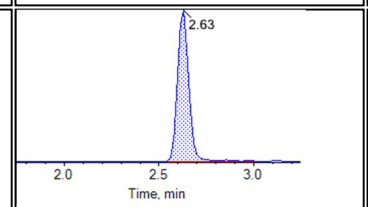

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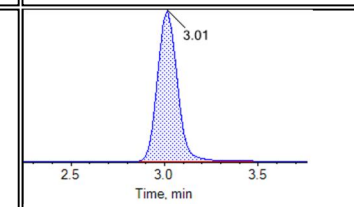

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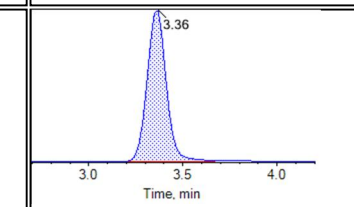

13C6-PFDA

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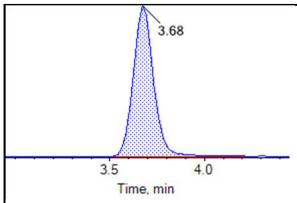

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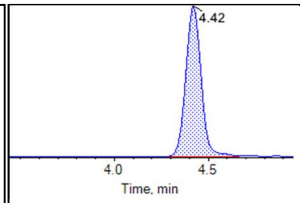

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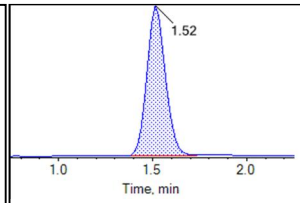

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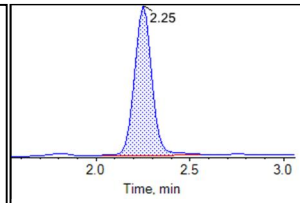

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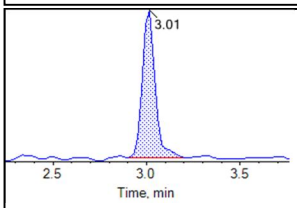

13C8-PFOS

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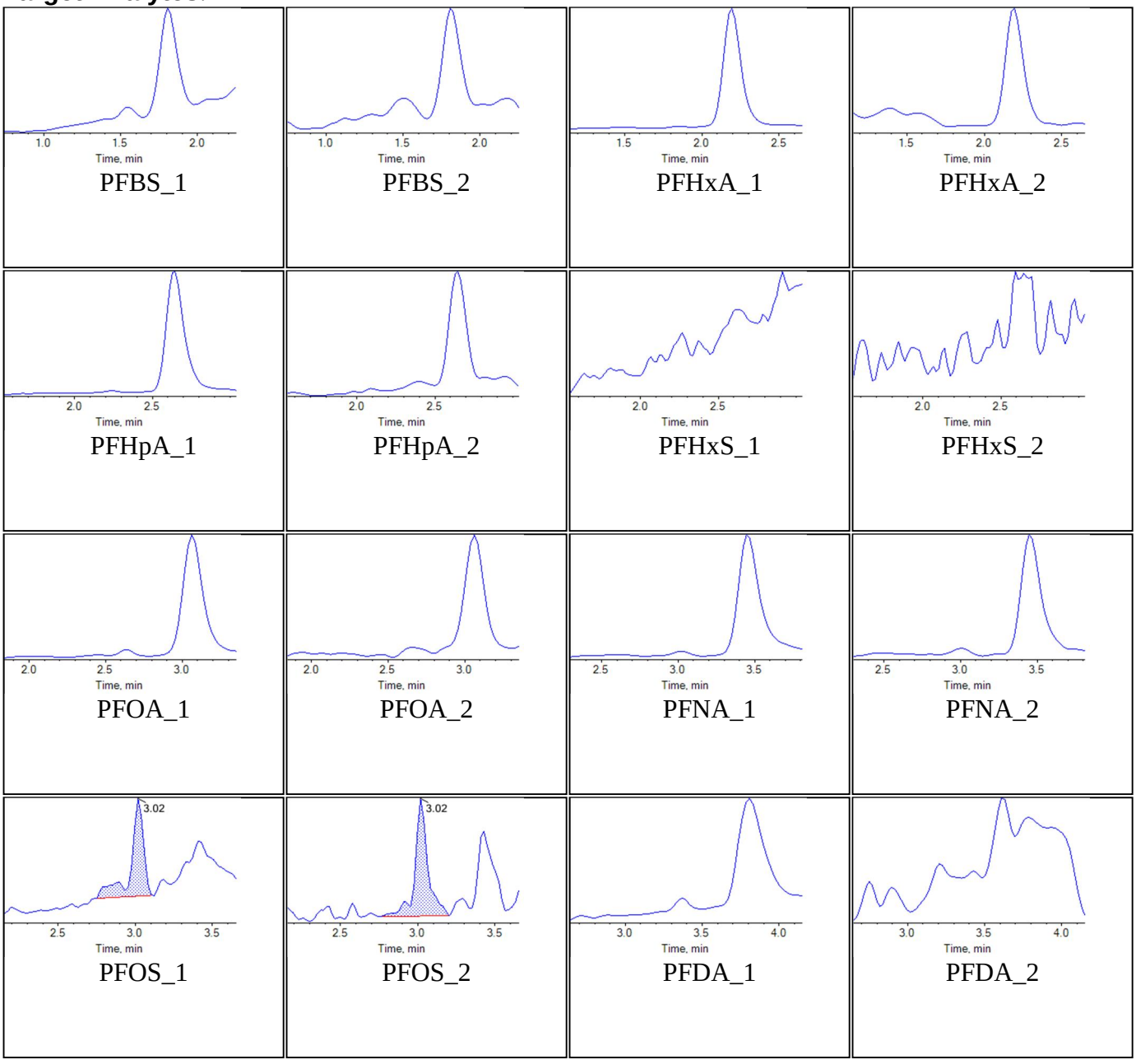
Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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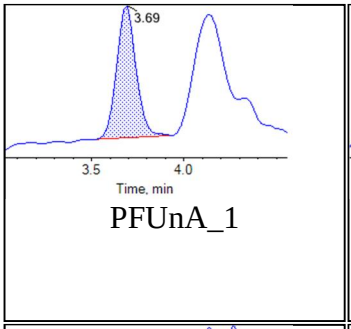

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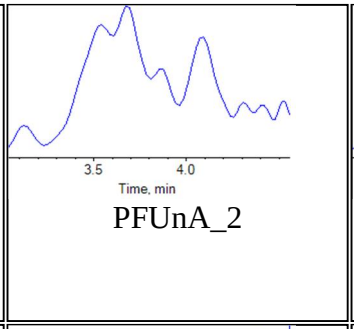

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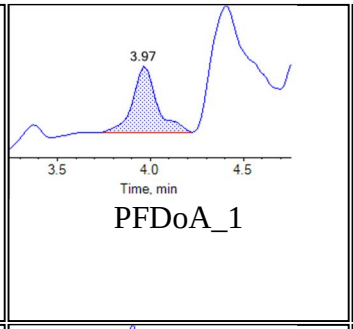

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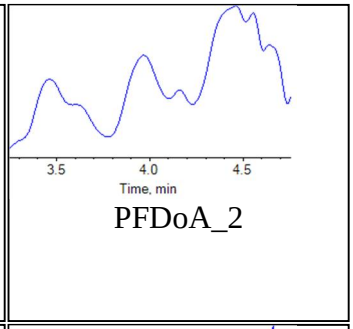

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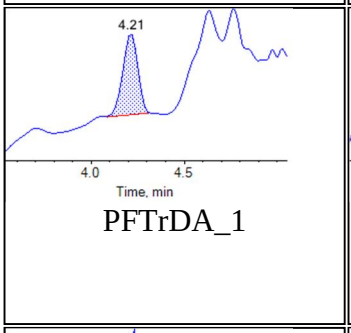

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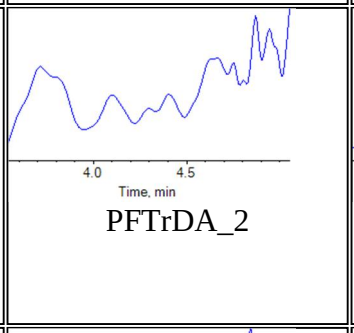

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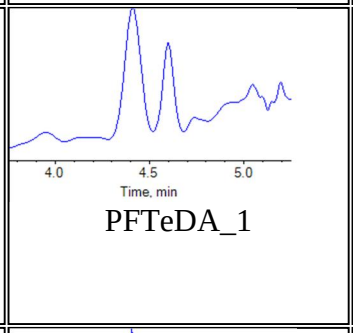

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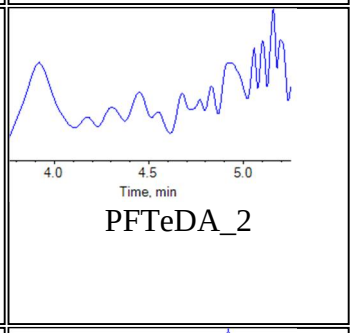

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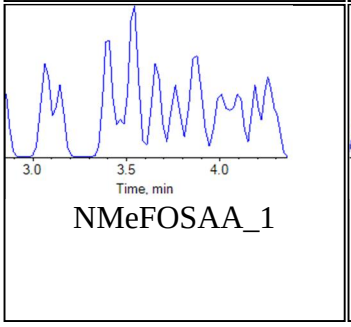

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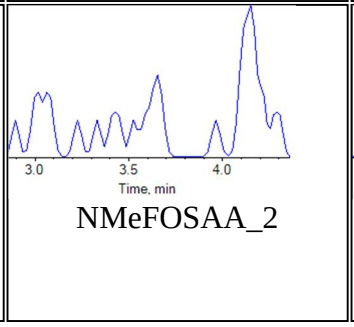

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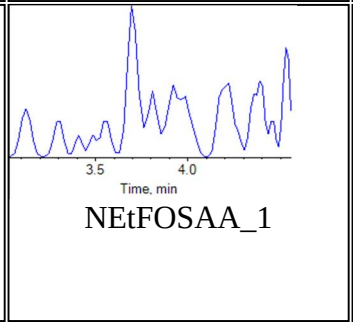

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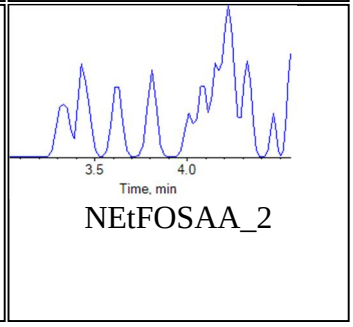

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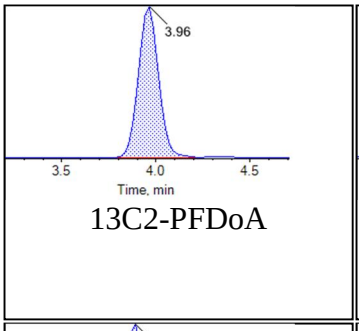

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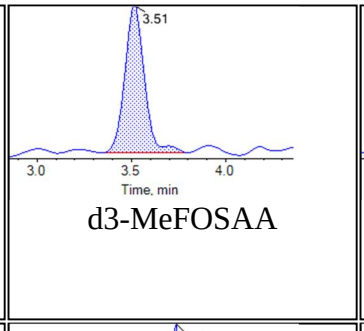

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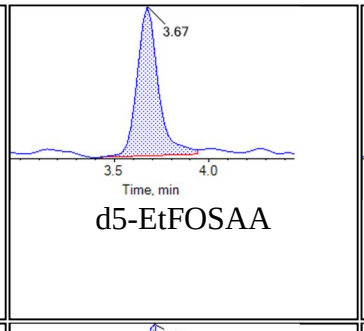

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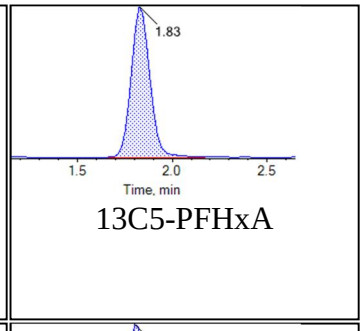

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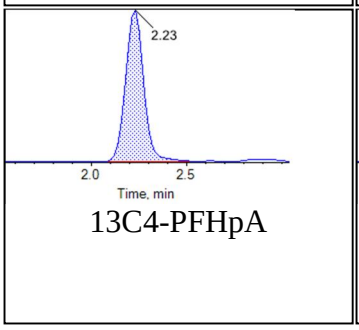

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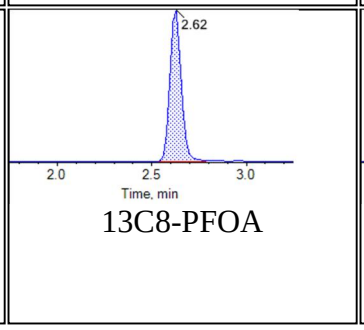

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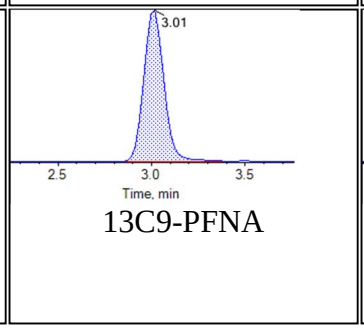

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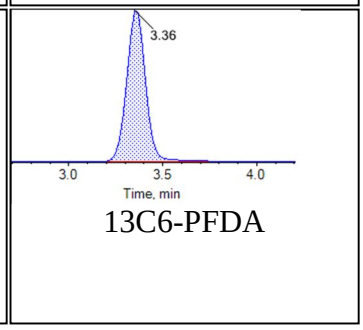

13C6-PFDA

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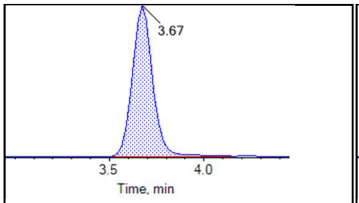
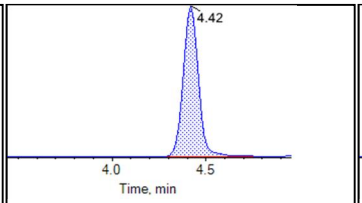
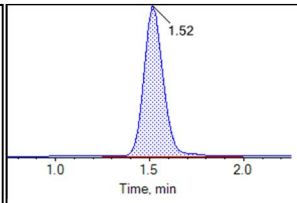


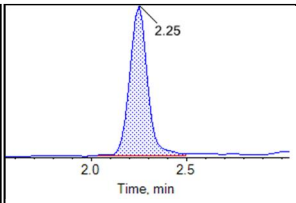
13C7-PFUnA



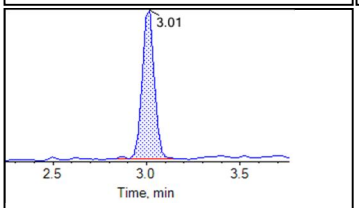
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

BATTELLE

Chromatogram Report

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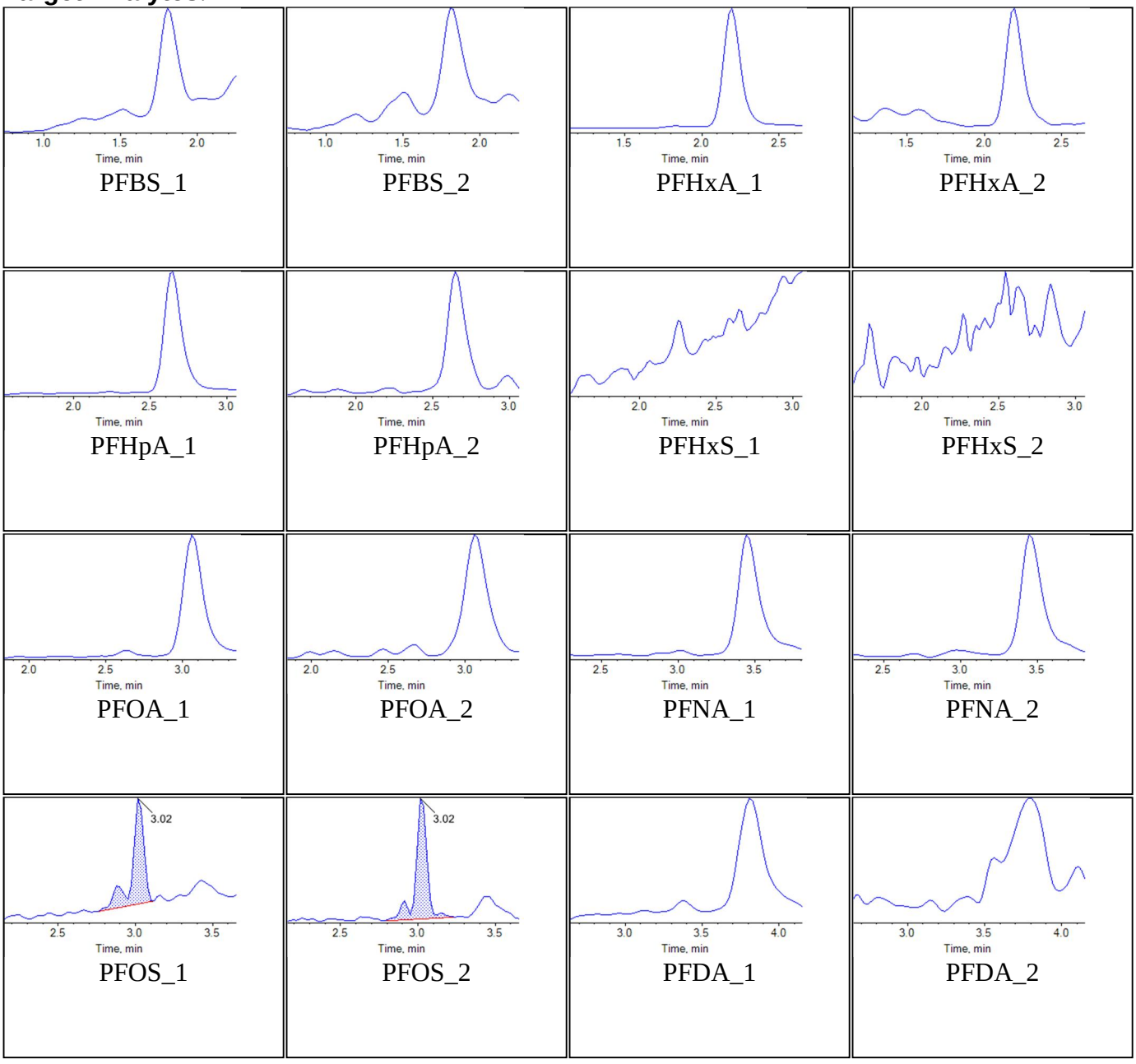
Printed: 18/09/2018 3:45:04 PM

Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



BATTELLE

Chromatogram Report

Created with Analyst Reporter
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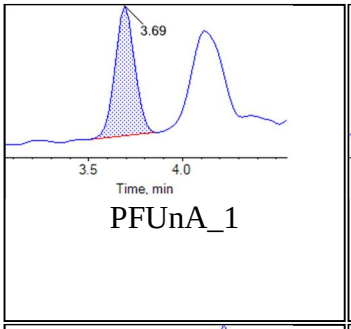
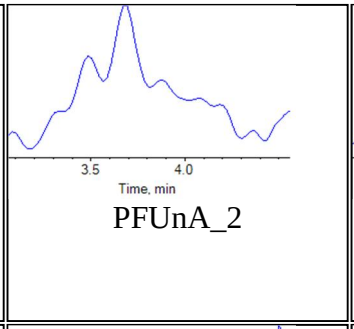
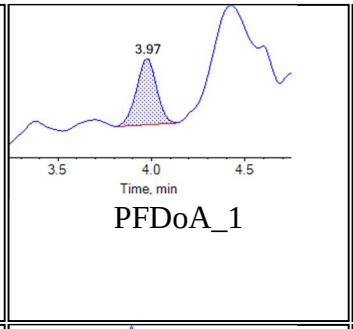


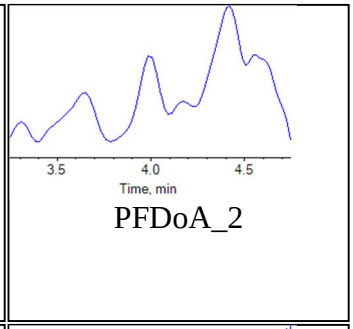
PFUnA_1



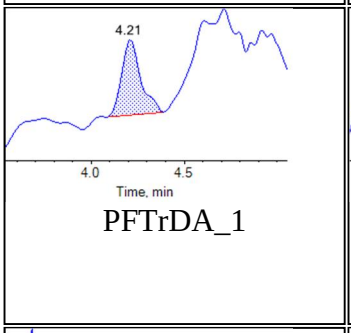
PFUnA_2



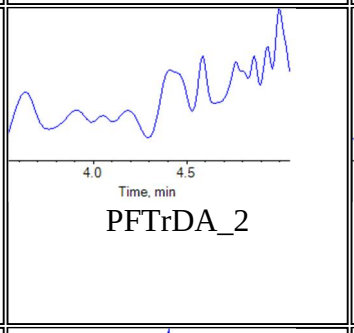
PFDoA_1



PFDoA_2



PFTrDA_1



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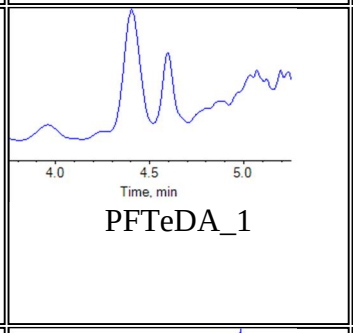

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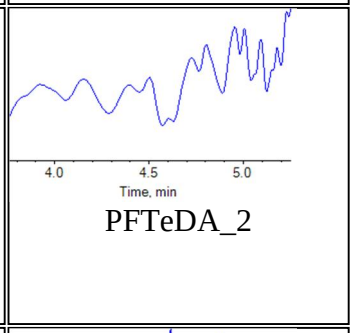
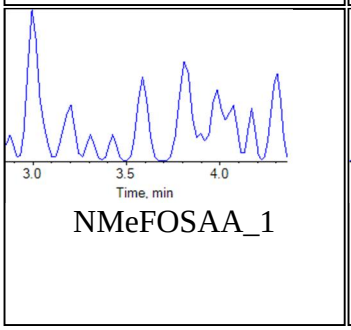
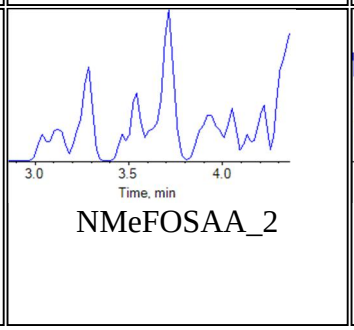


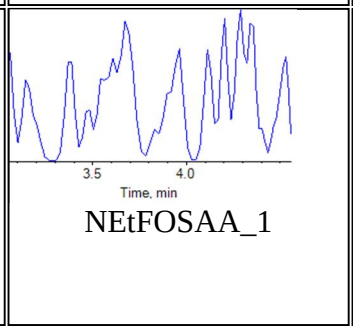
PFTeDA_2



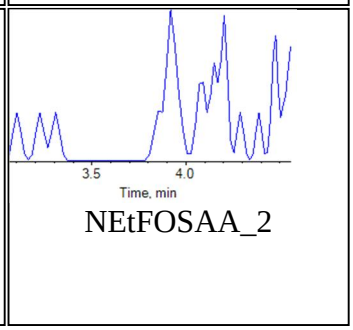
NMeFOSAA_1



NMeFOSAA_2

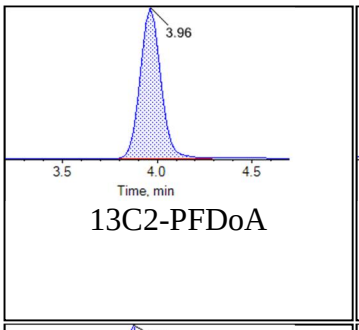


NEtFOSAA_1

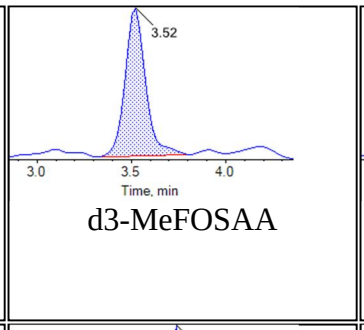


NEtFOSAA_2

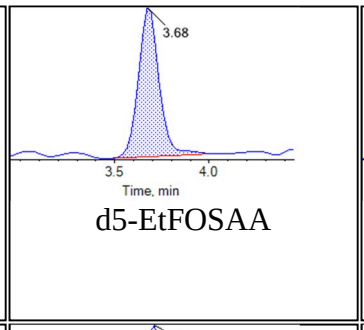
Internal Standards:



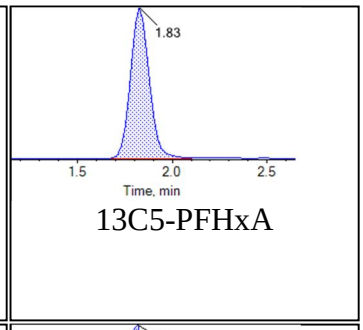
13C2-PFDoA



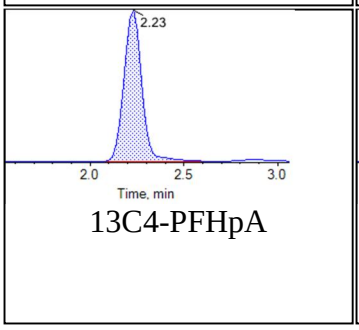
d3-MeFOSAA



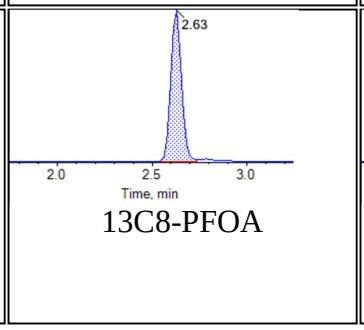
d5-EtFOSAA



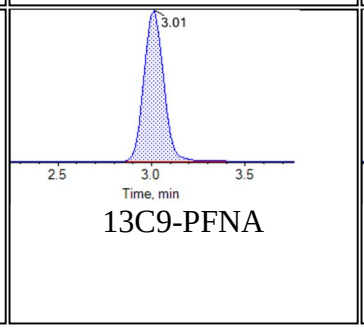
13C5-PFHxA



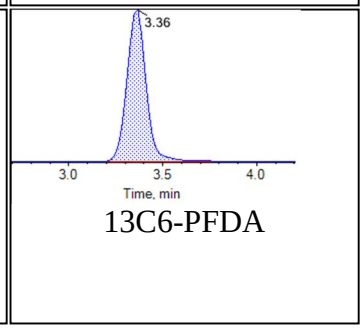
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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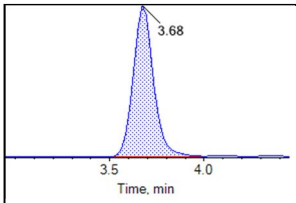
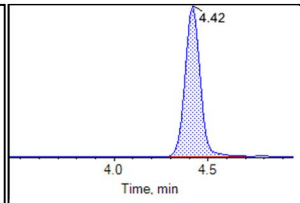
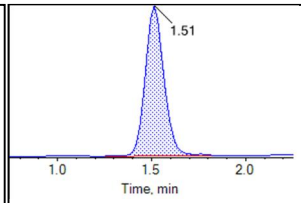


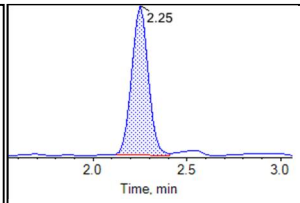
13C7-PFUnA



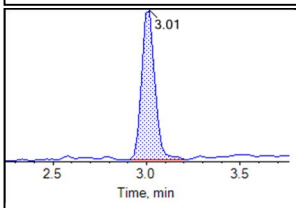
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

BATTELLE

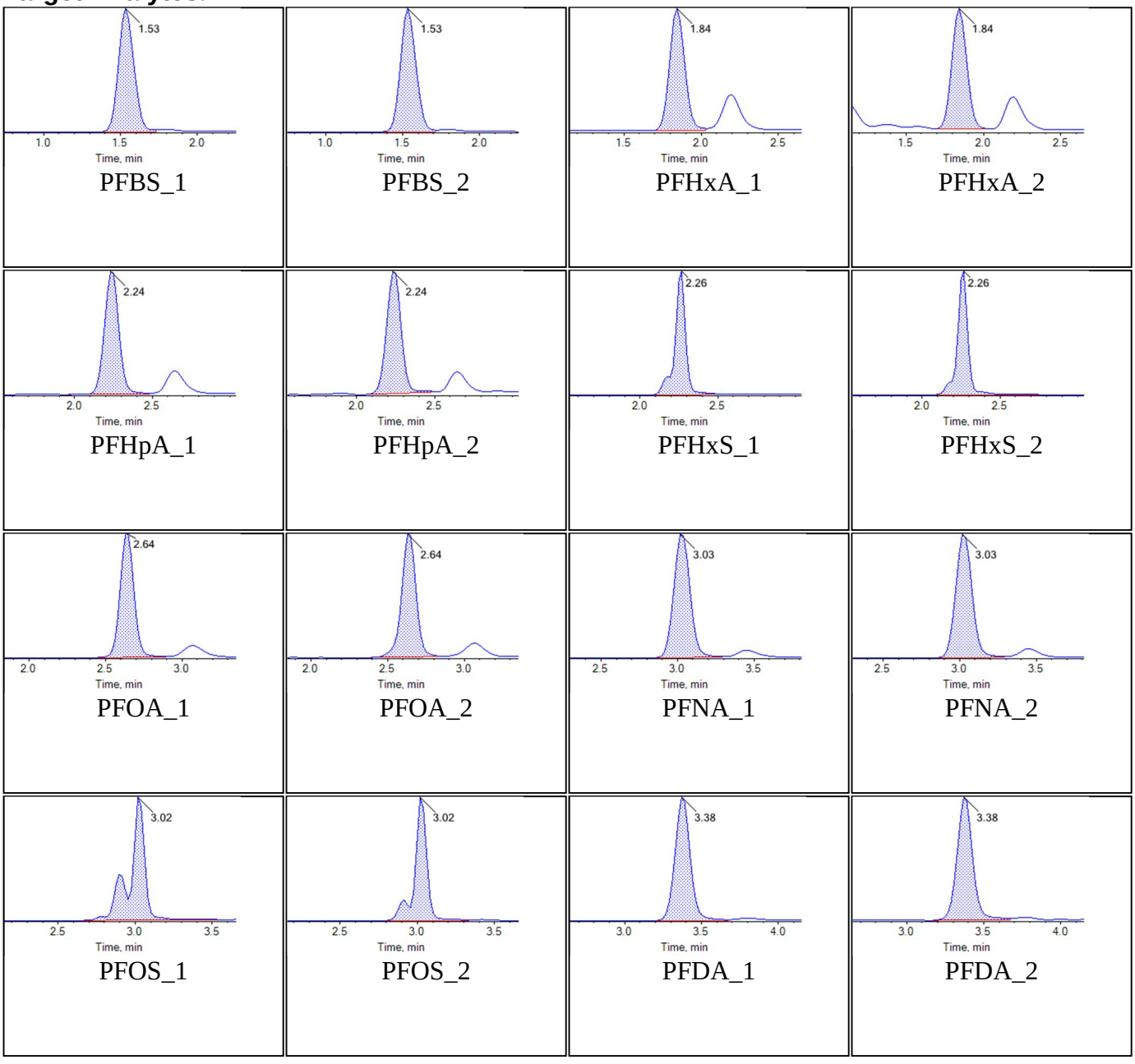
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:45:09 PM

Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



BATTELLE

Chromatogram Report

Created with Analyst Reporter
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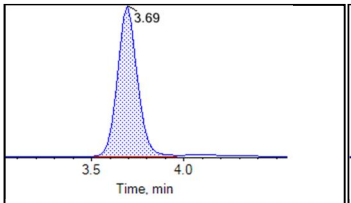
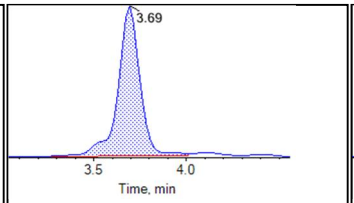
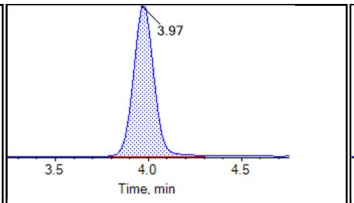


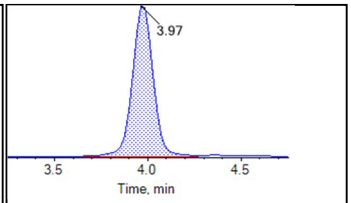
PFUnA_1



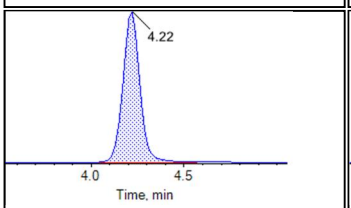
PFUnA_2



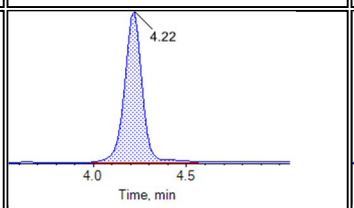
PFDoA_1



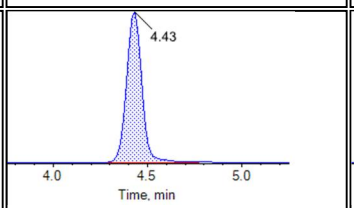
PFDoA_2



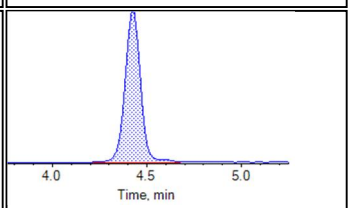
PFTrDA_1



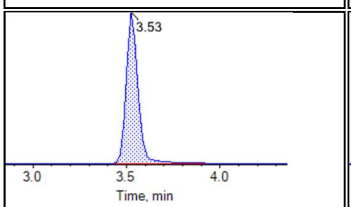
PFTrDA_2



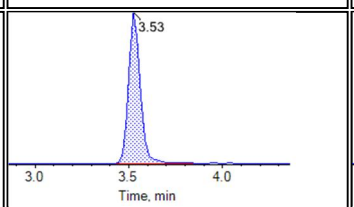
PFTeDA_1



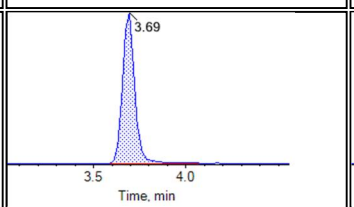
PFTeDA_2



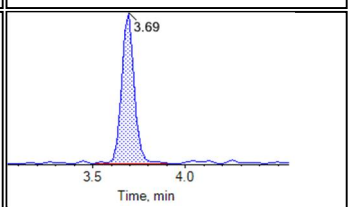
NMeFOSAA_1



NMeFOSAA_2

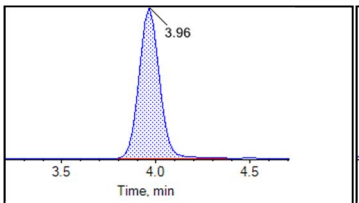


NEtFOSAA_1

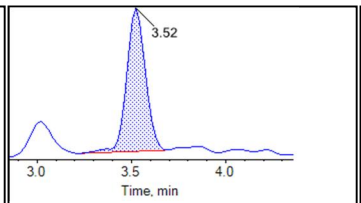


NEtFOSAA_2

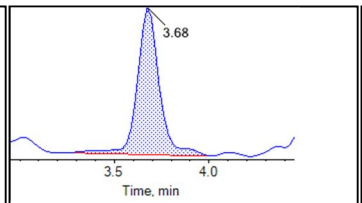
Internal Standards:



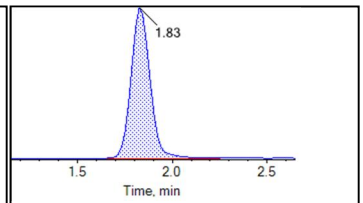
13C2-PFDoA



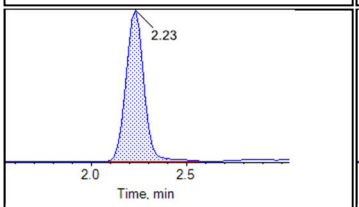
d3-MeFOSAA



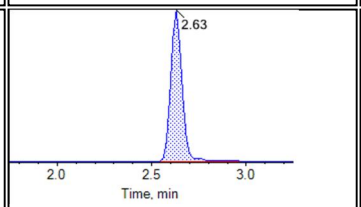
d5-EtFOSAA



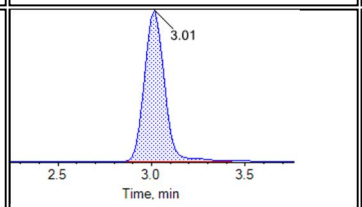
13C5-PFHxA



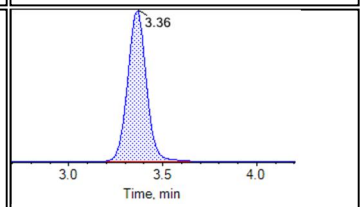
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

BATTELLE

Chromatogram Report

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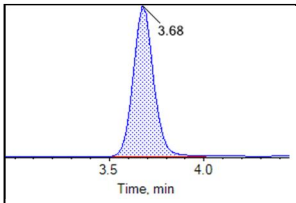
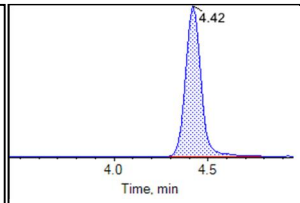
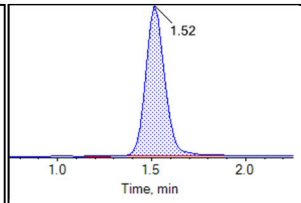


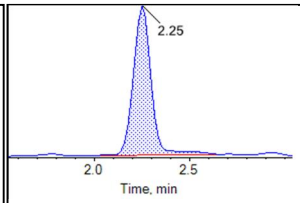
13C7-PFUnA



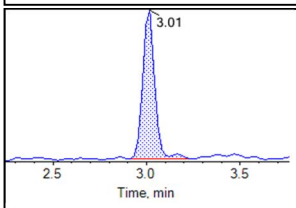
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

BATTELLE

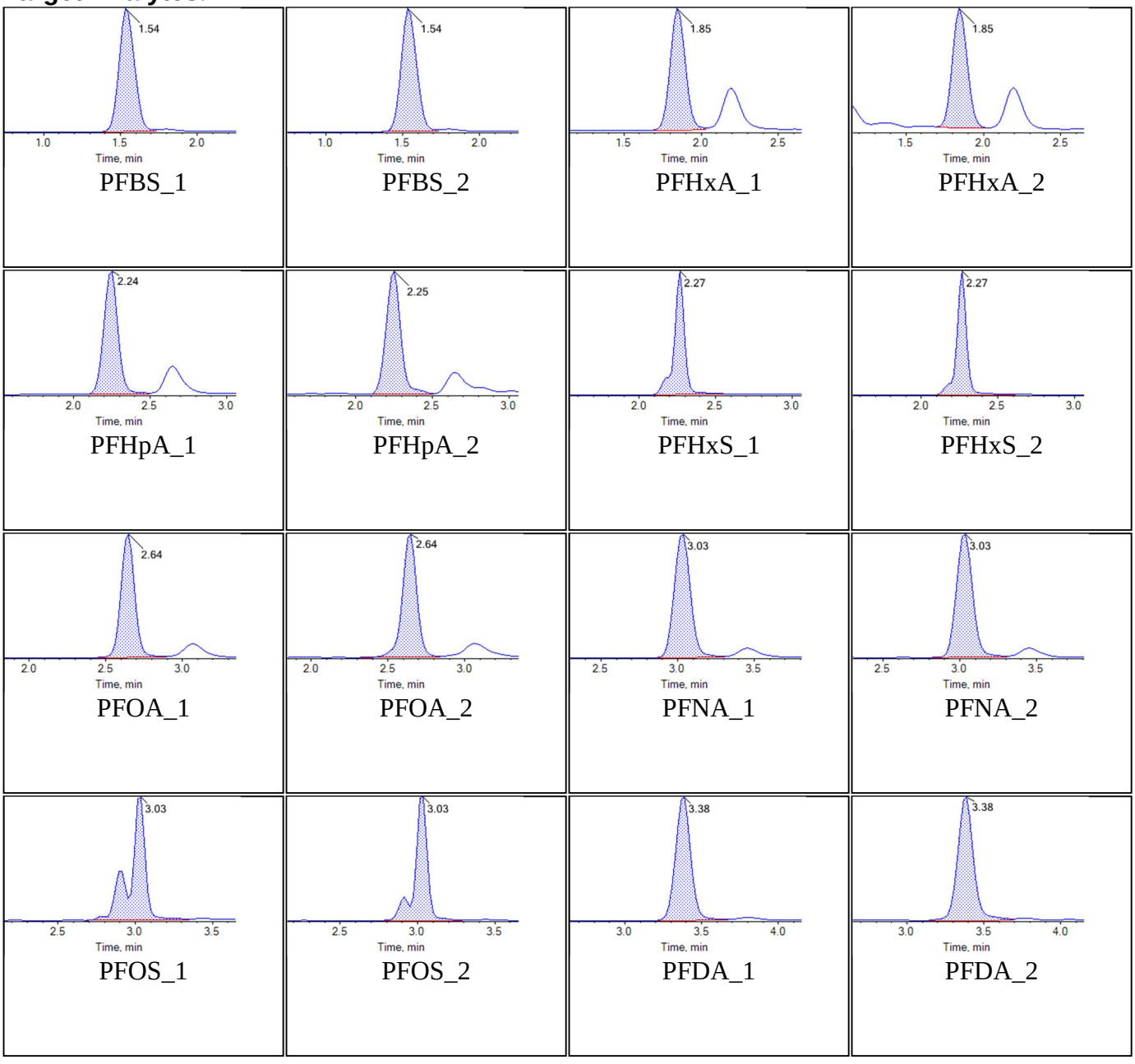
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:45:14 PM

Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



BATTELLE

Chromatogram Report

Created with Analyst Reporter
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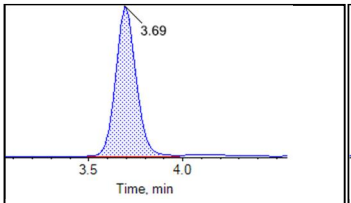
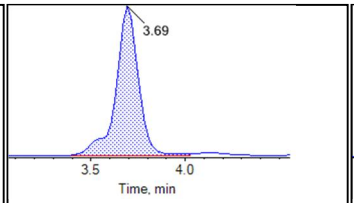
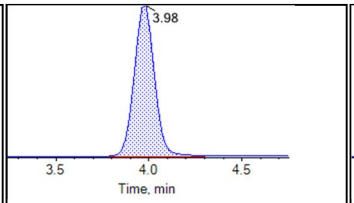


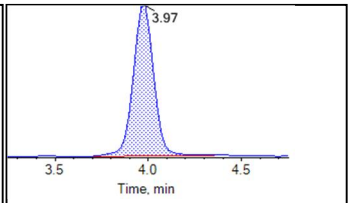
PFUnA_1



PFUnA_2



PFDoA_1



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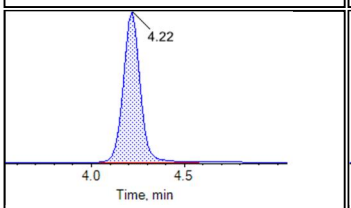
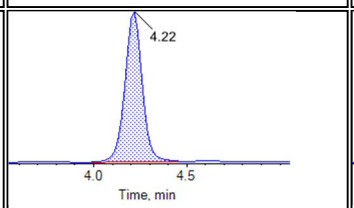


PFTrDA_1



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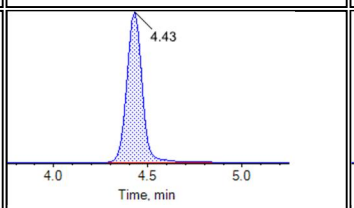

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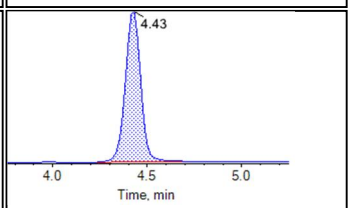

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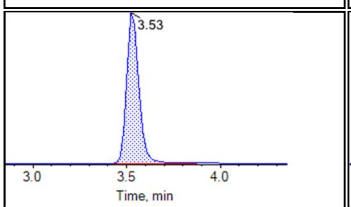
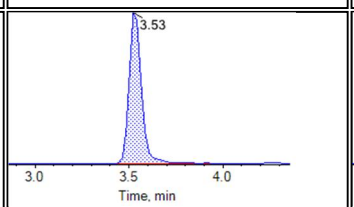
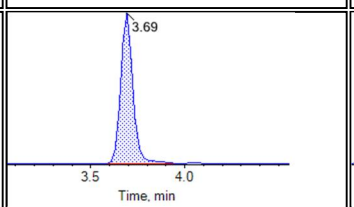


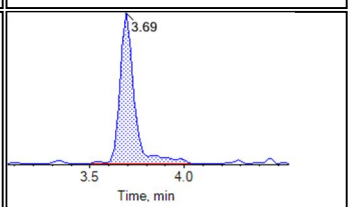
NMeFOSAA_1



NMeFOSAA_2

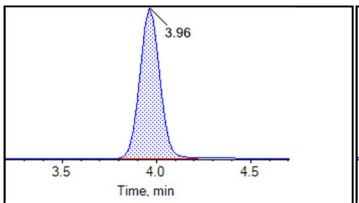


NEtFOSAA_1

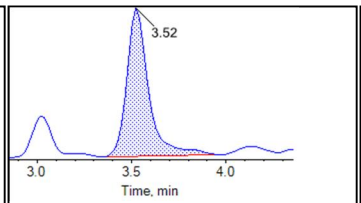


NEtFOSAA_2

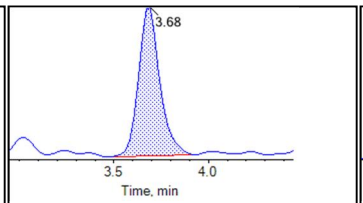
Internal Standards:



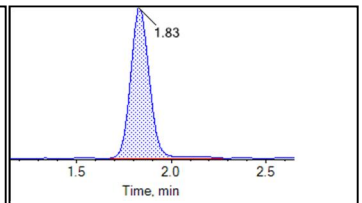
13C2-PFDoA



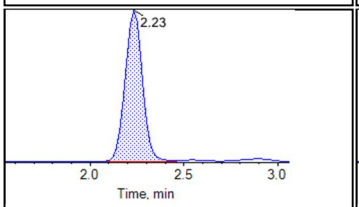
d3-MeFOSAA



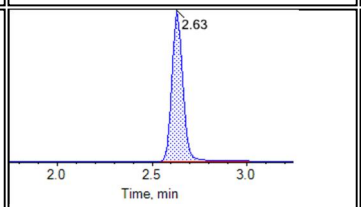
d5-EtFOSAA



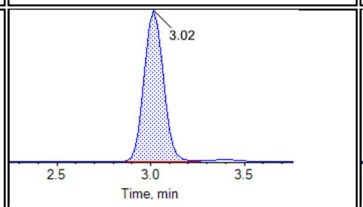
13C5-PFHxA



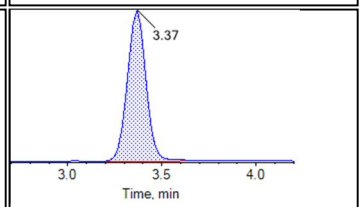
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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Chromatogram Report

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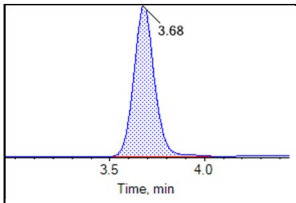
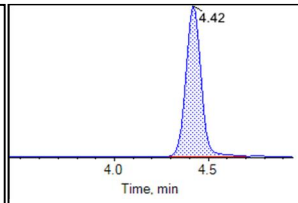
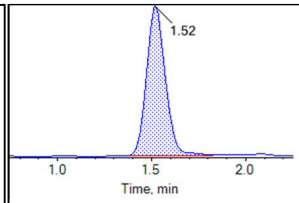


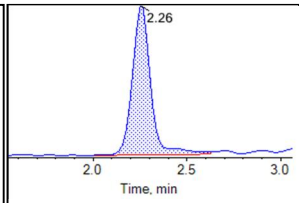
13C7-PFUnA



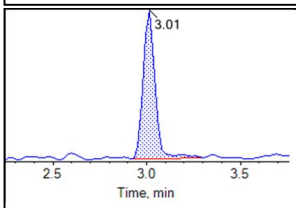
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

BATTELLE

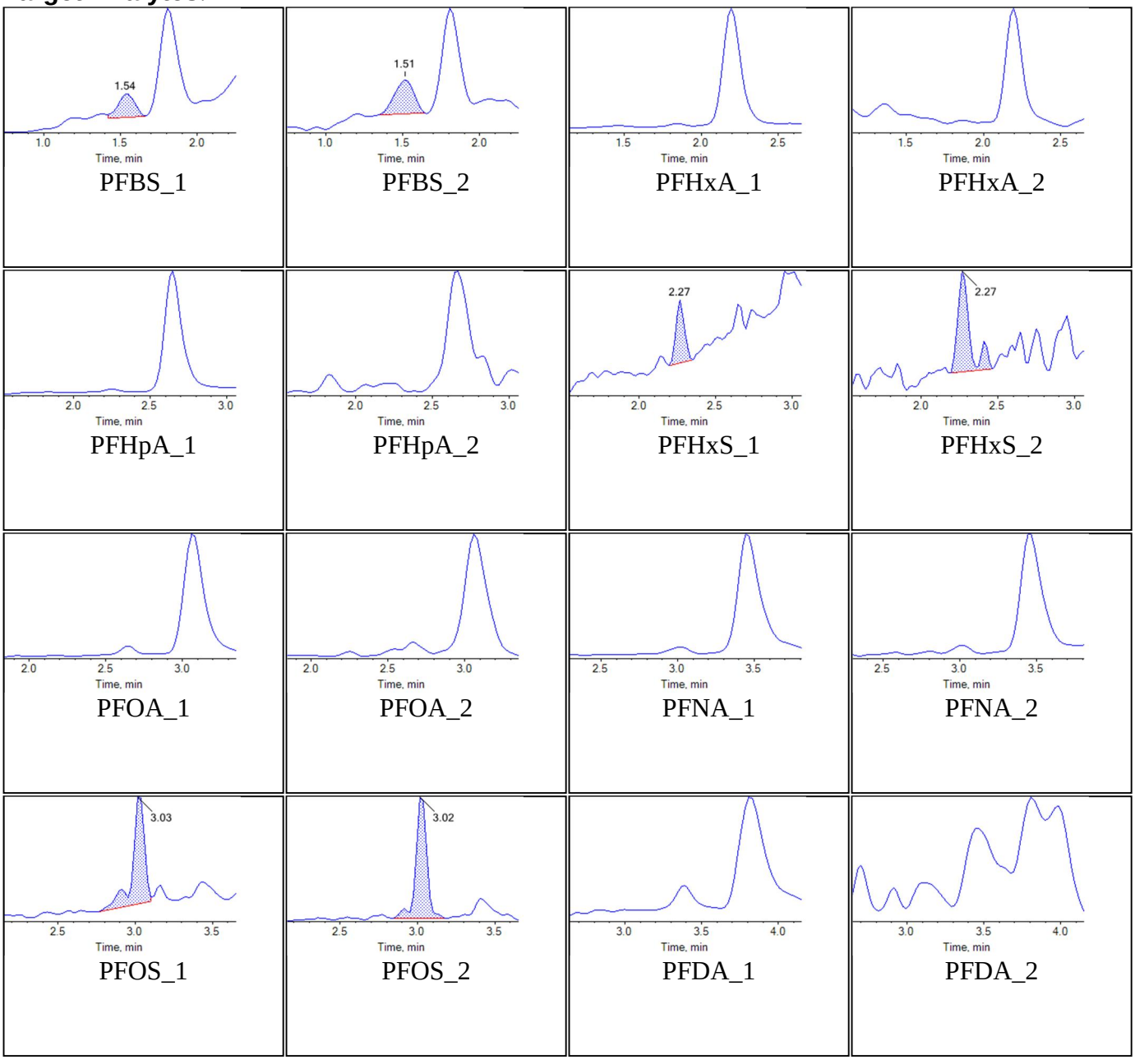
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:45:19 PM

Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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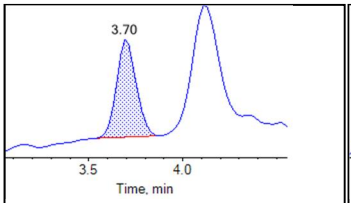
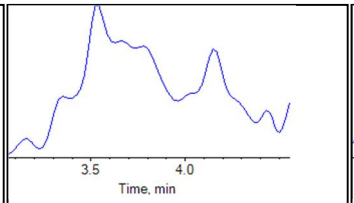
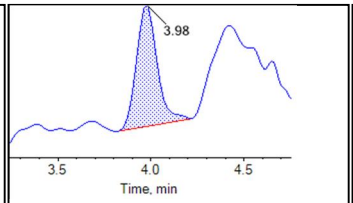


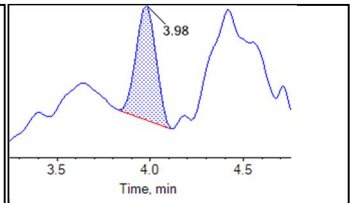
PFUnA_1



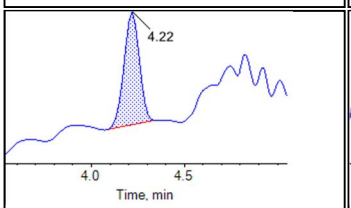
PFUnA_2



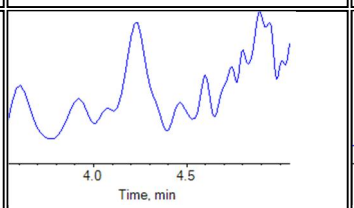
PFDoA_1



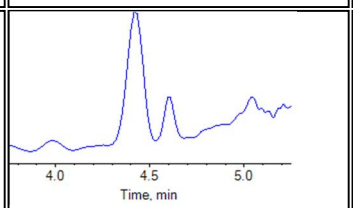
PFDoA_2



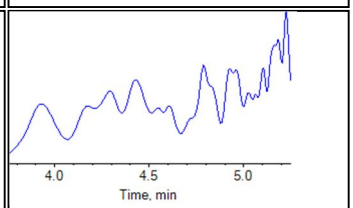
PFTrDA_1



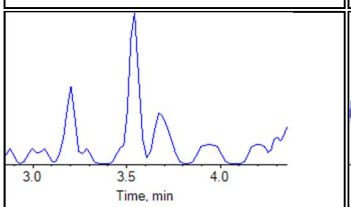
PFTrDA_2



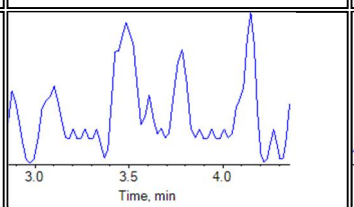
PFTeDA_1



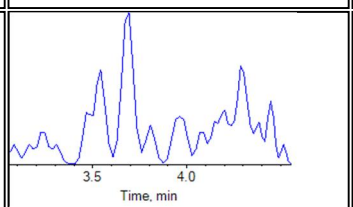
PFTeDA_2



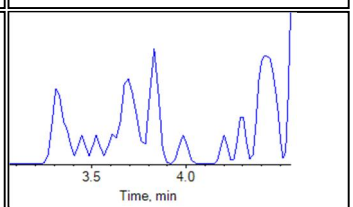
NMeFOSAA_1



NMeFOSAA_2



NEtFOSAA_1



NEtFOSAA_2

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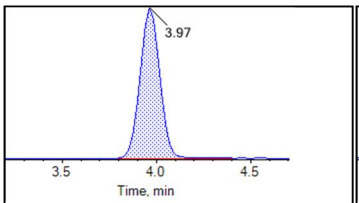
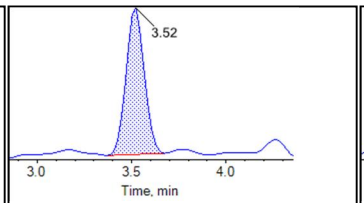
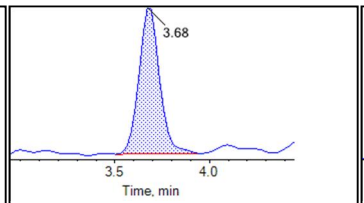


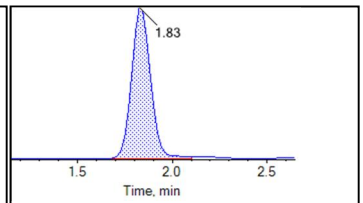
13C2-PFDoA



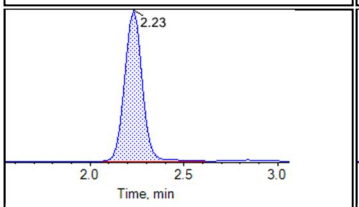
d3-MeFOSAA



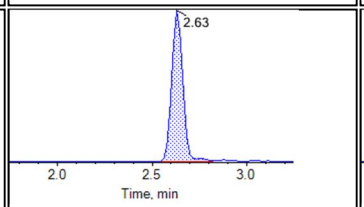
d5-EtFOSAA



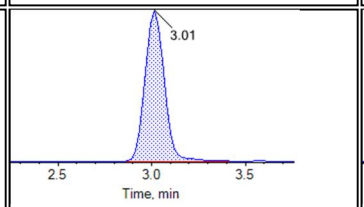
13C5-PFHxA



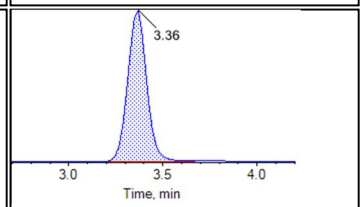
13C4-PFHpA



13C8-PFOA



13C9-PFNA



13C6-PFDA

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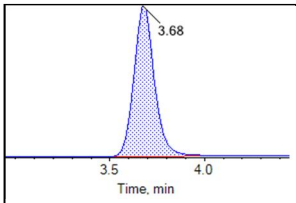
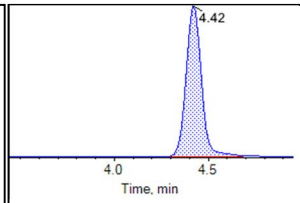


13C7-PFUnA



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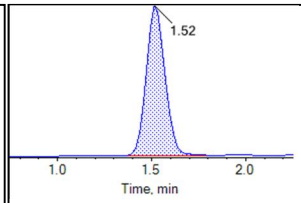
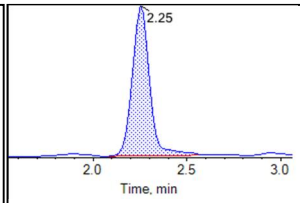
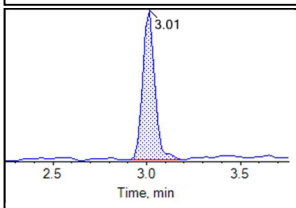


13C3-PFBS



13C3-PFHxS



13C8-PFOS

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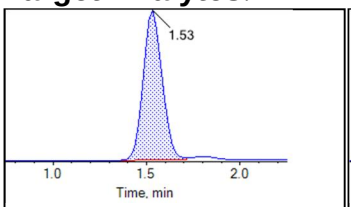
Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Chromatograms

Target Analytes:



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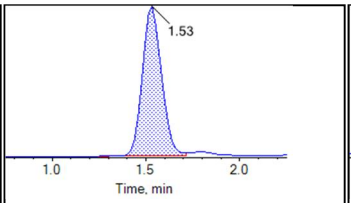

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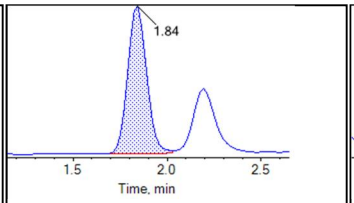

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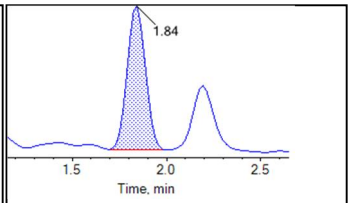

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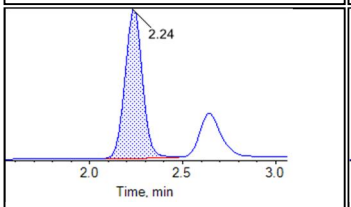

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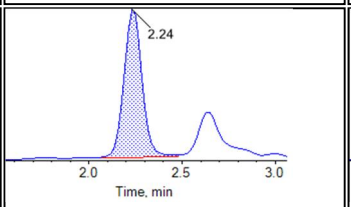

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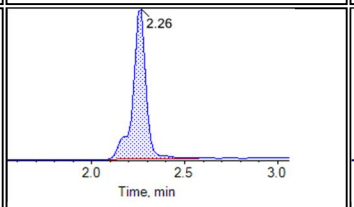

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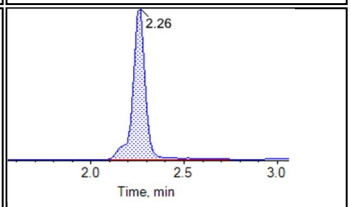

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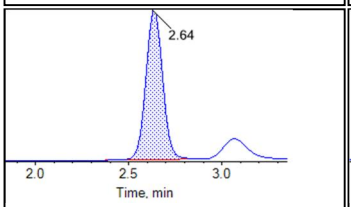

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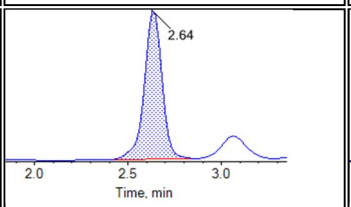

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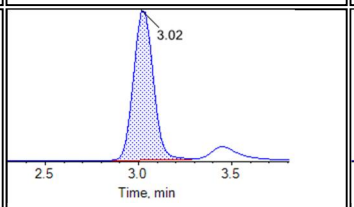

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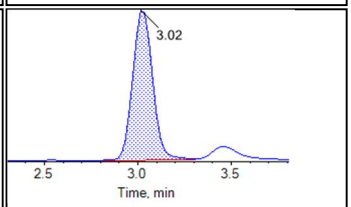

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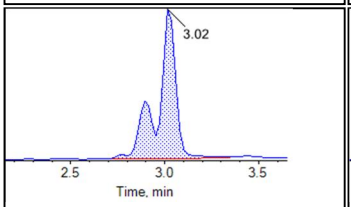

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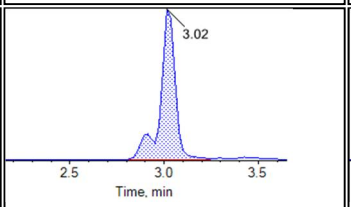

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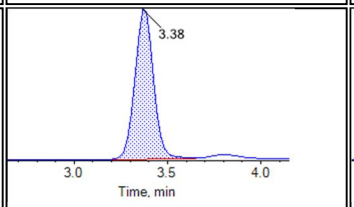

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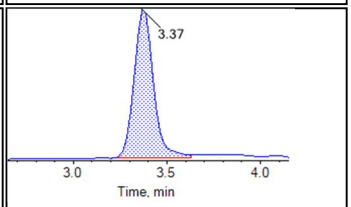

PFDA_2

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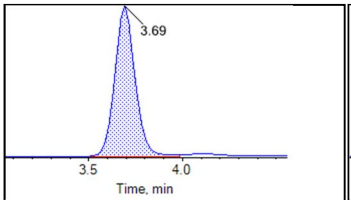

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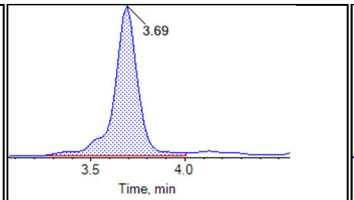

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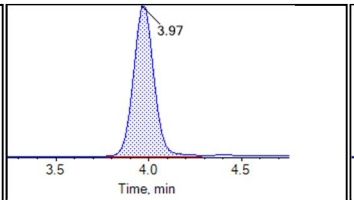

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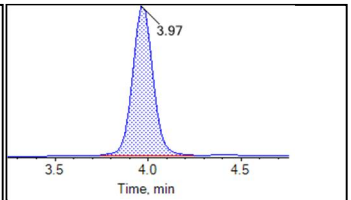

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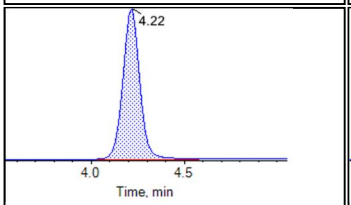

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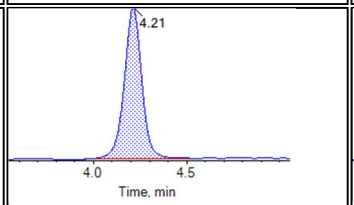

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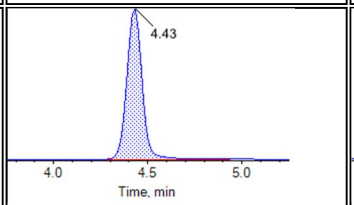

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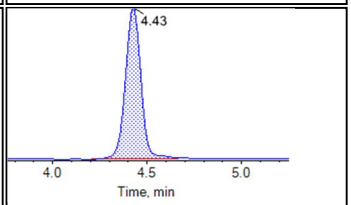

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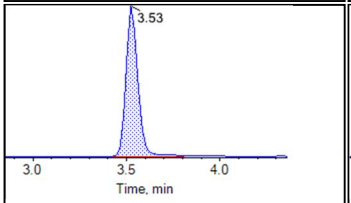

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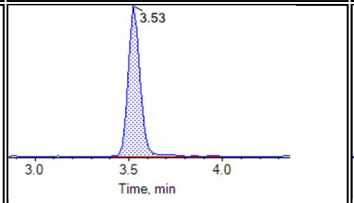

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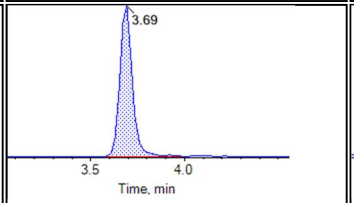

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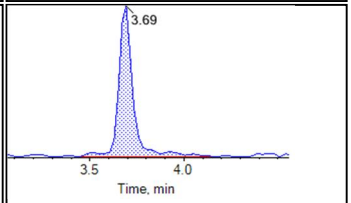

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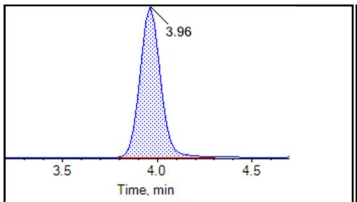
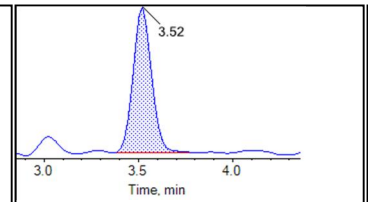
Internal Standards:



13C2-PFDoA



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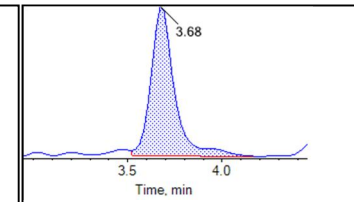

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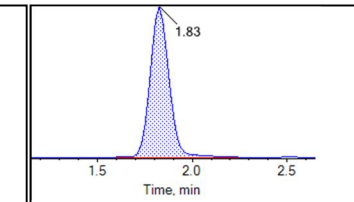
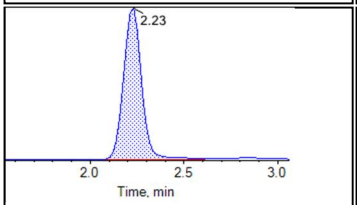


13C5-PFHxA



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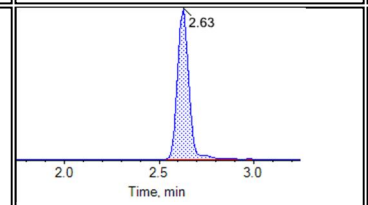
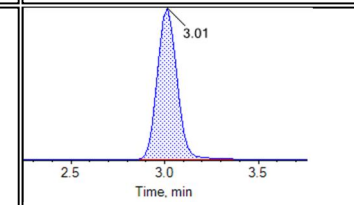
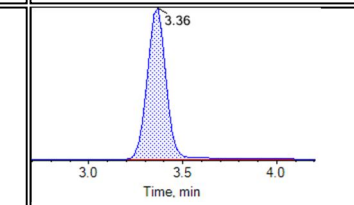


13C8-PFOA



13C9-PFNA



13C6-PFDA

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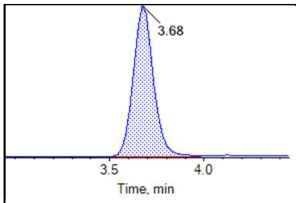
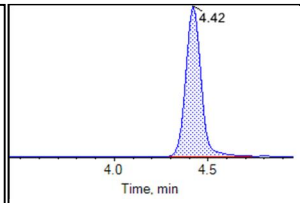
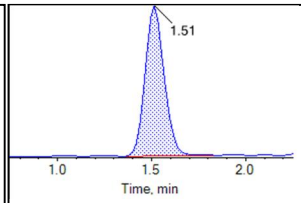


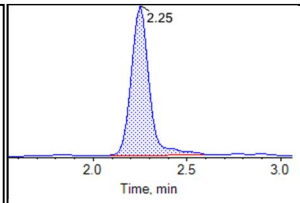
13C7-PFUnA



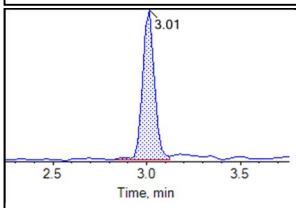
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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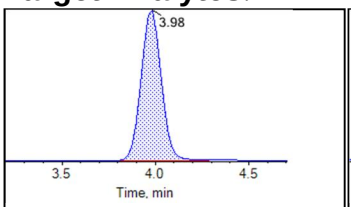
Printed: 18/09/2018 3:45:54 PM

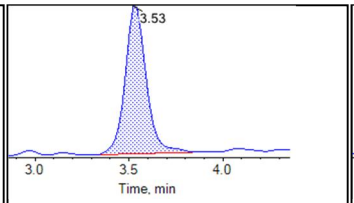
Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

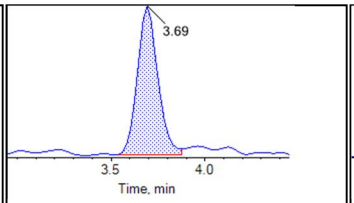
Target Analytes:



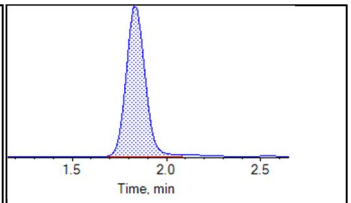
13C2-PFDoA



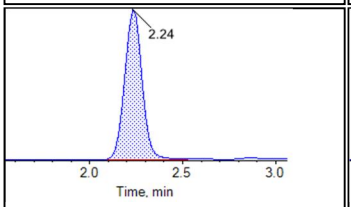
d3-MeFOSAA



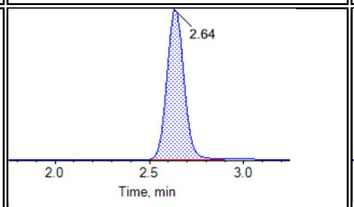
d5-EtFOSAA



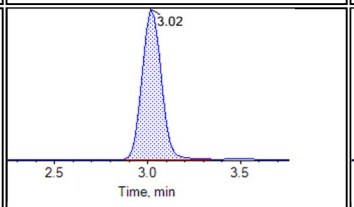
13C5-PFHxA



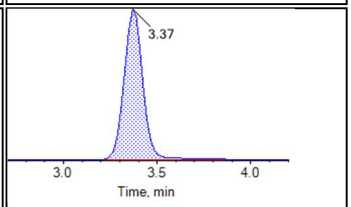
13C4-PFHpA



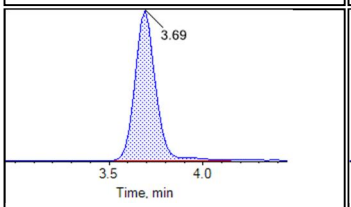
13C8-PFOA



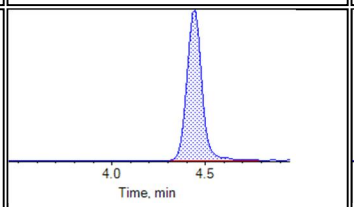
13C9-PFNA



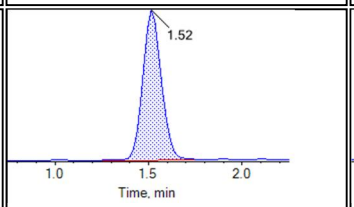
13C6-PFDA



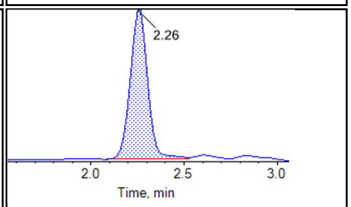
13C7-PFUnA



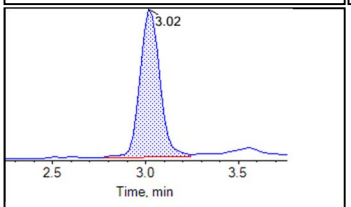
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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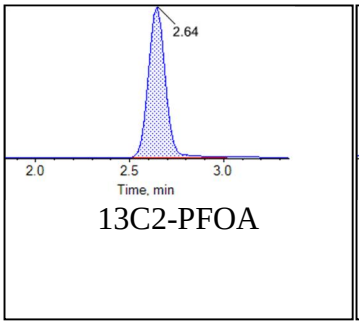

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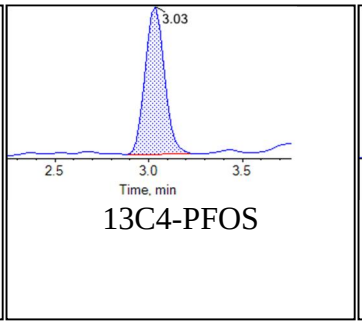
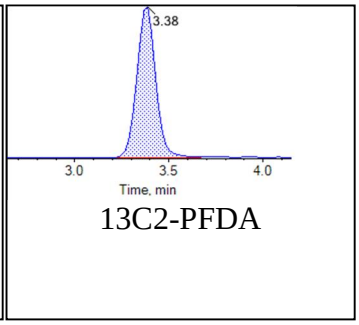


13C4-PFOS



13C2-PFDA

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Chromatogram Report

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Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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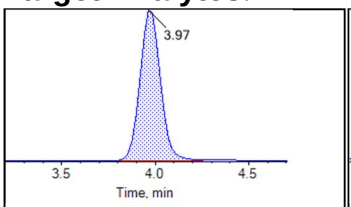
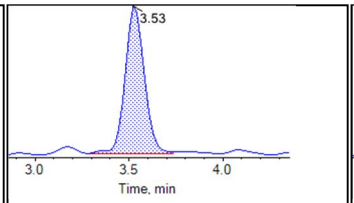
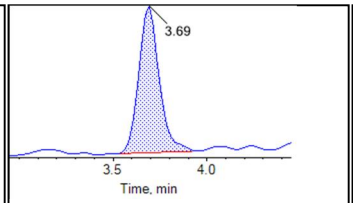


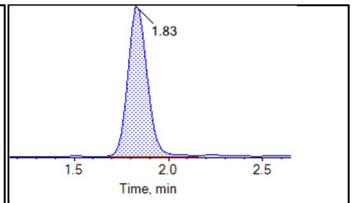
13C2-PFDoA



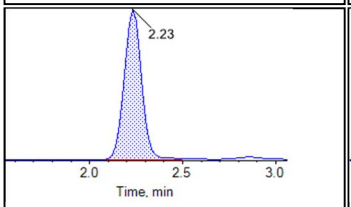
d3-MeFOSAA



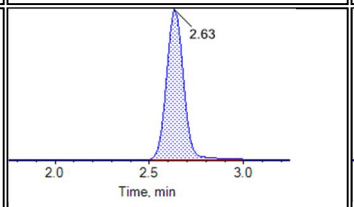
d5-EtFOSAA



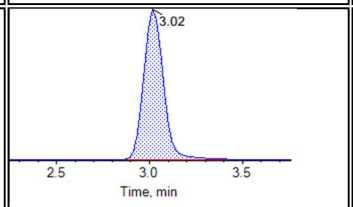
13C5-PFHxA



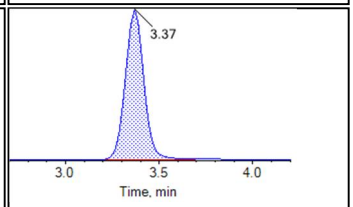
13C4-PFHpA



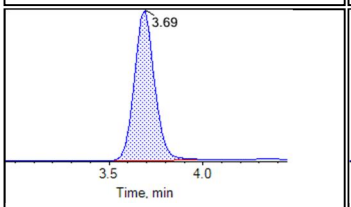
13C8-PFOA



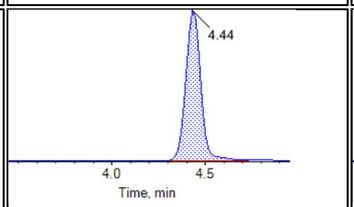
13C9-PFNA



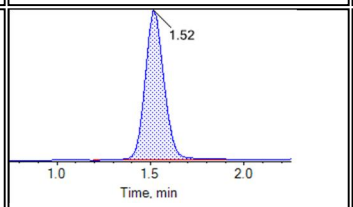
13C6-PFDA



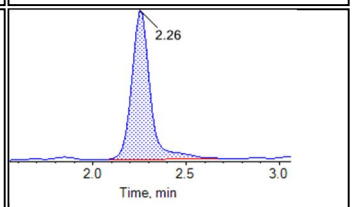
13C7-PFUnA



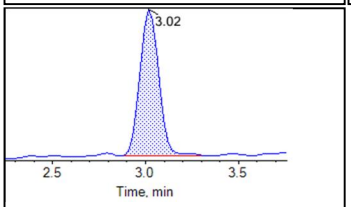
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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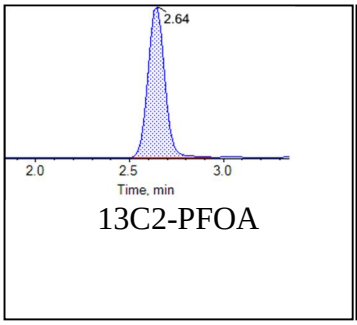
Internal Standards:



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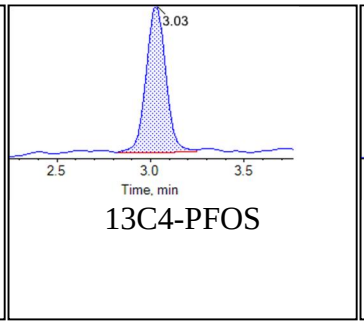
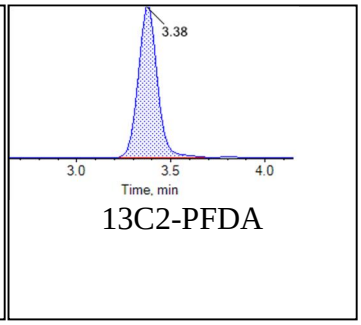


13C4-PFOS



13C2-PFDA

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Chromatogram Report

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Printed: 18/09/2018 3:46:07 PM

Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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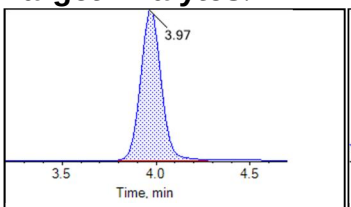

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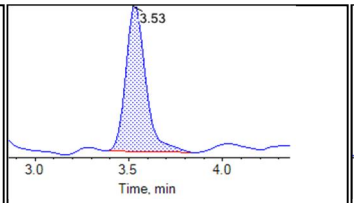
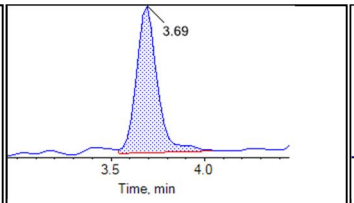
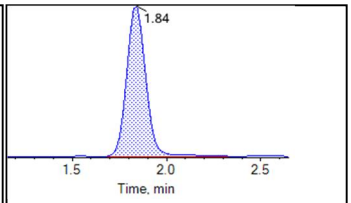


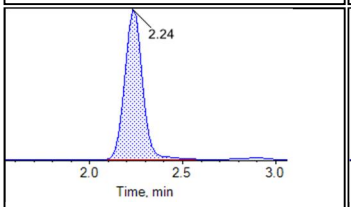
d3-MeFOSAA



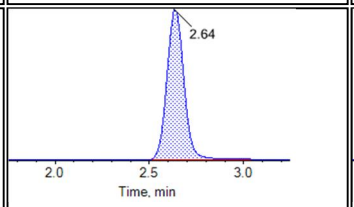
d5-EtFOSAA



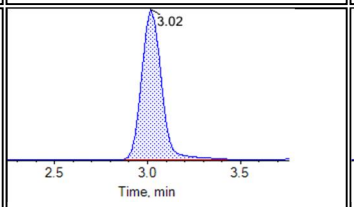
13C5-PFHxA



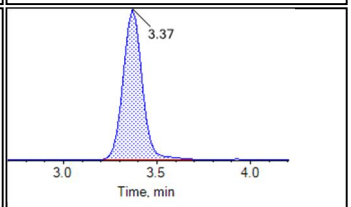
13C4-PFHpA



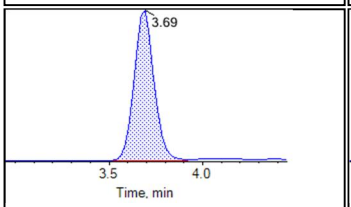
13C8-PFOA



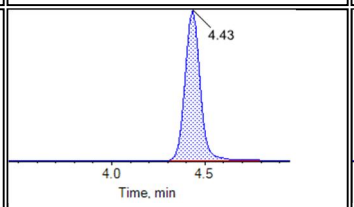
13C9-PFNA



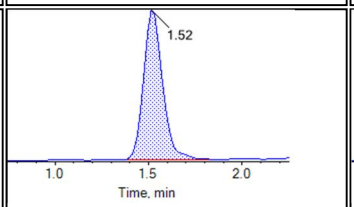
13C6-PFDA



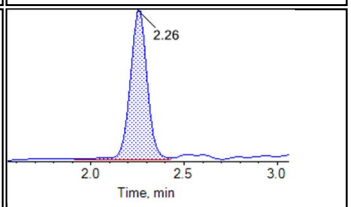
13C7-PFUnA



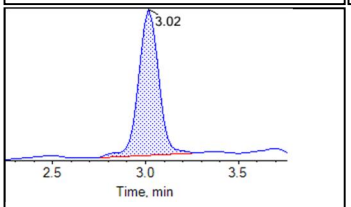
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

Chromatogram Report

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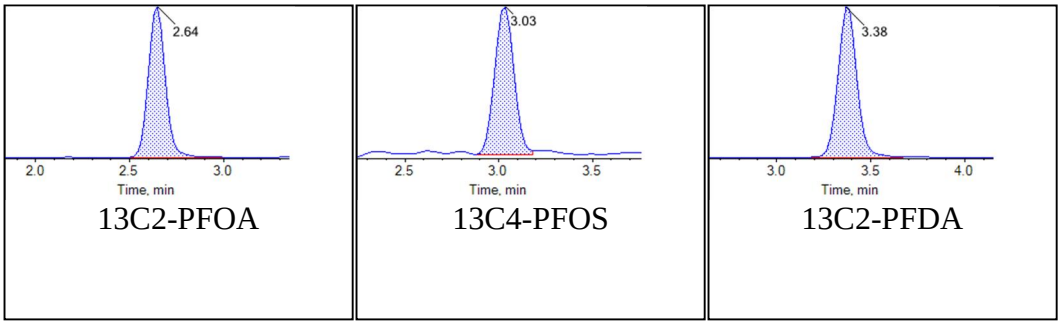

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Chromatogram Report

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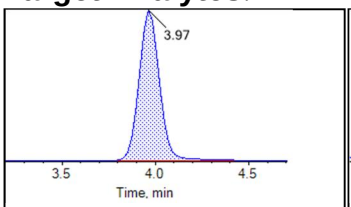
Printed: 18/09/2018 3:46:14 PM

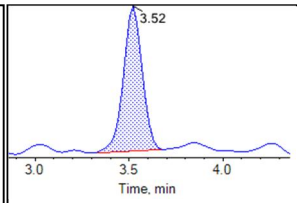
Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

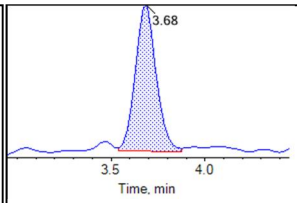
Target Analytes:



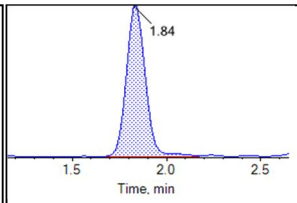
13C2-PFDoA



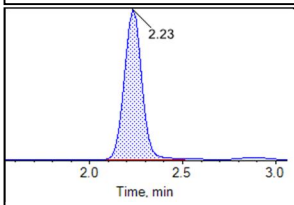
d3-MeFOSAA



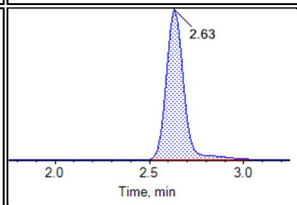
d5-EtFOSAA



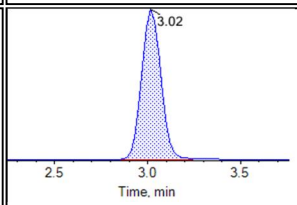
13C5-PFHxA



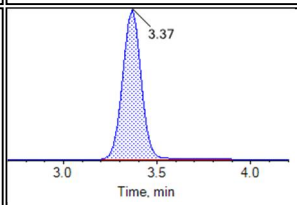
13C4-PFHpA



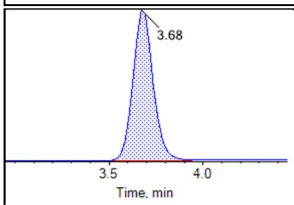
13C8-PFOA



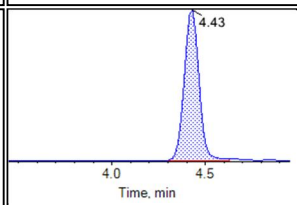
13C9-PFNA



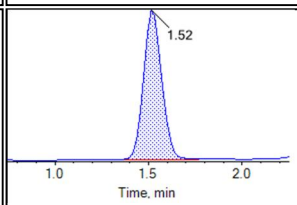
13C6-PFDA



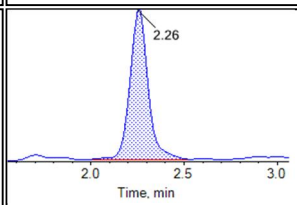
13C7-PFUnA



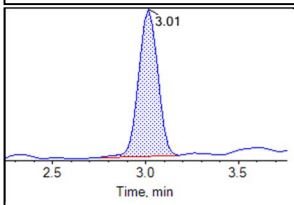
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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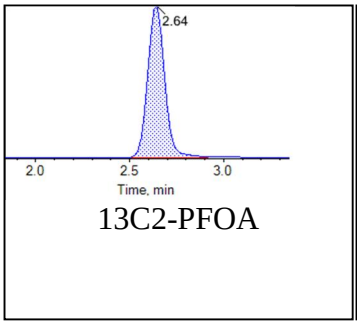

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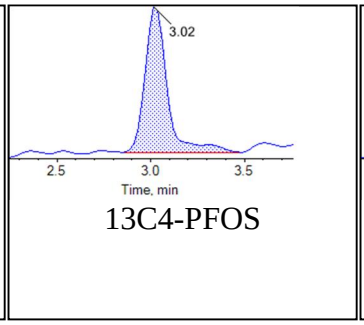
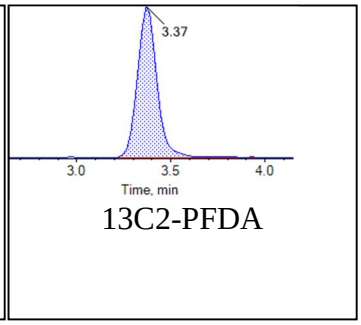


13C4-PFOS



13C2-PFDA

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Chromatogram Report

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Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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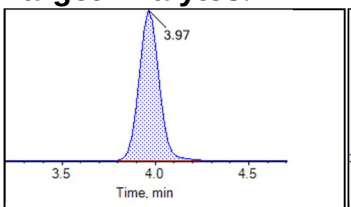
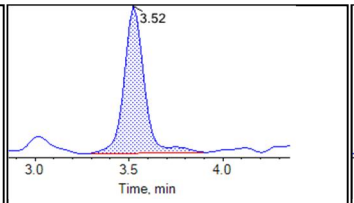
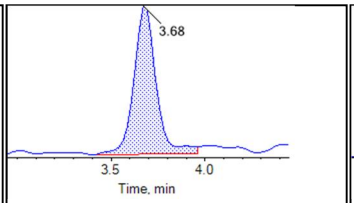


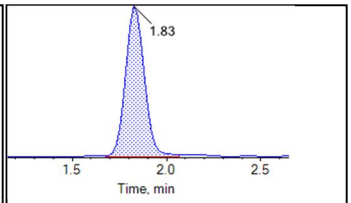
13C2-PFDoA



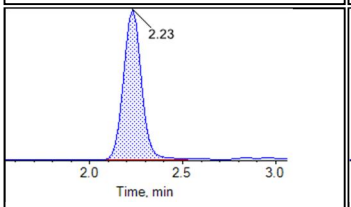
d3-MeFOSAA



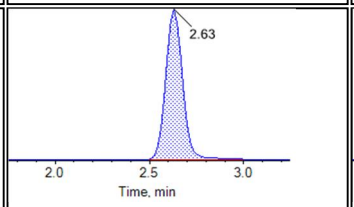
d5-EtFOSAA



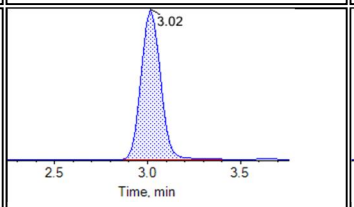
13C5-PFHxA



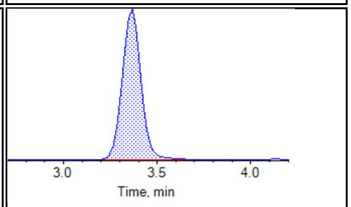
13C4-PFHpA



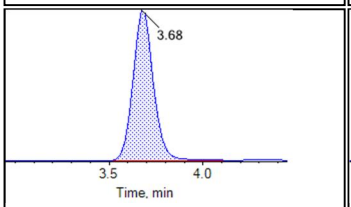
13C8-PFOA



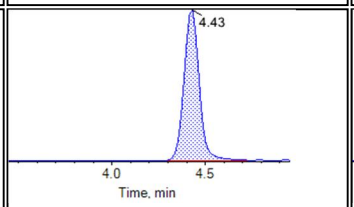
13C9-PFNA



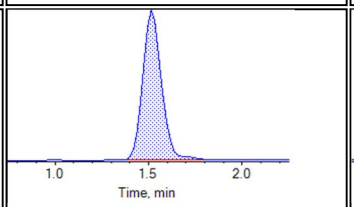
13C6-PFDA



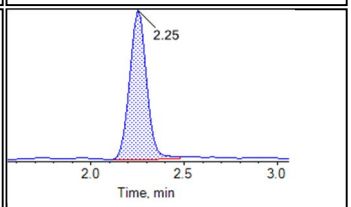
13C7-PFUnA



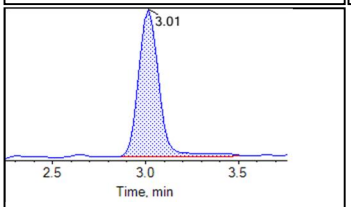
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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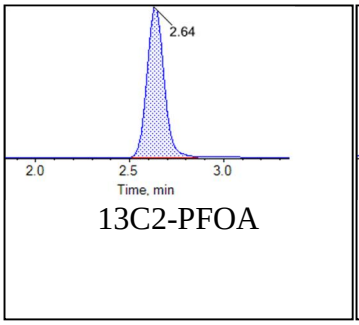

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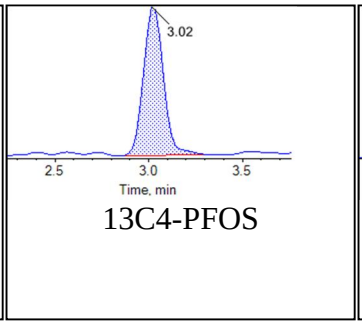

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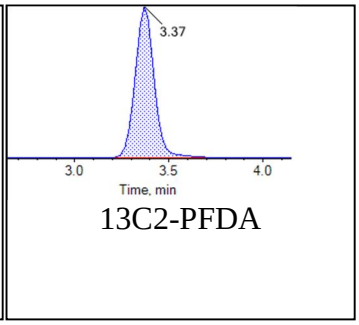

13C2-PFDA

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Chromatogram Report

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Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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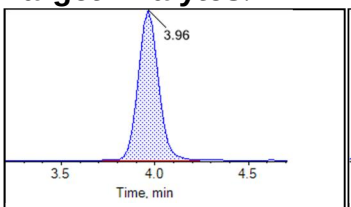
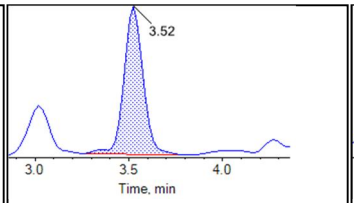
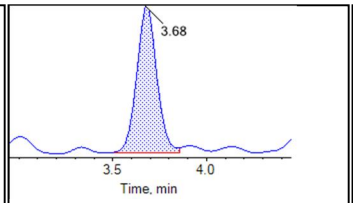


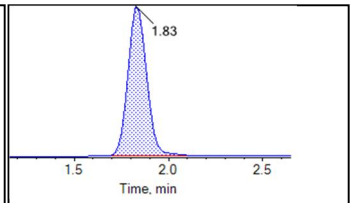
13C2-PFDoA



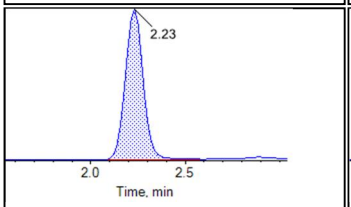
d3-MeFOSAA



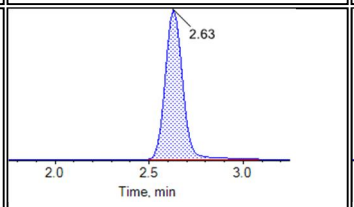
d5-EtFOSAA



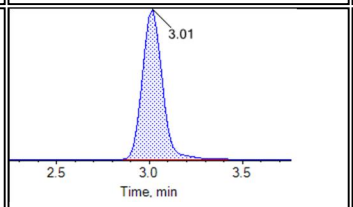
13C5-PFHxA



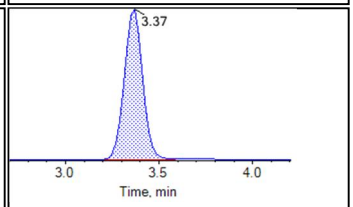
13C4-PFHpA



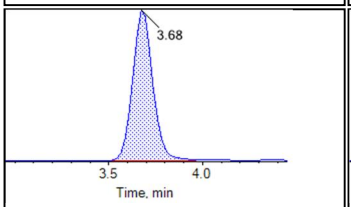
13C8-PFOA



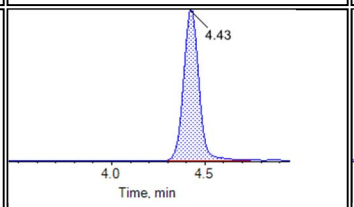
13C9-PFNA



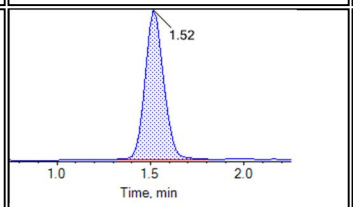
13C6-PFDA



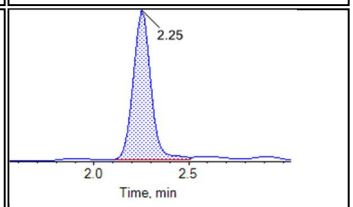
13C7-PFUnA



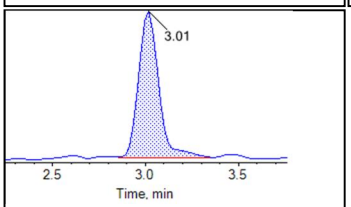
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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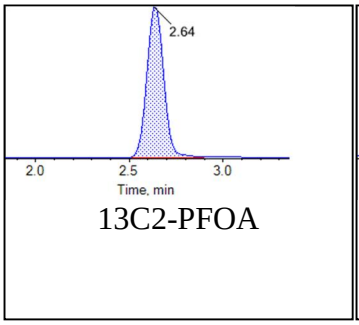

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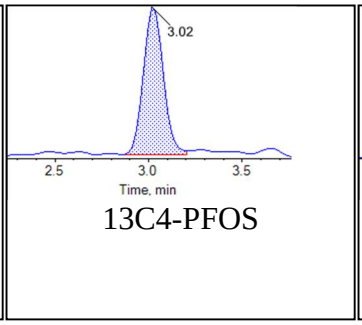

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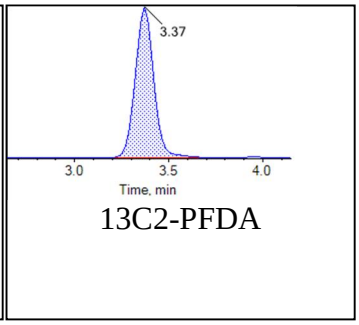

13C2-PFDA

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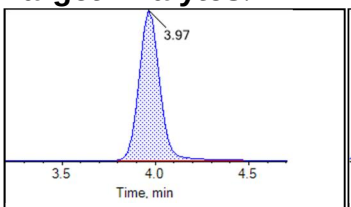
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:46:26 PM

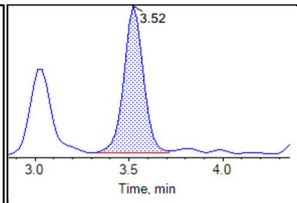
Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

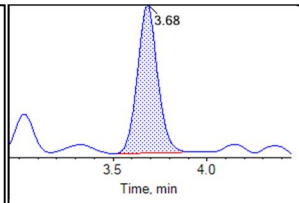
Target Analytes:



13C2-PFDoA



d3-MeFOSAA



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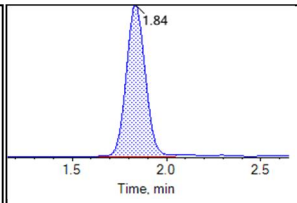
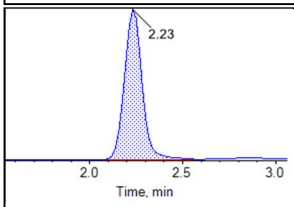
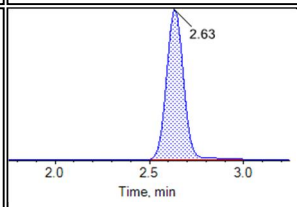


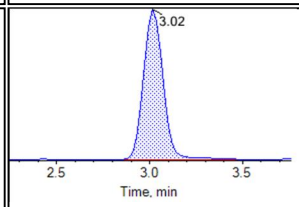
13C5-PFHxA



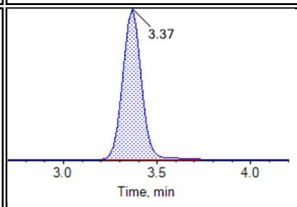
13C4-PFHpA



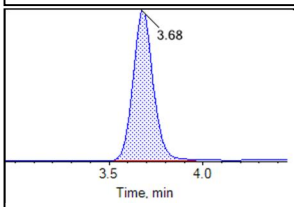
13C8-PFOA



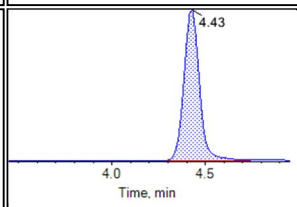
13C9-PFNA



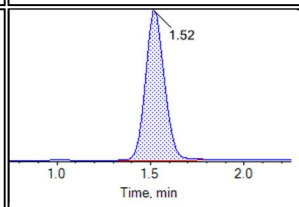
13C6-PFDA



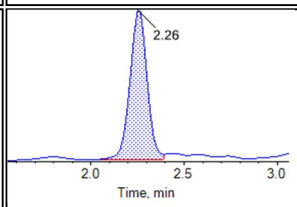
13C7-PFUnA



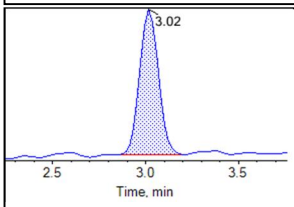
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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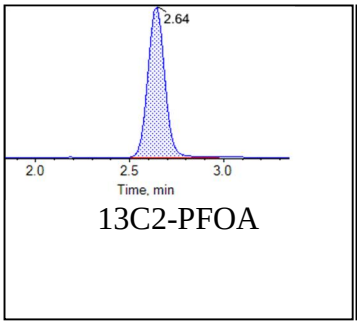

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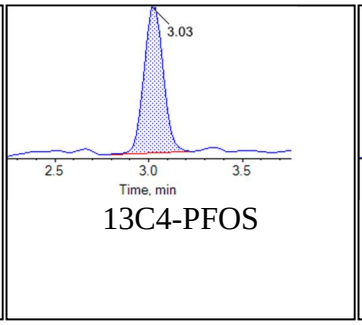

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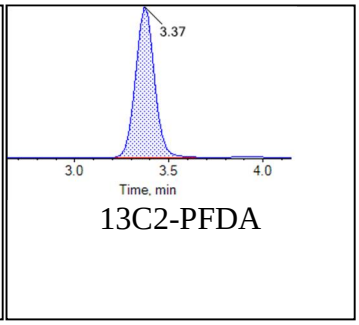

13C2-PFDA

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Chromatogram Report

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Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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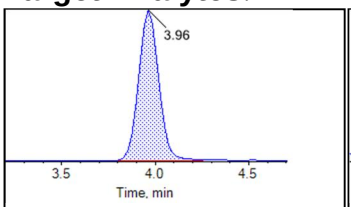
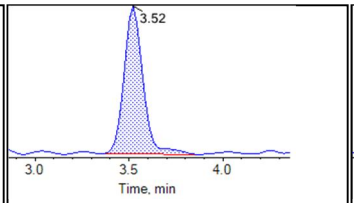
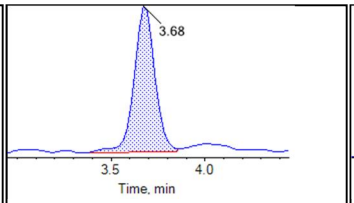


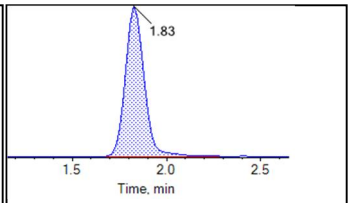
13C2-PFDoA



d3-MeFOSAA



d5-EtFOSAA



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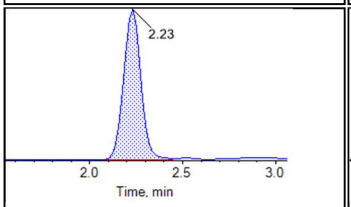
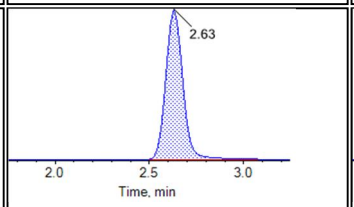
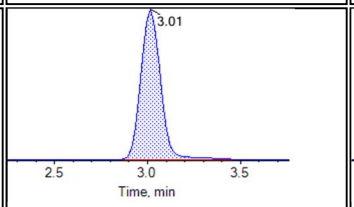


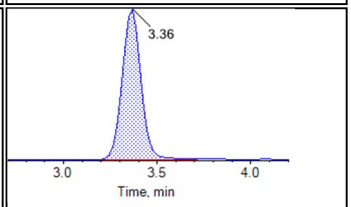
13C4-PFHpA



13C8-PFOA



13C9-PFNA



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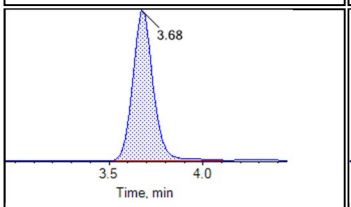
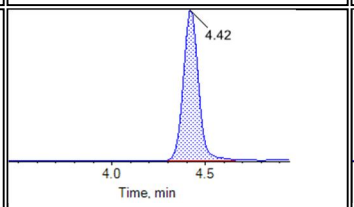
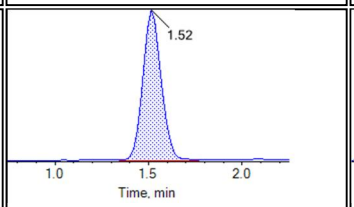


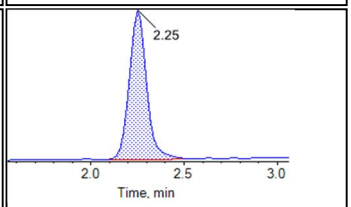
13C7-PFUnA



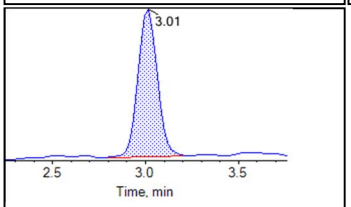
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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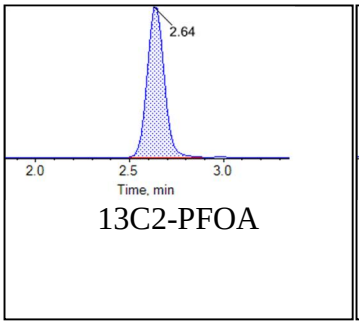

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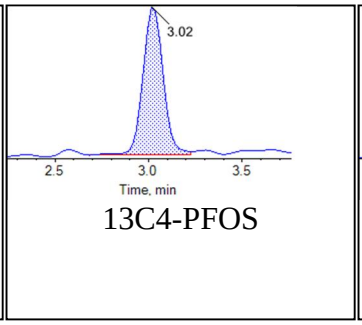

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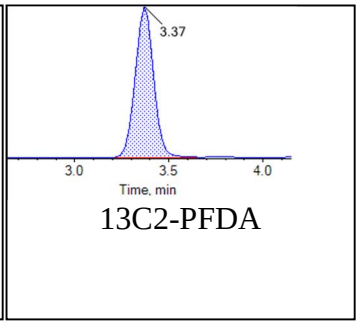

13C2-PFDA

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Chromatogram Report

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Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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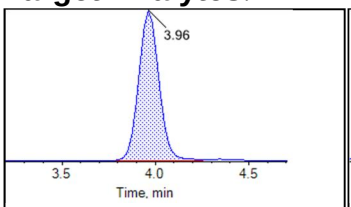
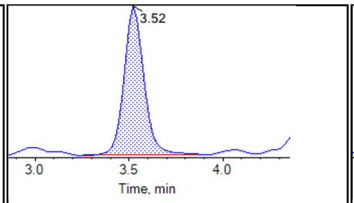
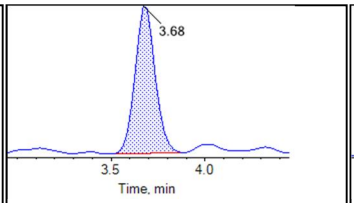


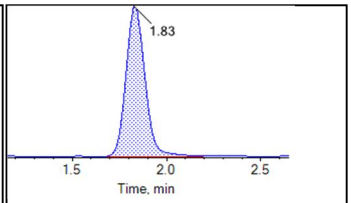
13C2-PFDoA



d3-MeFOSAA



d5-EtFOSAA



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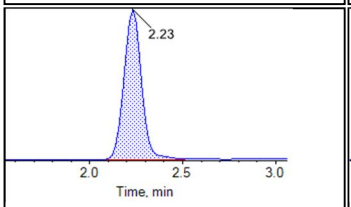

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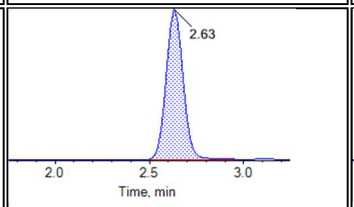

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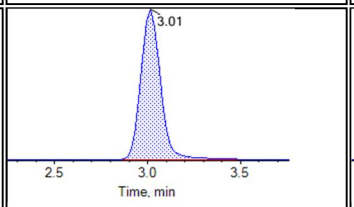
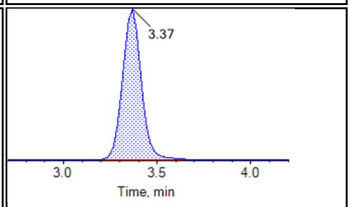
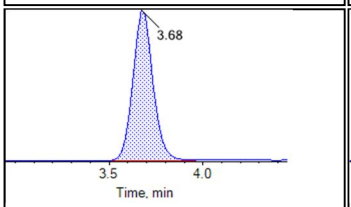


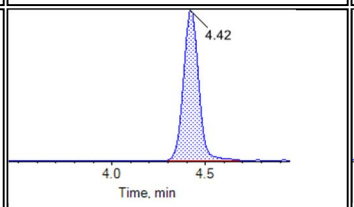
13C9-PFNA



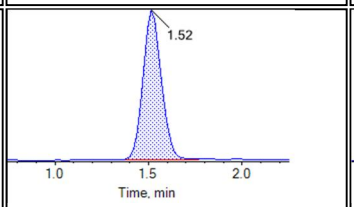
13C6-PFDA



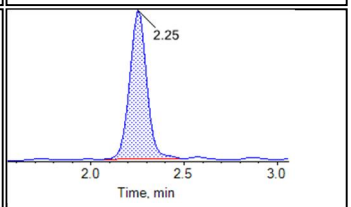
13C7-PFUnA



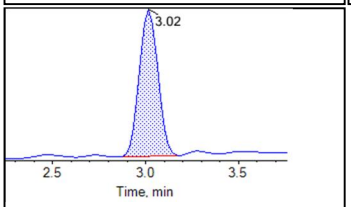
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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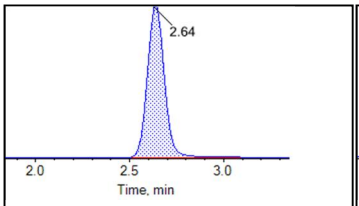

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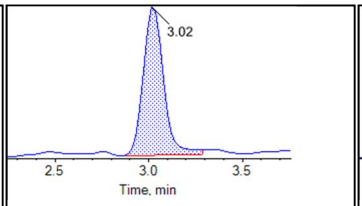

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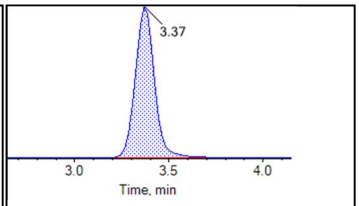

13C2-PFDA

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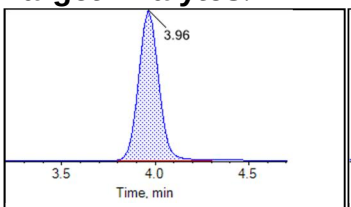
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:46:47 PM

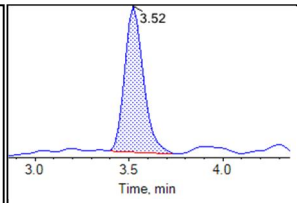
Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

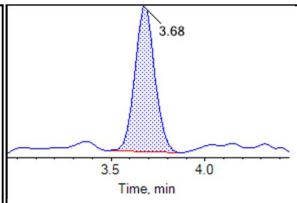
Target Analytes:



13C2-PFDoA



d3-MeFOSAA



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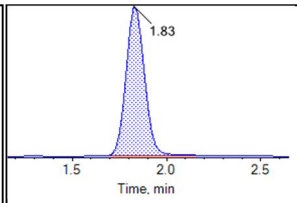

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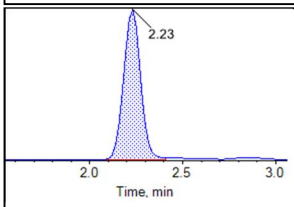

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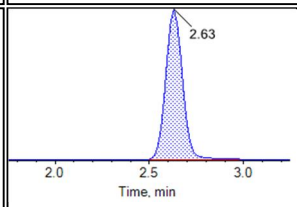
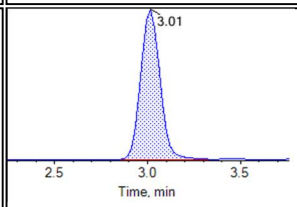
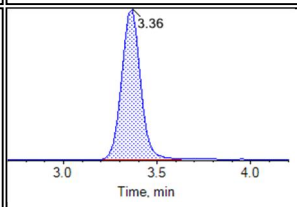


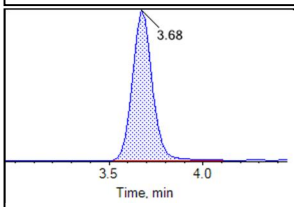
13C8-PFOA



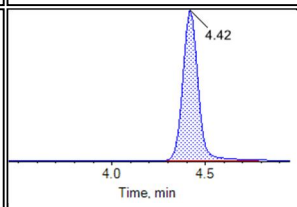
13C9-PFNA



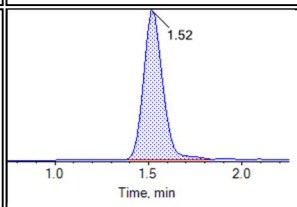
13C6-PFDA



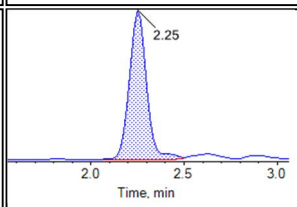
13C7-PFUnA



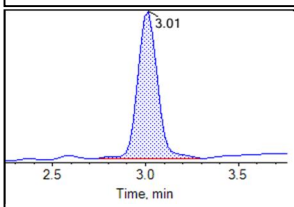
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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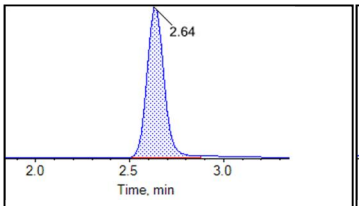
Internal Standards:



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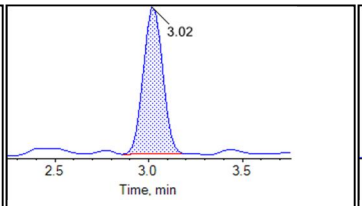
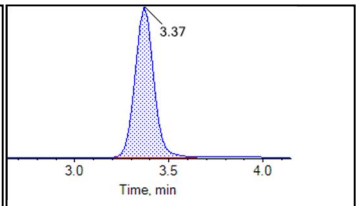


13C4-PFOS



13C2-PFDA

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Chromatogram Report

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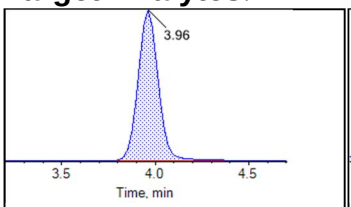
Printed: 18/09/2018 3:46:51 PM

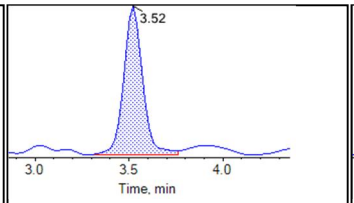
Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

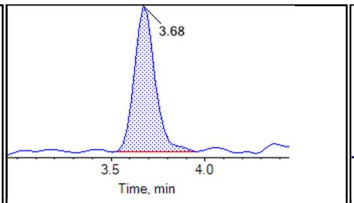
Target Analytes:



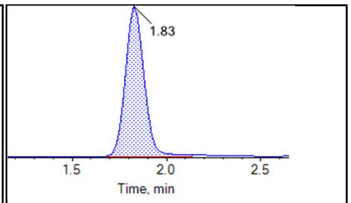
13C2-PFDoA



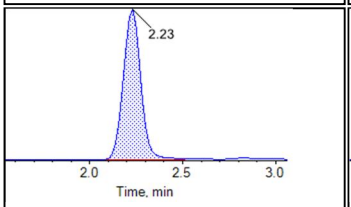
d3-MeFOSAA



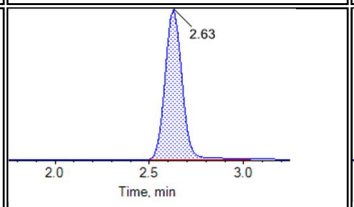
d5-EtFOSAA



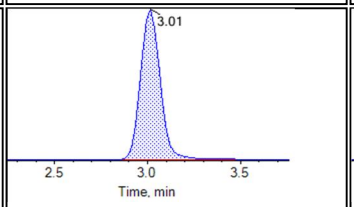
13C5-PFHxA



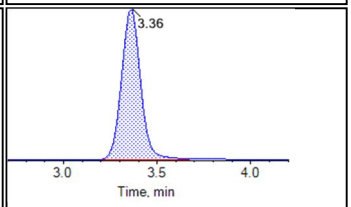
13C4-PFHpA



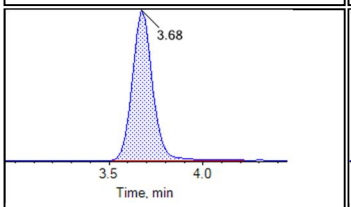
13C8-PFOA



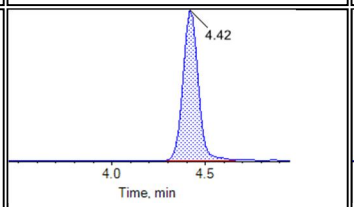
13C9-PFNA



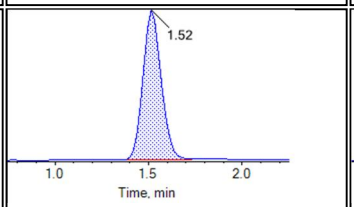
13C6-PFDA



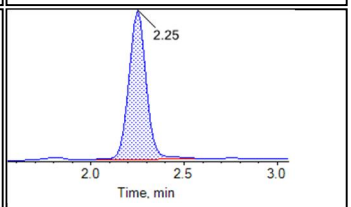
13C7-PFUnA



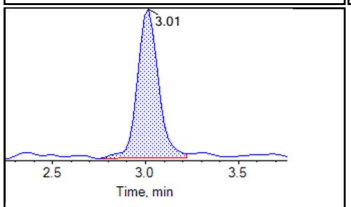
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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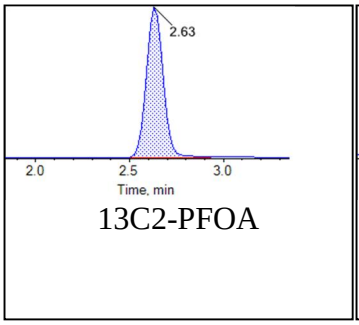
Internal Standards:



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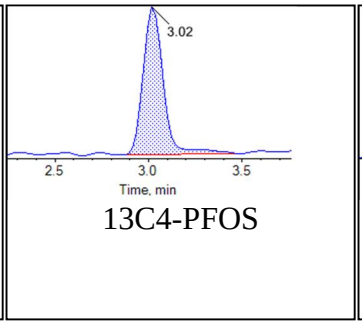
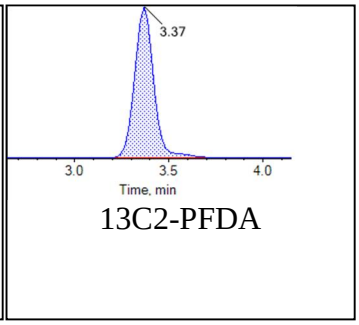


13C4-PFOS



13C2-PFDA

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Chromatogram Report

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Printed: 18/09/2018 3:46:56 PM

Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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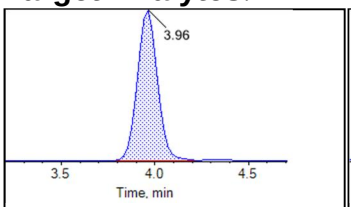
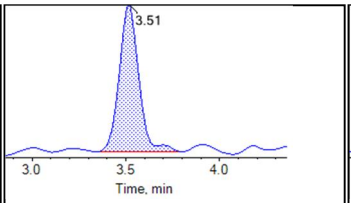
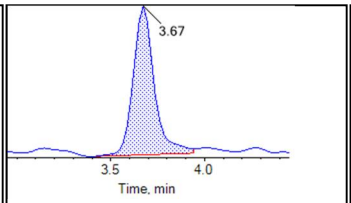


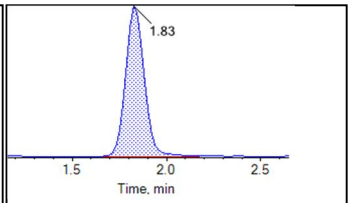
13C2-PFDoA



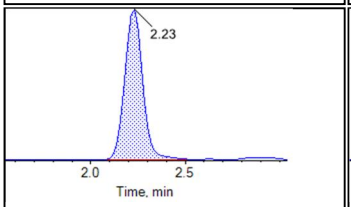
d3-MeFOSAA



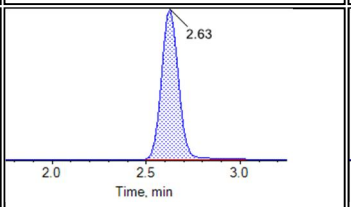
d5-EtFOSAA



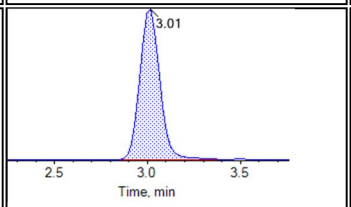
13C5-PFHxA



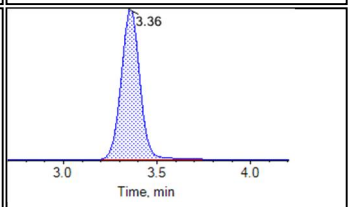
13C4-PFHpA



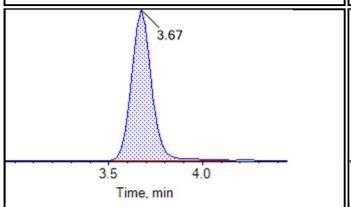
13C8-PFOA



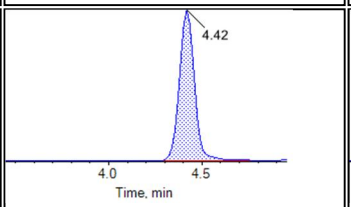
13C9-PFNA



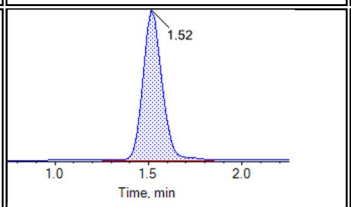
13C6-PFDA



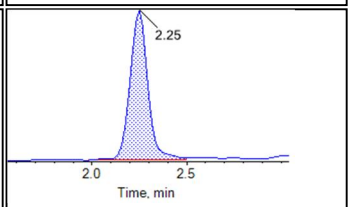
13C7-PFUnA



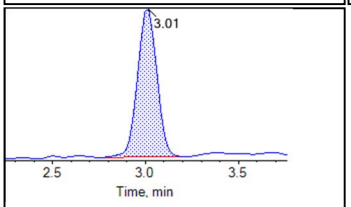
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

Chromatogram Report

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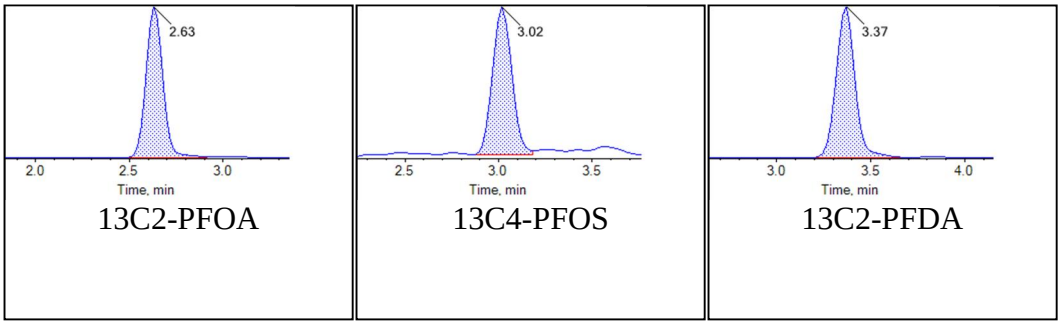
Printed: 18/09/2018 3:46:56 PM

Internal Standards:



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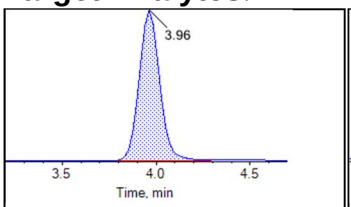
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:47:00 PM

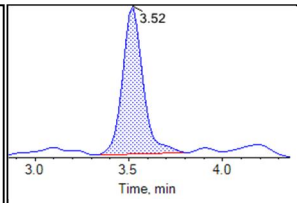
Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

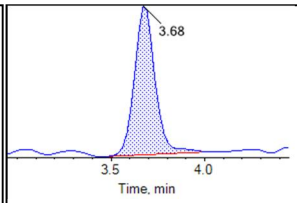
Target Analytes:



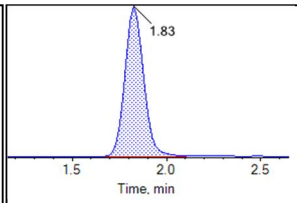
13C2-PFDoA



d3-MeFOSAA



d5-EtFOSAA



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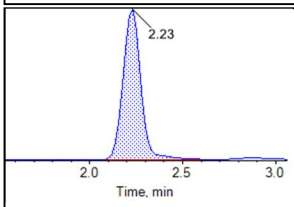
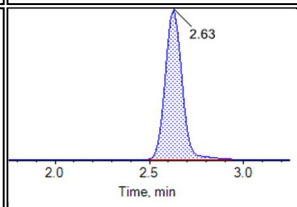


13C4-PFHpA



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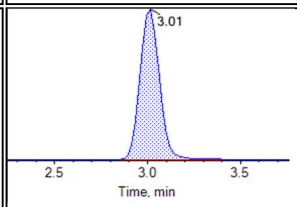
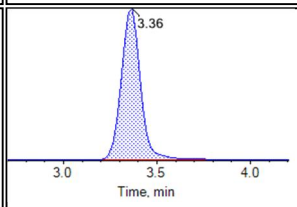
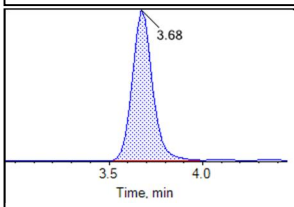


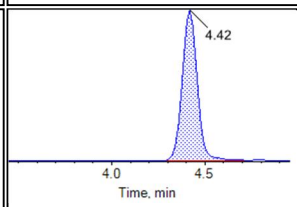
13C9-PFNA



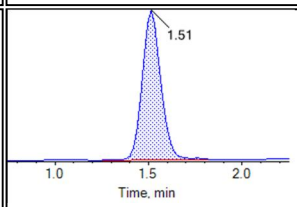
13C6-PFDA



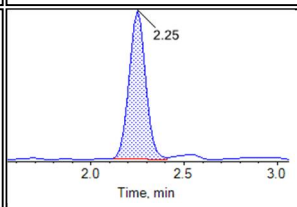
13C7-PFUnA



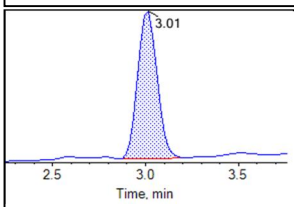
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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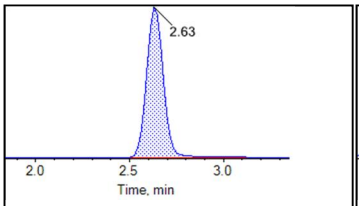

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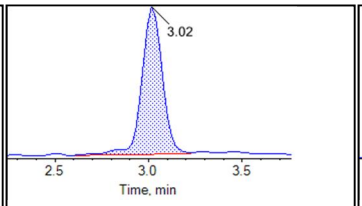
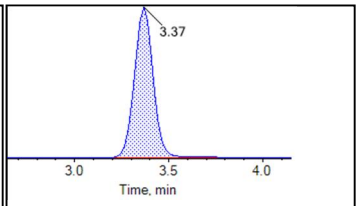


13C4-PFOS



13C2-PFDA

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Chromatogram Report

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Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

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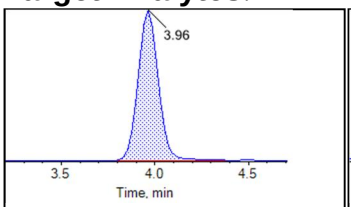
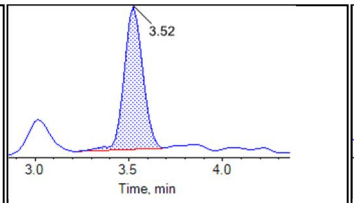
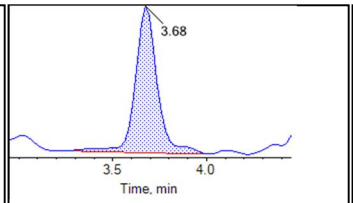


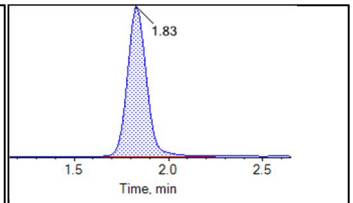
13C2-PFDoA



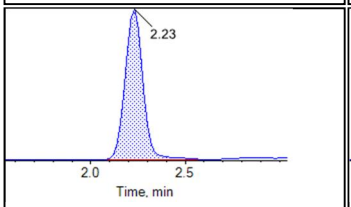
d3-MeFOSAA



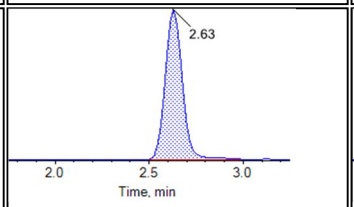
d5-EtFOSAA



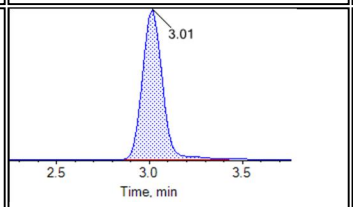
13C5-PFHxA



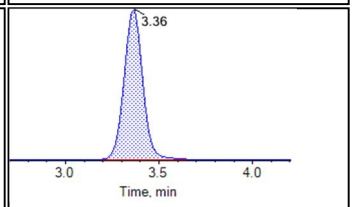
13C4-PFHpA



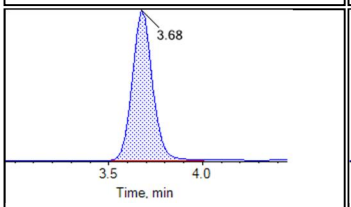
13C8-PFOA



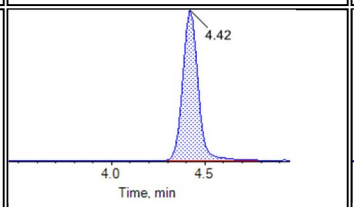
13C9-PFNA



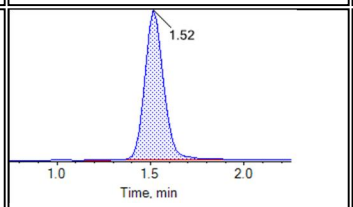
13C6-PFDA



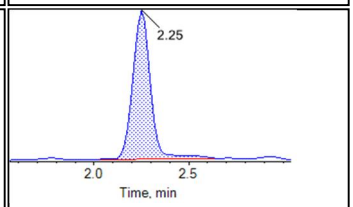
13C7-PFUnA



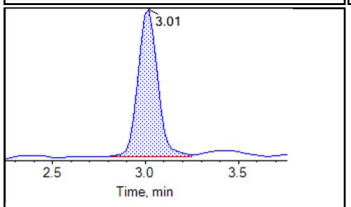
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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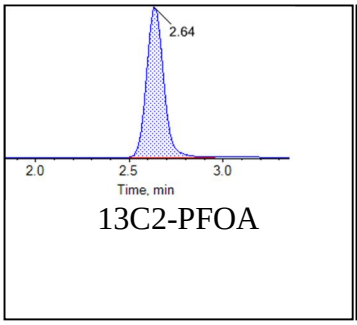
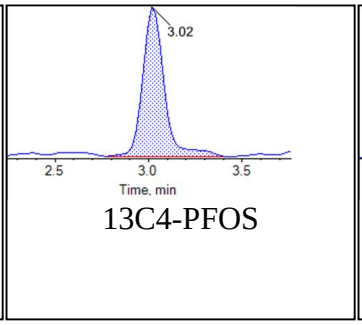
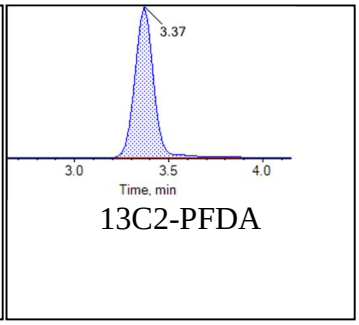


13C2-PFOA



13C4-PFOS



13C2-PFDA

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Chromatogram Report

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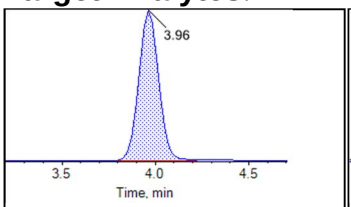
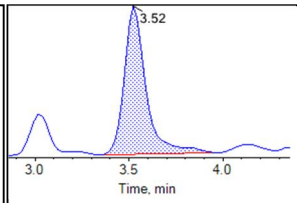
Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

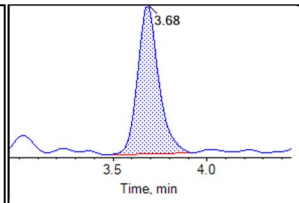
Target Analytes:



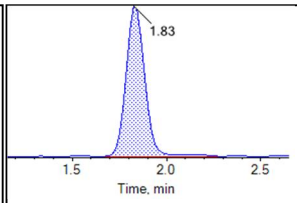
13C2-PFDoA



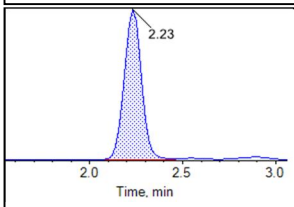
d3-MeFOSAA



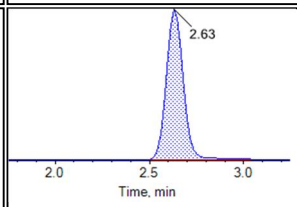
d5-EtFOSAA



13C5-PFHxA



13C4-PFHpA



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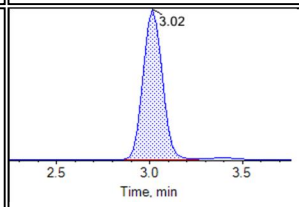
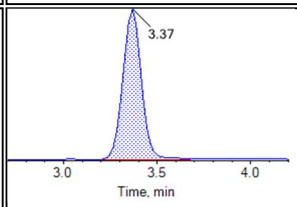
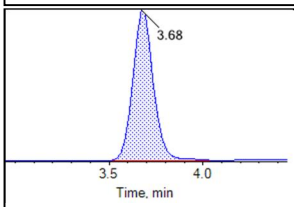


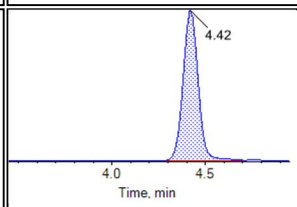
13C9-PFNA



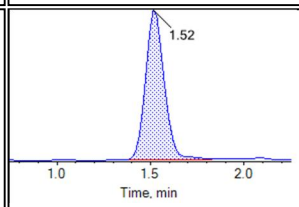
13C6-PFDA



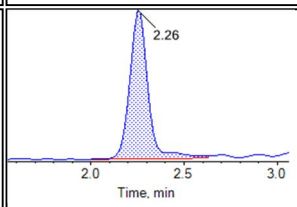
13C7-PFUnA



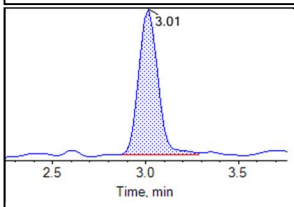
13C2-PFTeDA



13C3-PFBS



13C3-PFHxS



13C8-PFOS

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Chromatogram Report

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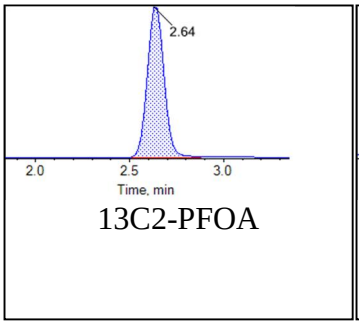

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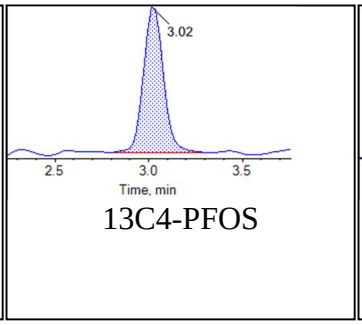
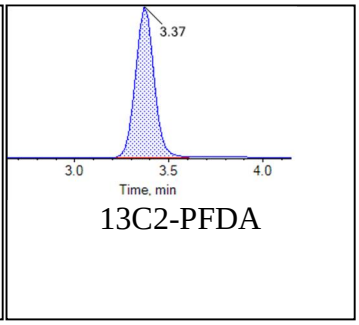


13C4-PFOS



13C2-PFDA

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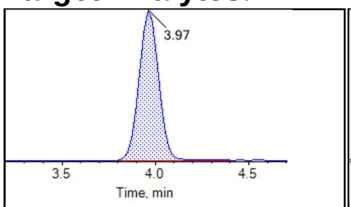
Chromatogram Report

Created with Analyst Reporter
Printed: 18/09/2018 3:47:13 PM

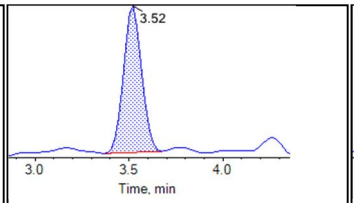
Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

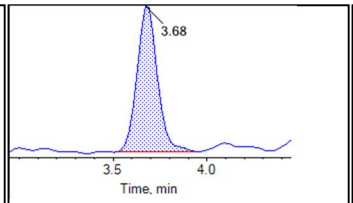
Target Analytes:



13C2-PFDoA



d3-MeFOSAA



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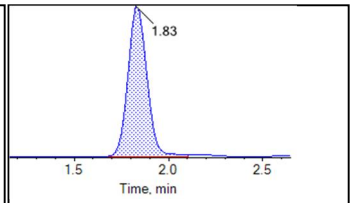
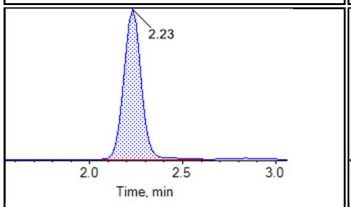


13C5-PFHxA



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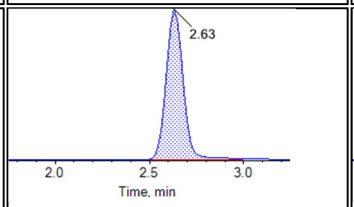
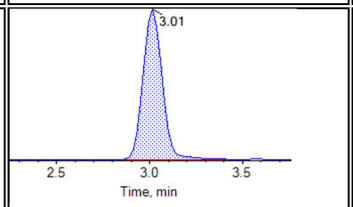
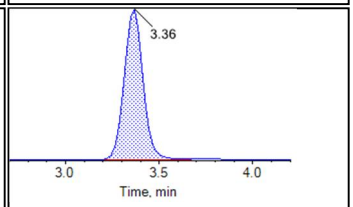


13C8-PFOA



13C9-PFNA



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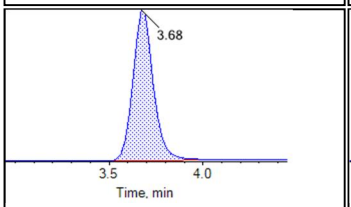
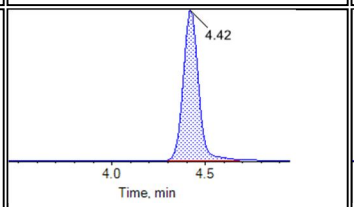


13C7-PFUnA



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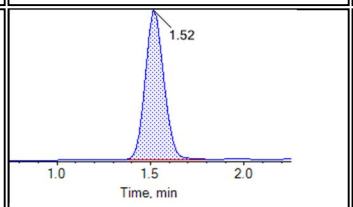
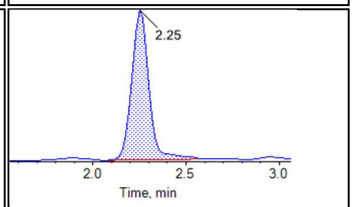


13C3-PFBS



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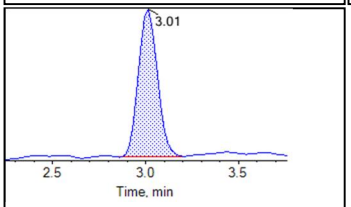

13C8-PFOS

Chromatogram Report

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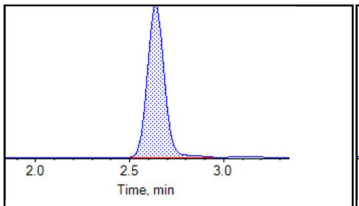
Internal Standards:



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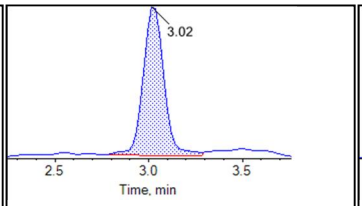
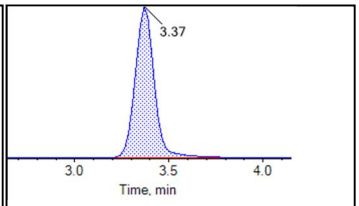


13C4-PFOS



13C2-PFDA

BATTELLE

Chromatogram Report

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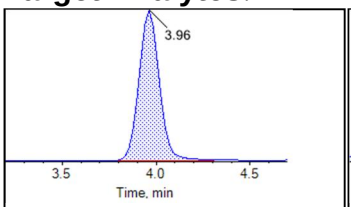
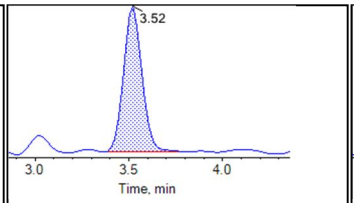
Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Chromatograms

Target Analytes:



13C2-PFDoA



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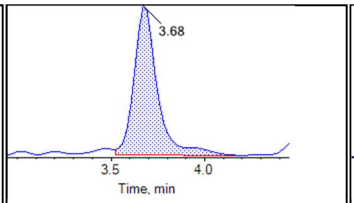

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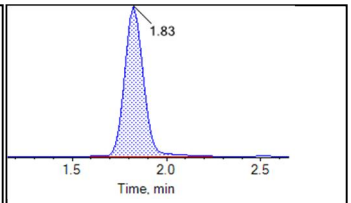
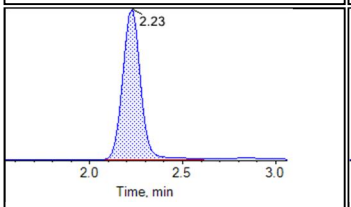
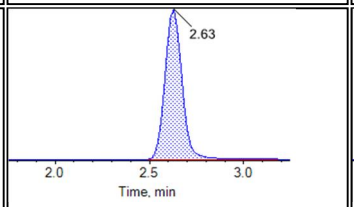


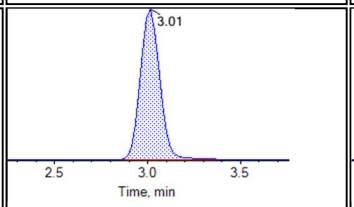
13C5-PFHxA



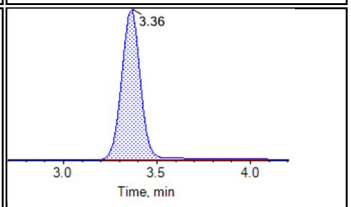
13C4-PFHpA



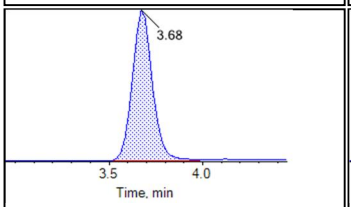
13C8-PFOA



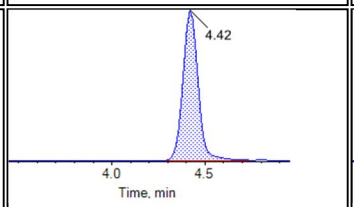
13C9-PFNA



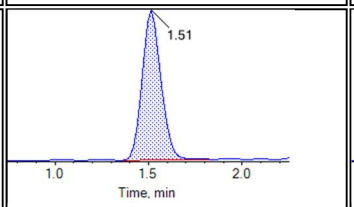
13C6-PFDA



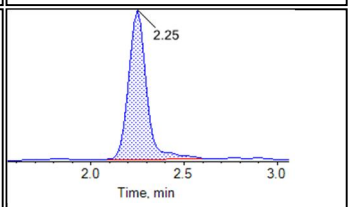
13C7-PFUnA



13C2-PFTeDA



13C3-PFBS



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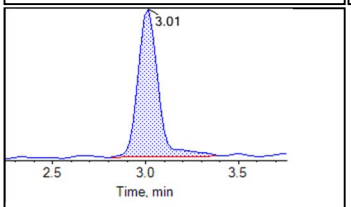

13C8-PFOS

Chromatogram Report

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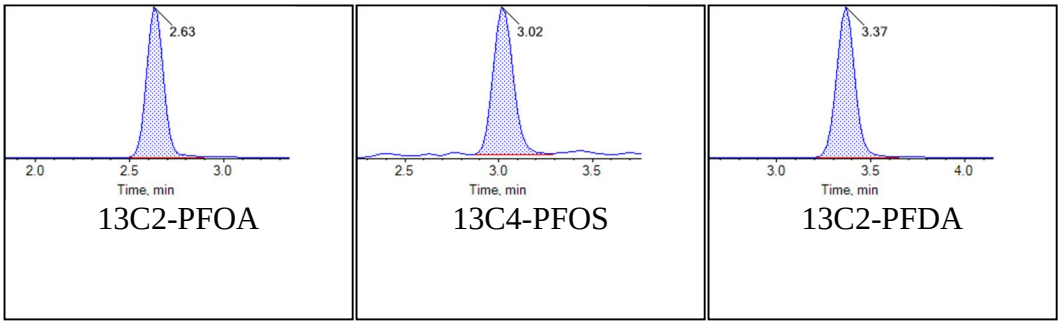
Internal Standards:



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"CR816LCS-FS","SOP 5-369","Initial","CR816LCS-FS","BNO","BDO-2126","d5-EtFOSAA",".100000","ng/L","","-99.00","NA","","SIS","81.00","","-99.00","NA","YES",".130000","","1.990000",".000500",".50",""
"CR816LCS-FS","SOP 5-369","Initial","CR816LCS-FS","BNO","BDO-2226","13C3-PFBS",".100000","ng/L","","-99.00","NA","","SIS","87.00","","-99.00","NA","YES",".120000","","1.990000",".000500",".50",""
"CR816LCS-FS","SOP 5-369","Initial","CR816LCS-FS","BNO","BDO-2227","13C3-PFHxS",".110000","ng/L","","-99.00","NA","","SIS","91.00","","-99.00","NA","YES",".120000","","1.990000",".000500",".50",""
"CR816LCS-FS","SOP 5-369","Initial","CR816LCS-FS","BNO","BDO-2228","13C8-PFOS",".110000","ng/L","","-99.00","NA","","SIS","89.00","","-99.00","NA","YES",".120000","","1.990000",".00050

0",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","307-24-4","PFHxA","1.320000","ng/L","U",".44","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","375-85-9","PFHpA","1.320000","ng/L","U",".58","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","335-67-1","PFOA","1.320000","ng/L","U",".66","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","375-95-1","PFNA","1.320000","ng/L","U",".57","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","335-76-2","PFDA","1.320000","ng/L","U",".36","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","2058-94-8","PFUnA","1.320000","ng/L","U",".54","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","307-55-1","PFDoA",".660000","ng/L","U",".32","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500",".66",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","72629-94-8","PFTrDA","1.320000","ng/L","U",".37","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","376-06-7","PFTeDA","2.650000","ng/L","U",".83","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","2.65",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","2355-31-9","NMeFOSAA","3.310000","ng/L","U","1.48","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","3.31",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","2991-50-6","NEtFOSAA","2.650000","ng/L","U",".75","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","2.65",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","375-73-5","PFBS","1.320000","ng/L","U",".48","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","355-46-4","PFHxS",".660000","ng/L","U",".29","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500",".66",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","1763-23-1","PFOS",".680000","ng/L","J",".36","MDL","","T","","","6.62","LOQ","YES","-99.000000","","1.970000",".000500","1.32",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2217","13C5-PFHxA",".150000","ng/L","","-99.00","NA","","SIS","92.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2218","13C4-PFHpA",".150000","ng/L","","-99.00","NA","","SIS","91.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2219","13C8-PFOA",".160000","ng/L","","-99.00","NA","","SIS","98.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2221","13C9-PFNA",".170000","ng/L","","-99.00","NA","","SIS","104.00","","-99.00","NA","YES",".170000","","1.970000",".0005

00",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2222","13C6-PFDA",".140000","ng/L","","-99.00","NA","","SIS","82.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2223","13C7-PFUnA",".140000","ng/L","","-99.00","NA","","SIS","86.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2112","13C2-PFDoA",".130000","ng/L","","-99.00","NA","","SIS","81.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2224","13C2-PFTeDA",".140000","ng/L","","-99.00","NA","","SIS","85.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2125","d3-MeFOSAA",".140000","ng/L","","-99.00","NA","","SIS","85.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2126","d5-EtFOSAA",".200000","ng/L","","-99.00","NA","","SIS","123.00","","-99.00","NA","YES",".170000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2226","13C3-PFBS",".170000","ng/L","","-99.00","NA","","SIS","111.00","","-99.00","NA","YES",".150000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2227","13C3-PFHxS",".160000","ng/L","","-99.00","NA","","SIS","104.00","","-99.00","NA","YES",".160000","","1.970000",".000500",".50",""
"JAX-TCC-SD02-09112018","SOP 5-369","Initial","J7781-FS","BNO","BDO-2228","13C8-PFOS",".170000","ng/L","","-99.00","NA","","SIS","105.00","","-99.00","NA","YES",".160000","","1.970000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","307-24-4","PFHxA","1.320000","ng/L","U",".43","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","375-85-9","PFHpA","1.320000","ng/L","U",".58","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","335-67-1","PFOA","1.320000","ng/L","U",".66","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","375-95-1","PFNA","1.320000","ng/L","U",".57","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","335-76-2","PFDA","1.320000","ng/L","U",".36","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","2058-94-8","PFUnA","1.320000","ng/L","U",".54","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","307-55-1","PFDoA",".660000","ng/L","U",".32","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500",".66",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","72629-94-8","PFTrDA","1.320000","ng/L","U",".37","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","376-06-7","PFTeDA","2.630000","ng/L","U",".83","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".00

0500","2.63",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","2355-31-9","NMeFOSAA","3.290000","ng/L","U","1.47","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","3.29",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","2991-50-6","NEtFOSAA","2.630000","ng/L","U",".75","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","2.63",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","375-73-5","PFBS","1.320000","ng/L","U",".47","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","355-46-4","PFHxS",".660000","ng/L","U",".29","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500",".66",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","1763-23-1","PFOS","1.050000","ng/L","J",".36","MDL","","T","","","6.58","LOQ","YES","-99.000000","","2.020000",".000500","1.32",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2217","13C5-PFHxA",".120000","ng/L","","-99.00","NA","","SIS","75.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2218","13C4-PFHpA",".120000","ng/L","","-99.00","NA","","SIS","74.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2219","13C8-PFOA",".130000","ng/L","","-99.00","NA","","SIS","82.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2221","13C9-PFNA",".130000","ng/L","","-99.00","NA","","SIS","80.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2222","13C6-PFDA",".130000","ng/L","","-99.00","NA","","SIS","80.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2223","13C7-PFUnA",".130000","ng/L","","-99.00","NA","","SIS","77.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2112","13C2-PFDoA",".130000","ng/L","","-99.00","NA","","SIS","77.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2224","13C2-PFTeDA",".130000","ng/L","","-99.00","NA","","SIS","77.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2125","d3-MeFOSAA",".110000","ng/L","","-99.00","NA","","SIS","65.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2126","d5-EtFOSAA",".120000","ng/L","","-99.00","NA","","SIS","74.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2226","13C3-PFBS",".120000","ng/L","","-99.00","NA","","SIS","78.00","","-99.00","NA","YES",".150000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2227","13C3-PFHxS",".120000","ng/L","","-99.00","NA","","SIS","75.00","","-99.00","NA","YES",".160000","","2.020000",".000500",".50",""
"JAX-TCC-SD03-09112018","SOP 5-369","Initial","J7782-FS","BNO","BDO-2228","13C8-PFOS",".130000","ng/L","","-99.00","NA","","SIS","80.00","","-99.00","NA","YES",".160000","","2.020000",".00050

0","".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","307-24-4","PFHxA","29.940000","ng/L","",".42","MDL","","T","92.00","","6.41","LOQ","YES","32.370000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","375-85-9","PFHpA","29.650000","ng/L","",".56","MDL","","T","93.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","335-67-1","PFOA","29.270000","ng/L","",".64","MDL","","T","91.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","375-95-1","PFNA","28.920000","ng/L","",".55","MDL","","T","90.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","335-76-2","PFDA","32.090000","ng/L","",".35","MDL","","T","100.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","2058-94-8","PFUnA","29.340000","ng/L","",".53","MDL","","T","92.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","307-55-1","PFDoA","31.510000","ng/L","",".31","MDL","","T","98.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500",".64",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","72629-94-8","PFTrDA","31.240000","ng/L","",".36","MDL","","T","97.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","376-06-7","PFTeDA","32.650000","ng/L","",".81","MDL","","T","102.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","2.56",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","2355-31-9","NMeFOSAA","38.190000","ng/L","","1.44","MDL","","T","119.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","3.21",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","2991-50-6","NEtFOSAA","29.580000","ng/L","",".73","MDL","","T","92.00","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","2.56",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","375-73-5","PFBS","30.400000","ng/L","",".46","MDL","","T","","","6.41","LOQ","YES","32.370000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","355-46-4","PFHxS","31.760000","ng/L","",".28","MDL","","T","","","6.41","LOQ","YES","32.370000","J7782MS-FS","2.060000",".000500",".64",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","1763-23-1","PFOS","33.230000","ng/L","",".35","MDL","","T","","","6.41","LOQ","YES","32.050000","J7782MS-FS","2.060000",".000500","1.28",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2217","13C5-PFHxA",".130000","ng/L","","-99.00","NA","","SIS","81.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2218","13C4-PFHpA",".130000","ng/L","","-99.00","NA","","SIS","81.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2219","13C8-PFOA",".130000","ng/L","","-99.00","NA","","SIS","81.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2221","13C9-PFNA",".140000","ng/L","","-99.00","NA","","SIS","85.00","","-99.00","NA","YES",".160000","J7782MS-

FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2222","13C6-PFDA",".120000","ng/L","","-99.00","NA","","SIS","74.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2223","13C7-PFUnA",".130000","ng/L","","-99.00","NA","","SIS","82.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2112","13C2-PFDoA",".120000","ng/L","","-99.00","NA","","SIS","76.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2224","13C2-PFTeDA",".130000","ng/L","","-99.00","NA","","SIS","78.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2125","d3-MeFOSAA",".090000","ng/L","","-99.00","NA","","SIS","59.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2126","d5-EtFOSAA",".110000","ng/L","","-99.00","NA","","SIS","67.00","","-99.00","NA","YES",".160000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2226","13C3-PFBS",".120000","ng/L","","-99.00","NA","","SIS","80.00","","-99.00","NA","YES",".150000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2227","13C3-PFHxS",".110000","ng/L","","-99.00","NA","","SIS","72.00","","-99.00","NA","YES",".150000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MS","SOP 5-369","Initial","J7782MS-FS","BNO","BDO-2228","13C8-PFOS",".110000","ng/L","","-99.00","NA","","SIS","71.00","","-99.00","NA","YES",".150000","J7782MS-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","307-24-4","PFHxA","29.590000","ng/L","",".43","MDL","","T","90.00","2.2","6.54","LOQ","YES","33.010000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","375-85-9","PFHpA","26.230000","ng/L","",".58","MDL","","T","80.00","15.0","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","335-67-1","PFOA","27.840000","ng/L","",".65","MDL","","T","85.00","6.8","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","375-95-1","PFNA","29.980000","ng/L","",".56","MDL","","T","92.00","2.2","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","335-76-2","PFDA","35.800000","ng/L","",".35","MDL","","T","110.00","9.5","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","2058-94-8","PFUnA","32.320000","ng/L","",".54","MDL","","T","99.00","7.3","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","307-55-1","PFDoA","31.900000","ng/L","",".31","MDL","","T","98.00",".0","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500",".65",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","72629-94-8","PFTrDA","32.560000","ng/L","",".37","MDL","","T","100.00","3.0","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","376-06-7","PFTeDA","32.580000","ng/L","",".82","MDL","","T","100.00","2.0","6.54","LOQ","YES","32.680000","J7782MS

D-FS","2.060000",".000500","2.61",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","2355-31-9","NMeFOSAA","33.130000","ng/L","","1.46","MDL","","T","101.00","16.4","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","3.27",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","2991-50-6","NEtFOSAA","25.600000","ng/L","",".75","MDL","","T","78.00","16.5","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","2.61",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","375-73-5","PFBS","31.090000","ng/L","",".47","MDL","","T","","","6.54","LOQ","YES","33.010000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","355-46-4","PFHxS","29.150000","ng/L","",".29","MDL","","T","","","6.54","LOQ","YES","33.010000","J7782MSD-FS","2.060000",".000500",".65",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","1763-23-1","PFOS","33.990000","ng/L","",".35","MDL","","T","","","6.54","LOQ","YES","32.680000","J7782MSD-FS","2.060000",".000500","1.31",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2217","13C5-PFHxA",".140000","ng/L","","-99.00","NA","","SIS","83.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2218","13C4-PFHpA",".140000","ng/L","","-99.00","NA","","SIS","88.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2219","13C8-PFOA",".150000","ng/L","","-99.00","NA","","SIS","93.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2221","13C9-PFNA",".140000","ng/L","","-99.00","NA","","SIS","84.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2222","13C6-PFDA",".120000","ng/L","","-99.00","NA","","SIS","75.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2223","13C7-PFUnA",".130000","ng/L","","-99.00","NA","","SIS","78.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2112","13C2-PFDoA",".140000","ng/L","","-99.00","NA","","SIS","85.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2224","13C2-PFTeDA",".140000","ng/L","","-99.00","NA","","SIS","84.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2125","d3-MeFOSAA",".140000","ng/L","","-99.00","NA","","SIS","87.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2126","d5-EtFOSAA",".160000","ng/L","","-99.00","NA","","SIS","97.00","","-99.00","NA","YES",".160000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2226","13C3-PFBS",".130000","ng/L","","-99.00","NA","","SIS","89.00","","-99.00","NA","YES",".150000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2227","13C3-PFHxS",".140000","ng/L","","-99.00","NA","","SIS","90.00","","-99.00","NA","YES",".150000","J7782MSD-FS","2.060000",".000500",".50",""
"JAX-TCC-SD03-09112018MSD","SOP 5-369","Initial","J7782MSD-FS","BNO","BDO-2228","13C8-PFOS",".120000","ng/L","","-99.00","NA","","SIS","78.00","","-99.00","NA","YES",".160000","J7782MSD-

FS","2.060000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","307-24-4","PFHxA","1.370000","ng/L","U",".45","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","375-85-9","PFHpA","1.370000","ng/L","U",".60","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","335-67-1","PFOA","1.370000","ng/L","U",".68","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","375-95-1","PFNA","1.370000","ng/L","U",".59","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","335-76-2","PFDA","1.370000","ng/L","U",".37","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","2058-94-8","PFUnA","1.370000","ng/L","U",".56","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","307-55-1","PFDoA",".680000","ng/L","U",".33","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500",".68",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","72629-94-8","PFTrDA","1.370000","ng/L","U",".38","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","376-06-7","PFTeDA","2.740000","ng/L","U",".86","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","2.74",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","2355-31-9","NMeFOSAA","3.420000","ng/L","U","1.53","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","3.42",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","2991-50-6","NEtFOSAA","2.740000","ng/L","U",".78","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","2.74",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","375-73-5","PFBS","1.370000","ng/L","U",".49","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","355-46-4","PFHxS",".680000","ng/L","U",".30","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500",".68",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","1763-23-1","PFOS","1.320000","ng/L","J",".37","MDL","","T","","","6.85","LOQ","YES","-99.000000","","1.980000",".000500","1.37",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2217","13C5-PFHxA",".150000","ng/L","","-99.00","NA","","SIS","86.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2218","13C4-PFHpA",".140000","ng/L","","-99.00","NA","","SIS","84.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2219","13C8-PFOA",".160000","ng/L","","-99.00","NA","","SIS","95.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2221","13C9-PFNA",".170000","ng/L","","-99.00","NA","","SIS","100.00","","-99.00","NA","YES",".170000","","1.980000",".0005

00",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2222","13C6-PFDA",".150000","ng/L","","-99.00","NA","","SIS","86.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2223","13C7-PFUnA",".140000","ng/L","","-99.00","NA","","SIS","83.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2112","13C2-PFDoA",".150000","ng/L","","-99.00","NA","","SIS","89.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2224","13C2-PFTeDA",".140000","ng/L","","-99.00","NA","","SIS","84.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2125","d3-MeFOSAA",".110000","ng/L","","-99.00","NA","","SIS","66.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2126","d5-EtFOSAA",".130000","ng/L","","-99.00","NA","","SIS","76.00","","-99.00","NA","YES",".170000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2226","13C3-PFBS",".130000","ng/L","","-99.00","NA","","SIS","79.00","","-99.00","NA","YES",".160000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2227","13C3-PFHxS",".140000","ng/L","","-99.00","NA","","SIS","88.00","","-99.00","NA","YES",".160000","","1.980000",".000500",".50",""
"JAX-TCC-SD04-09112018","SOP 5-369","Initial","J7783-FS","BNO","BDO-2228","13C8-PFOS",".140000","ng/L","","-99.00","NA","","SIS","86.00","","-99.00","NA","YES",".160000","","1.980000",".000500",".50",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR815PB-FS","","SEDIMENT","CR815PB-FS","MB","","-99.000000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018 20:18","BNO","COA","DRY","NA","10.000","NA","NA","",".000000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/17/2018 09:55","09/19/2018 16:55",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","CR816LCS-FS","","SEDIMENT","CR816LCS-FS","LCS","","-99.000000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018 20:29","BNO","COA","DRY","NA","10.000","NA","NA","",".000000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/17/2018 09:55","09/19/2018 16:55",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-TCC-SD02-09112018","09/11/2018 15:05","SD","J7781-FS","NM","SHP-180913-01","1.900000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018 20:40","BNO","COA","DRY","NA","10.000","NA","NA","","23.410000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/12/2018 17:00","09/19/2018 16:55",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-TCC-SD03-09112018","09/11/2018 15:15","SD","J7782-FS","NM","SHP-180913-01","1.900000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018 20:51","BNO","COA","DRY","NA","10.000","NA","NA","","24.750000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/12/2018 17:00","09/19/2018 16:55",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-TCC-SD03-09112018MS","","SD","J7782MS-FS","MS","","-99.000000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018 21:02","BNO","COA","DRY","NA","10.000","NA","NA","","24.240000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/17/2018 09:55","09/19/2018 16:55",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-TCC-SD03-09112018MSD","","SD","J7782MSD-FS","MSD","","-99.000000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018 21:13","BNO","COA","DRY","NA","10.000","NA","NA","","25.710000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/17/2018 09:55","09/19/2018 16:55",""
"112G08005-SE0375","SE0375 ? NAS Jacksonville","JAX-TCC-SD04-09112018","09/11/2018 15:25","SD","J7783-FS","NM","SHP-180913-01","1.900000","SOP 5-369","Gen Prep","Initial","09/17/2018 09:55","09/17/2018

21:23","BNO","COA","DRY","NA","10.000","NA","NA","","26.290000","18-0559","18-0559","DP-18-0266","DP-18-0266","18-0559","09/12/2018 17:00","09/19/2018 16:55",""

TETRA TECH

INTERNAL CORRESPONDENCE

TO: **M. PETERSON** **DATE:** **OCTOBER 4, 2018**

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

SUBJECT: **ORGANIC DATA VALIDATION – POLYFLUOROALKYL SUBSTANCES (PFAS)**
NAVAL AIR STATION (NAS), JACKSONVILLE
JACKSONVILLE, FLORIDA
SAMPLE DELIVERY GROUP (SDG) 18-0559

SAMPLES: 3/Sediment/PFAS

JAX-TCC-SD02-09112018 JAX-TCC-SD03-09112018
JAX-TCC-SD04-09112018

Overview

The sample set for NAS Jacksonville, SDG 18-0559 consisted of three (3) sediment environmental samples. All three (3) samples were analyzed for polyfluoroalkyl substances (PFAS). No field duplicate sample pair was included in this SDG.

The samples were collected by Tetra Tech, Inc. on September 11, 2018 and analyzed by Battelle Norwell Operations. All analyses were conducted in accordance with EPA 537 Modified analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

* • Data completeness
* • Hold times/Sample Preservation
* • Mass Calibration
* • LC/MS/MS System Tuning and Performance
* • Mass Spectral Acquisition Rate
* • Instrument Sensitivity Check
* • Ion Transition Check
* • Initial/Continuing Calibrations
• Laboratory Preparation/Method Blank Results
* • Extraction Internal Standard Recoveries
* • Injection Internal Standard Recoveries
* • Laboratory Control Sample Recoveries
* • Matrix Spike/Matrix Spike Sample Duplicate Results
* • Compound Identification
* • Compound Quantitation
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, and documentation supporting these findings is presented in Appendix C.

PFAS

The following contaminant was detected in the instrument blank at the following maximum concentration affecting all samples:

Compound	Maximum Concentration (ng/g)	Action Level > or < Limit of Quantitation (LOQ)
Perfluorooctanesulfonic acid (PFOS)	0.34	< LOQ

The detected results reported for PFOS below the LOQ in the environmental samples were qualified as non-detected, (U).

Additional Comments

The equipment blanks and Field Reagent Blank (FRB) collected with these sediment samples were included and analyzed in SDG 18-0560. Pentadecafluorooctanoic acid (PFOA) was detected below the LOQ in these field quality control blanks. No action was taken because this compound was not detected in the associated sediment samples.

Non-detected results were reported to the Method Detection Limit (MDL) in the database. Results were reported on a dry weight basis.

Executive Summary

Laboratory Performance Issues: PFOS was detected in the laboratory instrument blank below the LOQ.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Superfund Methods Data Review" (January 2017), EPA Method 537 Modified, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (2017). The text of this report has been formulated to address only those areas affecting data quality.

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

PROJ_NO: 08005-SE03	NSAMPLE	JAX-TCC-SD02-09112018			JAX-TCC-SD03-09112018			JAX-TCC-SD04-09112018		
SDG: 18-0559	LAB_ID	J7781-FS			J7782-FS			J7783-FS		
FRACTION: PFAS	SAMP_DATE	9/11/2018			9/11/2018			9/11/2018		
MEDIA: SEDIMENT	QC_TYPE	NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	76.6			75.3			73.7		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		0.75	U		0.75	U		0.78	U	
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1.48	U		1.47	U		1.53	U	
PENTADECAFLUOROOCTANOIC ACID (PFOA)		0.66	U		0.66	U		0.68	U	
PERFLUOROBUTANESULFONIC ACID (PFBS)		0.48	U		0.47	U		0.49	U	
PERFLUORODECANOIC ACID (PFDA)		0.36	U		0.36	U		0.37	U	
PERFLUORODODECANOIC ACID (PFDOA)		0.32	U		0.32	U		0.33	U	
PERFLUOROHEPTANOIC ACID (PFHPA)		0.58	U		0.58	U		0.6	U	
PERFLUOROHEXANESULFONIC ACID (PFHXS)		0.29	U		0.29	U		0.3	U	
PERFLUOROHEXANOIC ACID (PFHXA)		0.44	U		0.43	U		0.45	U	
PERFLUORONONANOIC ACID (PFNA)		0.57	U		0.57	U		0.59	U	
PERFLUOROOCTANESULFONIC ACID (PFOS)		0.68	U	A	1.05	U	A	1.32	U	A
PERFLUOROTETRADECANOIC ACID (PFTEA)		0.83	U		0.83	U		0.86	U	
PERFLUOROTRIDECANOIC ACID (PFTRIA)		0.37	U		0.37	U		0.38	U	
PERFLUOROUNDECANOIC ACID (PFUNA)		0.54	U		0.54	U		0.56	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

BATTELLE
It can be done

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

Client ID		JAX-TCC-SD02-09112018				
Battelle ID		J7781-FS				
Sample Type		SA				
Collection Date		09/11/2018				
Extraction Date		09/17/2018				
Analysis Date		09/17/2018				
Analytical Instrument		Sciex 5500 LC/MS/MS				
% Moisture		23.41				
Matrix		SD				
Sample Size		1.510				
Size Unit-Basis		g				
Units		ng/g_Wet		MDL	LOD	LOQ
PFHxA	307-24-4	1.32	U	0.44	1.32	6.62
PFHpA	375-85-9	1.32	U	0.58	1.32	6.62
PFOA	335-67-1	1.32	U	0.66	1.32	6.62
PFNA	375-95-1	1.32	U	0.57	1.32	6.62
PFDA	335-76-2	1.32	U	0.36	1.32	6.62
PFUnA	2058-94-8	1.32	U	0.54	1.32	6.62
PFDoA	307-55-1	0.66	U	0.32	0.66	6.62
PFTrDA	72629-94-8	1.32	U	0.37	1.32	6.62
PFTeDA	376-06-7	2.65	U	0.83	2.65	6.62
NMeFOSAA	2355-31-9	3.31	U	1.48	3.31	6.62
NEtFOSAA	2991-50-6	2.65	U	0.75	2.65	6.62
PFBS	375-73-5	1.32	U	0.48	1.32	6.62
PFHxS	355-46-4	0.66	U	0.29	0.66	6.62
PFOS	1763-23-1	0.68	J	0.36	1.32	6.62

Surrogate Recoveries (%)

13C5-PFHxA	92
13C4-PFHpA	91
13C8-PFOA	98
13C9-PFNA	104
13C6-PFDA	82
13C7-PFUnA	86
13C2-PFDoA	81
13C2-PFTeDA	85
d3-MeFOSAA	85
d5-EtFOSAA	123
13C3-PFBS	111
13C3-PFHxS	104
13C8-PFOS	105

BATTELLE
It can be done

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

Client ID		JAX-TCC-SD03-09112018			
Battelle ID		J7782-FS			
Sample Type		SA			
Collection Date		09/11/2018			
Extraction Date		09/17/2018			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		24.75			
Matrix		SD			
Sample Size		1.520			
Size Unit-Basis		g			
Units		ng/g_Wet	MDL	LOD	LOQ
PFHxA	307-24-4	1.32 U	0.43	1.32	6.58
PFHpA	375-85-9	1.32 U	0.58	1.32	6.58
PFOA	335-67-1	1.32 U	0.66	1.32	6.58
PFNA	375-95-1	1.32 U	0.57	1.32	6.58
PFDA	335-76-2	1.32 U	0.36	1.32	6.58
PFUnA	2058-94-8	1.32 U	0.54	1.32	6.58
PFDoA	307-55-1	0.66 U	0.32	0.66	6.58
PFTrDA	72629-94-8	1.32 U	0.37	1.32	6.58
PFTeDA	376-06-7	2.63 U	0.83	2.63	6.58
NMeFOSAA	2355-31-9	3.29 U	1.47	3.29	6.58
NEtFOSAA	2991-50-6	2.63 U	0.75	2.63	6.58
PFBS	375-73-5	1.32 U	0.47	1.32	6.58
PFHxS	355-46-4	0.66 U	0.29	0.66	6.58
PFOS	1763-23-1	1.05 J	0.36	1.32	6.58

Surrogate Recoveries (%)

13C5-PFHxA	75
13C4-PFHpA	74
13C8-PFOA	82
13C9-PFNA	80
13C6-PFDA	80
13C7-PFUnA	77
13C2-PFDoA	77
13C2-PFTeDA	77
d3-MeFOSAA	65
d5-EtFOSAA	74
13C3-PFBS	78
13C3-PFHxS	75
13C8-PFOS	80

BATTELLE
It can be done

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

Client ID		JAX-TCC-SD04-09112018			
Battelle ID		J7783-FS			
Sample Type		SA			
Collection Date		09/11/2018			
Extraction Date		09/17/2018			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		26.29			
Matrix		SD			
Sample Size		1.460			
Size Unit-Basis		g			
Units		ng/g_Wet	MDL	LOD	LOQ
PFHxA	307-24-4	1.37 U	0.45	1.37	6.85
PFHpA	375-85-9	1.37 U	0.60	1.37	6.85
PFOA	335-67-1	1.37 U	0.68	1.37	6.85
PFNA	375-95-1	1.37 U	0.59	1.37	6.85
PFDA	335-76-2	1.37 U	0.37	1.37	6.85
PFUnA	2058-94-8	1.37 U	0.56	1.37	6.85
PFDoA	307-55-1	0.68 U	0.33	0.68	6.85
PFTrDA	72629-94-8	1.37 U	0.38	1.37	6.85
PFTeDA	376-06-7	2.74 U	0.86	2.74	6.85
NMeFOSAA	2355-31-9	3.42 U	1.53	3.42	6.85
NEtFOSAA	2991-50-6	2.74 U	0.78	2.74	6.85
PFBS	375-73-5	1.37 U	0.49	1.37	6.85
PFHxS	355-46-4	0.68 U	0.30	0.68	6.85
PFOS	1763-23-1	1.32 J	0.37	1.37	6.85

Surrogate Recoveries (%)

13C5-PFHxA	86
13C4-PFHpA	84
13C8-PFOA	95
13C9-PFNA	100
13C6-PFDA	86
13C7-PFUnA	83
13C2-PFDoA	89
13C2-PFTeDA	84
d3-MeFOSAA	66
d5-EtFOSAA	76
13C3-PFBS	79
13C3-PFHxS	88
13C8-PFOS	86

APPENDIX C

SUPPORT DOCUMENTATION

NAS JACKSONVILLE
SDG 18-0559

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

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	PFOS
Sample ID	JAX-TCC-SD04-09112018
Laboratory Sample ID	J7783
Sample Size (g)	1.46
Dilution Factor	10
PIV (L)	0.001
PFOS Area	61997.11
IS Area	20680.55
IS Amount (ng/L)	239.25
Calibration Curve	y = 4.59265 x + -0.69673

Concentration (ng/L) 1.32

(((61997.11/20680.55)+0.69673)/4.59265)*239.25*0.001*10/1.46

BATTELLE

Summary Quant Report

Created with Analyst Reporter
Printed: 18/09/2018 3:36:57 PM

Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	4540.43	31.303827	15.8	true
PFBS_2	298.9 / 99.0	1.51	2616.11	44.112100	18.2	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	2.27	5092.87	37.059789	22.2	false
PFHxS_2	399.0 / 99.0	2.27	2186.86	33.434244	16.3	false
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	3.03	61997.11	192.465266	76.4	true
PFOS_2	499.0 / 99.0	3.02	16433.01	242.828606	113.1	false
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	true
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	true
PFUnA_1	563.0 / 519.0	3.70	8987.93	59.022092	31.9	true
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	true
PFDoA_1	613.0 / 569.0	3.98	4534.18	< 0	41.5	false
PFDoA_2	613.0 / 319.0	3.98	937.42	< 0	27.7	false
PFTrDA_1	663.0 / 619.0	4.22	2566.89	< 0	45.1	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true

BATTELLE

Summary Internal Standard Report

Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C3-PFBS	302.0 / 99.0	22851.90	232.25
PFBS_2	298.9 / 99.0	1.51	13C3-PFBS	302.0 / 99.0	22851.90	232.25
PFHxA_1	313.0 / 269.0	N/A	13C5-PFHxA	318.0 / 273.0	47443.36	250.00
PFHxA_2	313.0 / 119.0	N/A	13C5-PFHxA	318.0 / 273.0	47443.36	250.00
PFHpA_1	363.0 / 319.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFHpA_2	363.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFHxS_1	399.0 / 80.0	2.27	13C3-PFHxS	402.0 / 99.0	19537.74	236.50
PFHxS_2	399.0 / 99.0	2.27	13C3-PFHxS	402.0 / 99.0	19537.74	236.50
PFOA_1	413.0 / 369.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFOA_2	413.0 / 169.0	N/A	13C8-PFOA	421.0 / 376.0	60569.67	250.00
PFNA_1	463.0 / 419.0	N/A	13C9-PFNA	472.0 / 427.0	61278.04	250.00
PFNA_2	463.0 / 219.0	N/A	13C9-PFNA	472.0 / 427.0	61278.04	250.00
PFOS_1	499.0 / 80.0	3.03	13C8-PFOS	507.0 / 99.0	20680.55	239.25
PFOS_2	499.0 / 99.0	3.02	13C8-PFOS	507.0 / 99.0	20680.55	239.25
PFDA_1	513.0 / 469.0	N/A	13C6-PFDA	519.0 / 474.0	55019.70	250.00
PFDA_2	513.0 / 219.0	N/A	13C6-PFDA	519.0 / 474.0	55019.70	250.00
PFUnA_1	563.0 / 519.0	3.70	13C7-PFUnA	570.0 / 525.0	53219.04	250.00
PFUnA_2	563.0 / 269.0	N/A	13C7-PFUnA	570.0 / 525.0	53219.04	250.00
PFDoA_1	613.0 / 569.0	3.98	13C2-PFDoA	615.0 / 570.0	57877.70	250.00
PFDoA_2	613.0 / 319.0	3.98	13C2-PFDoA	615.0 / 570.0	57877.70	250.00
PFTrDA_1	663.0 / 619.0	4.22	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
PFTeDA_1	713.0 / 669.0	N/A	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFTeDA	715.0 / 670.0	43126.06	250.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	6014.71	250.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	6014.71	250.00
NEtFOSAA_1	584.0 / 419.0	N/A	d5-EtFOSAA	589.0 / 419.0	6972.89	250.00
NEtFOSAA_2	584.0 / 483.0	N/A	d5-EtFOSAA	589.0 / 419.0	6972.89	250.00

NAS JACKSONVILLE
SDG 18-0559

LABORATORY CONTROL SAMPLE

	Result	Target	Calculation	Recovery	Reported Recovery
PFHxA	9.62 ng/L	10.15 ng/L	9.62/10.15*100	95.7	95

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

	Result	Target	Calculation	Recovery	Reported Recovery	RPD	Reported RPD	QC Limits	RPD Limit
JAX-TCC-SD03-09112018	1.32 U								
MS	29.94 ng/L	32.37 ng/L	29.94/32.37*100	92.5	92			45-135	
MSD	29.59 ng/L	33.01 ng/L	29.59/33.01*100	89.6	90	3.1	2.2	45-135	30

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 3420 | PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G-08003-SE0375	JAX-TCC	Mark Patterson	9046366125	Jon Thorn Battelle
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
		Dave Sofka	" " "	141 Longwater Drive Suite 202
		CARRIER/WAYBILL NUMBER		CITY, STATE Norwell, MA 02061 ~~Jacksonville, FL~~

STANDARD TAT ☐
RUSH TAT ☑ 5 day
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2018)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: PFAS 537										COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									P	P									
PRESERVATIVE USED									N/A	N/A									
9/11	1255	JAX-TCC-EB02-09112018				QC	G	2	2										J7774
9/11	1340	JAX-TCC-MW03-09112018				GW	G	2	2										J7775
9/11	1340	JAX-TCC-MW33-09112018-FD				GW	G	2	2										J7776
9/11	1400	JAX-TCC-MW12-09112018				GW	G	2	2										J7777
9/11	1455	JAX-TCC-MW[illegible]-09112018				GW	G	2	2										J7778
9/11	1405	JAX-TCC-SW01-09112018			MS	SW	G	2	2										J7779
9/11	1435	JAX-TCC-SW02-09112018	MS			SW	G	2	2										J7780
9/11	1505	JAX-TCC-SD02-09112018				SD	G	1	1										J7781
9/11	1515	JAX-TCC-SD03-09112018				SD	G	1	1										J7782
9/11	1525	JAX-TCC-SD04-09112018				SD	G	1	1										J7783
9/11	1500	JAX-TCC-EB03-09112018				QC	G	2	2									MS	J7784
9/11	1445	JAX-TCC-FB-09112018				QC	G	1	1										J7785

MS

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	9/11/2018	1630	1. RECEIVED BY FedEx		
2. RELINQUISHED BY			2. RECEIVED BY Battelle	9-12-18	5:00 PM
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

BATTELLE
It can be done

ShpNo SHP-180913-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ Authorized ☐

Project Number: 112G0800J-SE0375 **Client:** Tetra Tech
Received by: Schumitz, Matt **Date/Time Received:** Wednesday, September 12, 2018 5:00 PM
No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier **Tracking Number:** 7827 3593 6708
COC Forms: ☑ Shipped with samples ☐ No Forms

Cooler(s)/Box(es)

Cntr	Type	Tracking No.	Seal	Seal	Container	Therm.	Temp C	Smps
1 of 1	Cooler	7827 3593 6708	Custody Seals	Intact	Intact	Therm_2	1.9	12

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): 1.9 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:** J7774 - J7785
Samples logged in by: Schumitz, Matt **Date/Time:** 09/12/2018 5:00 PM
Approved By: **Approved On:**
Authorized By: **Authorized On:**

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ShpNo SHP-180913-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: 112G0800J-SE0375 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, September 12, 2018 5:00 PM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J7774	JAX-TCC-EB02-09112018	09/11/18 12:55	09/13/18 8:54	2	QC	1.9	NA	NA	NA	R0119 (NA)			
J7775	JAX-TCC-MWC3-09112018	09/11/18 13:40	09/13/18 8:54	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7776	JAX-TCC-MWC3-09112018-FD	09/11/18 13:40	09/13/18 8:55	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7777	JAX-TCC-MWI2-09112018	09/11/18 14:00	09/13/18 8:55	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7778	JAX-TCC-MWB1-09112018	09/11/18 14:55	09/13/18 8:55	2	GW	1.9	NA	NA	NA	R0119 (NA)			
J7779	JAX-TCC-SW01-09112018	09/11/18 14:05	09/13/18 8:56	2	SW	1.9	NA	NA	NA	R0119 (NA)			
J7780	JAX-TCC-SW02-09112018	09/11/18 14:35	09/13/18 8:56	2	SW	1.9	NA	NA	NA	R0119 (NA)			
J7781	JAX-TCC-SD02-09112018	09/11/18 15:05	09/13/18 8:56	1	SD	1.9	NA	NA	NA	F0117 (NA)			
J7782	JAX-TCC-SD03-09112018	09/11/18 15:15	09/13/18 8:57	1	SD	1.9	NA	NA	NA	F0117 (NA)			
J7783	JAX-TCC-SD04-09112018	09/11/18 15:25	09/13/18 8:57	1	SD	1.9	NA	NA	NA	F0117 (NA)			
J7784	JAX-TCC-EB03-09112018	09/11/18 15:00	09/13/18 8:57	2	QC	1.9	NA	NA	NA	R0119 (NA)			
J7785	JAX-TCC-FRB-09112018	09/11/18 14:45	09/13/18 8:58	1	QC	1.9	NA	NA	NA	R0119 (NA)			

Total Samples: 12

QA/QC Summary
Batch 18-0559

Project:	CTO-SE0375: Naval Air Station Jacksonville
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	SD
Data Set:	DP-18-0266
Analytical SOP:	5-369
Method Reference:	PFAS to QSM 5.1 Table B-15

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
9/11/2018	9/12/2018	1.9
Corrective Actions	None	
Sample Storage	The sediment samples were stored frozen until extraction.	
Related samples	NA	

	METHOD SUMMARIES
Sample Preparation	Solid samples were aliquoted into extraction tubes and spiked with surrogates prior to the addition of solvent. The sediment was serially extracted on the Geno/Grinder with 0.4% NH_3 in methanol. 1 mL of extract was refined using ENVI-carb SPE cartridges. Extracts were concentrated to dryness under nitrogen with a water bath set between 35 °C and 45 °C, reconstituted with 80:20 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	All samples were pre-screened prior to full extraction and analysis.
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/g concentrations.
Analysis Comments	Samples analyzed on Sciex 5500 LC-MS/MS.

Holding Times	Extraction Date(s)	Analysis Date(s)
	9/17/2018	9/17-18/2018

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ ½ the LOQ	No exceedances noted.
Samples >10x PB	No comments.

QA/QC Summary
Batch 18-0559

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
Laboratory derived control limits for recovery	No exceedances noted.
	No comments.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A MS/MSD was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
Laboratory derived control limits for recovery and <30% RPD	No exceedances noted.
	No comments.

Extracted Internal Standard Analytes	Labelled analog compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
50-150% of true value	No exceedances noted.
	No comments.

Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
+/- 50% of the area of the L5 calibration point.	No exceedances noted.
	No comments.

Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadradic curve fitting.
+/- 30% of true value, $R^2 \geq 0.99$	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.
+/- 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.
+/- 30% of true value	No exceedances noted.
	No comments.

Instrument Blank (IB)	Immediately following the highest standard analyzed and daily prior to sample analysis.
≤ ½ the LOQ	No exceedances noted.
	No comments.

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Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project Number: 100119154-SE0375
Preparation Batch: 18-0559
Data Set: DP-18-0266
Test Code: Master_369

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	0	None
Matrix Spike / Matrix Spike Duplicate Precision	0	None
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None

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BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	CTO-SE0375: Naval Air Station Jackson	**Data Set Number:**	DP-18-0266
Project Number:	100119154-SE0375	**Prep Batch Number:**	18-0559
Entered By:	Robert Lizotte Jr	**Entered On:**	09/18/2018
Test Code (Matrix Type):	Master_369(S)		

Package assembled by Robert Lizotte. Samples integrated by Denise Schumitz. Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
-BL 9/18/2018

KA86 is not being used in method 18-0559_18-0560_BASE for NMeFOSAA. There is no impact on the data once this point is removed from the calibration.
-BL 9/18/2018

KA92 is not being used in method 18-0559_18-0560_BASE for NMeFOSAA. There is no impact on the data once this point is removed from the calibration.
-BL 9/18/2018

KA92 is not being used in method 18-0559_18-0560_SIS for d3-MeFOSAA. There is no impact on the data once this point is removed from the calibration.
-BL 9/18/2018

In all instances where the ion ratio was>50% in the sequences associated with this package, either the result was below calibration or was not reported from the extract that had an exceedence.
-BL 9/18/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.09.19 07:20:31 -04'00'

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Glossary of Data Qualifiers

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

Example Calculation for PFAS

Calculation of final concentration from area:

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

Where:

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

Sample ID:	J7782-FS(3)
Client Sample ID:	JAX-TCC-SD03-09112018
Sample Size:	1.52
Units:	g
Dilution Factor:	10.000
PIV (L):	0.001
Target Analyte:	PFOS
MRM Transition:	499.0 / 80.0
Data file:	09172018.wiff
Result table:	18-0559_18-0560_BASE
Area:	52,353.91
IS Name:	13C8-PFOS
IS Area:	22,101.26
IS Amount (ng/L):	239.25
y-intercept:	-0.69673
slope:	4.59265

$$\text{Concentration} = \frac{[(52353.91/22101.26) - -0.69673]}{4.59265} * 239.25 * 0.001 * 10 / 1.52$$

ng/g = 1.05

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Project Client: Tetra Tech
Project Name: CTO-SE0375: Naval Air Station Jacksonville
Project No.: 100119154-SE0375
Preparation Batch: 18-0559
Data Set: DP-18-0266

		CR815PB-FS (Procedural Blank)	CR816LCS-FS (180507-02: Ottawa Sand)	J7782MS-FS (JAX-TCC-SD03-09112018)	J7782MSD-FS (JAX-TCC-SD03-09112018)	J7781-FS (JAX-TCC-SD02-09112018)	J7782-FS (JAX-TCC-SD03-09112018)	J7783-FS (JAX-TCC-SD04-09112018)
PFHxA	307-24-4	-	L	L	L	-	-	-
PFHpA	375-85-9	-	L	L	L	-	-	-
PFOA	335-67-1	-	L	L	L	-	-	-
PFNA	375-95-1	-	L	L	L	-	-	-
PFDA	335-76-2	-	L	L	L	-	-	-
PFUnA	2058-94-8	-	L	L	L	-	-	-
PFDoA	307-55-1	-	L	L	L	-	-	-
PFTrDA	72629-94-8	-	L	L	L	-	-	-
PFTeDA	376-06-7	-	L	L	L	-	-	-
NMeFOSAA	2355-31-9	-	L	L	L	-	-	-
NEtFOSAA	2991-50-6	-	L	L	L	-	-	-
PFBS	375-73-5	-	L	L	L	-	-	-
PFHxS	355-46-4	-	L/Br	L/Br	L/Br	-	-	-
PFOS	1763-23-1	-	L/Br	L/Br	L/Br	L/Br	L/Br	L/Br

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

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

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Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper
KA90	L5	9/17/18 19:02	13C2-PFOA	60,385.02	30,192.51	90,577.53

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier
KA86	L1	9/17/18 18:19	13C2-PFOA	64,521.69	30,192.51	90,577.53	
KA87	L2	9/17/18 18:30	13C2-PFOA	58,412.50	30,192.51	90,577.53	
KA88	L3	9/17/18 18:41	13C2-PFOA	44,126.10	30,192.51	90,577.53	
KA89	L4	9/17/18 18:51	13C2-PFOA	49,957.68	30,192.51	90,577.53	
KA90	L5	9/17/18 19:02	13C2-PFOA	60,385.02	30,192.51	90,577.53	
KA91	L6	9/17/18 19:13	13C2-PFOA	52,038.12	30,192.51	90,577.53	
KA92	L7	9/17/18 19:24	13C2-PFOA	53,157.48	30,192.51	90,577.53	
JY46 IB	Instrument Blank	9/17/18 19:35	13C2-PFOA	67,042.08	30,192.51	90,577.53	
JY45 ICC	ICC	9/17/18 19:46	13C2-PFOA	54,959.55	30,192.51	90,577.53	
CR815PB-FS(3)	Procedural Blank	9/17/18 20:18	13C2-PFOA	54,843.84	30,192.51	90,577.53	
CR816LCS-FS(3)	Laboratory Control Sample	9/17/18 20:29	13C2-PFOA	71,288.82	30,192.51	90,577.53	
J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/18 20:40	13C2-PFOA	61,530.71	30,192.51	90,577.53	
J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/18 20:51	13C2-PFOA	76,087.25	30,192.51	90,577.53	
J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:02	13C2-PFOA	71,427.53	30,192.51	90,577.53	
J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:13	13C2-PFOA	58,117.99	30,192.51	90,577.53	
J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/18 21:23	13C2-PFOA	60,216.17	30,192.51	90,577.53	
KA90 CCV	CCV	9/17/18 21:34	13C2-PFOA	70,260.72	30,192.51	90,577.53	

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

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Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper
KA90	L5	9/17/18 19:02	13C2-PFDA	61,266.67	30,633.34	91,900.01

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier
KA86	L1	9/17/18 18:19	13C2-PFDA	62,612.00	30,633.34	91,900.01	
KA87	L2	9/17/18 18:30	13C2-PFDA	57,413.84	30,633.34	91,900.01	
KA88	L3	9/17/18 18:41	13C2-PFDA	47,686.88	30,633.34	91,900.01	
KA89	L4	9/17/18 18:51	13C2-PFDA	47,657.14	30,633.34	91,900.01	
KA90	L5	9/17/18 19:02	13C2-PFDA	61,266.67	30,633.34	91,900.01	
KA91	L6	9/17/18 19:13	13C2-PFDA	48,271.12	30,633.34	91,900.01	
KA92	L7	9/17/18 19:24	13C2-PFDA	57,726.45	30,633.34	91,900.01	
JY46 IB	Instrument Blank	9/17/18 19:35	13C2-PFDA	65,007.41	30,633.34	91,900.01	
JY45 ICC	ICC	9/17/18 19:46	13C2-PFDA	56,928.59	30,633.34	91,900.01	
CR815PB-FS(3)	Procedural Blank	9/17/18 20:18	13C2-PFDA	53,362.00	30,633.34	91,900.01	
CR816LCS-FS(3)	Laboratory Control Sample	9/17/18 20:29	13C2-PFDA	73,500.53	30,633.34	91,900.01	
J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/18 20:40	13C2-PFDA	68,465.72	30,633.34	91,900.01	
J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/18 20:51	13C2-PFDA	72,325.26	30,633.34	91,900.01	
J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:02	13C2-PFDA	75,308.36	30,633.34	91,900.01	
J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:13	13C2-PFDA	58,433.60	30,633.34	91,900.01	
J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/18 21:23	13C2-PFDA	62,306.25	30,633.34	91,900.01	
KA90 CCV	CCV	9/17/18 21:34	13C2-PFDA	74,049.18	30,633.34	91,900.01	

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

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Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper
KA90	L5	9/17/18 19:02	13C4-PFOS	23,857.68	11,928.84	35,786.52

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier
KA86	L1	9/17/18 18:19	13C4-PFOS	19,991.76	11,928.84	35,786.52	
KA87	L2	9/17/18 18:30	13C4-PFOS	19,680.67	11,928.84	35,786.52	
KA88	L3	9/17/18 18:41	13C4-PFOS	18,034.60	11,928.84	35,786.52	
KA89	L4	9/17/18 18:51	13C4-PFOS	16,124.75	11,928.84	35,786.52	
KA90	L5	9/17/18 19:02	13C4-PFOS	23,857.68	11,928.84	35,786.52	
KA91	L6	9/17/18 19:13	13C4-PFOS	18,411.39	11,928.84	35,786.52	
KA92	L7	9/17/18 19:24	13C4-PFOS	20,888.13	11,928.84	35,786.52	
JY46 IB	Instrument Blank	9/17/18 19:35	13C4-PFOS	23,110.50	11,928.84	35,786.52	
JY45 ICC	ICC	9/17/18 19:46	13C4-PFOS	22,540.57	11,928.84	35,786.52	
CR815PB-FS(3)	Procedural Blank	9/17/18 20:18	13C4-PFOS	18,960.01	11,928.84	35,786.52	
CR816LCS-FS(3)	Laboratory Control Sample	9/17/18 20:29	13C4-PFOS	25,609.45	11,928.84	35,786.52	
J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/18 20:40	13C4-PFOS	19,367.47	11,928.84	35,786.52	
J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/18 20:51	13C4-PFOS	25,859.82	11,928.84	35,786.52	
J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:02	13C4-PFOS	27,757.61	11,928.84	35,786.52	
J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/18 21:13	13C4-PFOS	20,101.05	11,928.84	35,786.52	
J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/18 21:23	13C4-PFOS	22,642.51	11,928.84	35,786.52	
KA90 CCV	CCV	9/17/18 21:34	13C4-PFOS	23,913.38	11,928.84	35,786.52	

Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 18/09/2018 3:21:16 PM

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 7:24:30 PM	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.54	49	>10
PFBS_2	298.9 / 99.0	1.54	50	>10
PFHxA_1	313.0 / 269.0	1.85	23	>10
PFHxA_2	313.0 / 119.0	1.85	21	>10
PFHpA_1	363.0 / 319.0	2.25	27	>10
PFHpA_2	363.0 / 169.0	2.25	31	>10
PFHxS_1	399.0 / 80.0	2.27	49	>10
PFHxS_2	399.0 / 99.0	2.27	54	>10
PFOA_1	413.0 / 369.0	2.64	30	>10
PFOA_2	413.0 / 169.0	2.64	33	>10
PFNA_1	463.0 / 419.0	3.03	27	>10
PFNA_2	463.0 / 219.0	3.03	33	>10
PFOS_1	499.0 / 80.0	3.03	70	>10
PFOS_2	499.0 / 99.0	3.03	57	>10
PFDA_1	513.0 / 469.0	3.38	31	>10
PFDA_2	513.0 / 219.0	3.38	34	>10
PFUnA_1	563.0 / 519.0	3.70	59	>10
PFUnA_2	563.0 / 269.0	3.70	52	>10
PFDoA_1	613.0 / 569.0	3.98	66	>10
PFDoA_2	613.0 / 319.0	3.98	66	>10
PFTrDA_1	663.0 / 619.0	4.22	73	>10
PFTrDA_2	663.0 / 169.0	4.22	38	>10
PFTeDA_1	713.0 / 669.0	4.43	58	>10
PFTeDA_2	713.0 / 169.0	4.43	66	>10
NMeFOSAA_1	570.0 / 419.0	3.53	40	>10
NMeFOSAA_2	570.0 / 512.0	3.53	20	>10
NEtFOSAA_1	584.0 / 419.0	3.69	28	>10
NEtFOSAA_2	584.0 / 483.0	3.69	26	>10

Mass Spectral Acquisition Rate Report

Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 7:24:30 PM	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
13C2-PFDoA	615.0 / 570.0	3.97	48	>10
d3-MeFOSAA	573.0 / 419.0	3.52	21	>10
d5-EtFOSAA	589.0 / 419.0	3.68	20	>10
13C5-PFHxA	318.0 / 273.0	1.84	30	>10
13C4-PFHpA	367.0 / 322.0	2.23	32	>10
13C8-PFOA	421.0 / 376.0	2.63	33	>10
13C9-PFNA	472.0 / 427.0	3.02	46	>10
13C6-PFDA	519.0 / 474.0	3.37	37	>10
13C7-PFUnA	570.0 / 525.0	3.68	22	>10
13C2-PFTeDA	715.0 / 670.0	4.43	40	>10
13C3-PFBS	302.0 / 99.0	1.52	34	>10
13C3-PFHxS	402.0 / 99.0	2.26	25	>10
13C8-PFOS	507.0 / 99.0	3.02	19	>10

BATTELLE
It can be done

Precision and Bias at the LOQ for PFAS in Solids

Analyte	CAS No.	Average (ng/g)	ST DEV	2 Sigma	n
PFBA	375-22-4	11.08	1.57	3.14	20
PFPeA	2706-90-3	10.94	1.44	2.88	20
PFHxA	307-24-4	11.18	2.21	4.42	23
PFHpA	375-85-9	11.27	1.85	3.7	23
PFOA	335-67-1	11.34	1.91	3.82	23
PFNA	375-95-1	11.02	1.71	3.42	23
PFDA	335-76-2	11.82	2.12	4.24	23
PFUnA	2058-94-8	11.56	1.9	3.8	23
PFDoA	307-55-1	11.65	1.6	3.2	23
PFTrDA	72629-94-8	10.9	1.34	2.68	23
PFTeDA	376-06-7	12.01	2.26	4.52	23
NMeFOSAA	2355-31-9	11.69	1.63	3.26	23
NEtFOSAA	2991-50-6	10.81	1.48	2.96	23
PFOSA	754-91-6	10.75	1.63	3.26	4
PFBS	375-73-5	11.71	1.75	3.5	23
PFPeS	BDO-2114	11.67	1.22	2.44	4
PFHxS	355-46-4	11.33	1.76	3.52	23
PFHpS	375-99-6	11.05	1.68	3.36	20
PFOS	1763-23-1	11.09	1.56	3.12	23
PFNS	98789-57-2	10.67	1.01	2.02	4
PFDS	2806-15-7	11.84	2.23	4.46	20
4:2FTS	BDO-2205	12.03	1.86	3.72	20
6:2FTS	27619-97-2	12.48	1.33	2.66	12
8:2FTS	39108-34-4	12.08	2.01	4.02	20

BATTELLE DETECTION LIMITS FOR PFAS IN SOLIDS (SEDIMENT/SOIL)

Analytical SOP 5-369
Extraction SOP 5-370

PFAS by LC-MS/MS Compliant with QSM 5.1 Table B-15

Analyte	CAS No.	MDL (ng/g)	LOD (ng/g)	LOQ (ng/g)
PFBA	375-22-4	0.36	1.0	5.0
PFPeA	2706-90-3	0.39	1.0	5.0
PFHxA	307-24-4	0.33	1.0	5.0
PFHpA	375-85-9	0.44	1.0	5.0
PFOA	335-67-1	0.50	1.0	5.0
PFNA	375-95-1	0.43	1.0	5.0
PFDA	335-76-2	0.27	1.0	5.0
PFUnA	2058-94-8	0.41	1.0	5.0
PFDoA	307-55-1	0.24	0.5	5.0
PFTrDA	72629-94-8	0.28	1.0	5.0
PFTeDA	376-06-7	0.63	2.0	5.0
NMeFOSAA	2355-31-9	1.12	2.5	5.0
NEtFOSAA	2991-50-6	0.57	2.0	5.0
PFOSA	754-91-6	0.39	1.0	5.0
PFBS	375-73-5	0.36	1.0	5.0
PFPeS	BDO-2114	0.57	2.0	5.0
PFHxS	355-46-4	0.22	0.5	5.0
PFHpS	375-99-6	0.34	1.0	5.0
PFOS	1763-23-1	0.27	1.0	5.0
PFNS	98789-57-2	0.74	2.0	5.0
PFDS	2806-15-7	0.19	0.5	5.0
4:2FTS	BDO-2205	0.29	1.0	5.0
6:2FTS	27619-97-2	2.31	2.5	5.0
8:2FTS	39108-34-4	0.59	2.0	5.0

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

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ID 595 04/18

Analytical Transitions for PFAS in non-potable water, solid, and tissue

EPA 537 MOD DoD QSM 5.1 compliant with Table B-15 requirements

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFBA	375-22-4	Target	213.0 / 169.0	NA
PFPeA	2706-90-3	Target	263.0 / 219.0	NA
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFOSA	754-91-6	Target	498.0 / 78.0	498.0 / 83.0
PFBS	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
PFPeS	BDO-2114	Target	349.0 / 99.0	249.0 / 80.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFHpS	375-99-6	Target	449.0 / 80.0	449.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
PFNS	98789-57-2	Target	549.0 / 99.0	549.0 / 80.0
PFDS	2806-15-7	Target	599.0 / 80.0	599.0 / 99.0
4:2FTS	BDO-2205	Target	327.0 / 307.0	327.0 / 80.0
6:2FTS	27619-97-2	Target	427.0 / 407.0	427.0 / 81.0
8:2FTS	39108-34-4	Target	527.0 / 507.0	527.0 / 487.0
13C4-PFBA	BDO-2105	SIS[1]	217.0 / 172.0	NA
13C5-PFPeA	BDO-2216	SIS[1]	268.0 / 223.0	NA
13C5-PFHxA	BDO-2217	SIS[1]	318.0 / 273.0	NA

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
13C4-PFHpA	BDO-2218	SIS[1]	367.0 / 322.0	NA
13C8-PFOA	BDO-2219	SIS[1]	421.0 / 376.0	NA
13C9-PFNA	BDO-2221	SIS[1]	472.0 / 427.0	NA
13C6-PFDA	BDO-2222	SIS[1]	519.0 / 474.0	NA
13C7-PFUnA	BDO-2223	SIS[1]	570.0 / 525.0	NA
13C2-PFDoA	BDO-2112	SIS[1]	615.0 / 570.0	NA
13C2-PFTeDA	BDO-2224	SIS[1]	715.0 / 670.0	NA
d3-MeFOSAA	BDO-1838	SIS[1]	573.0 / 419.0	NA
d5-EtFOSAA	BDO-1839	SIS[1]	589.0 / 419.0	NA
13C8-FOSA	BDO-2225	SIS[1]	506.0 / 78.0	NA
13C3-PFBS	BDO-2226	SIS[1]	302.0 / 99.0	NA
13C3-PFHxS	BDO-2227	SIS[1]	402.0 / 99.0	NA
13C8-PFOS	BDO-2228	SIS[1]	507.0 / 99.0	NA
13C2-4:2FTS	BDO-2229	SIS[1]	329.0 / 81.0	NA
13C2-6:2FTS	BDO-2230	SIS[1]	429.0 / 81.0	NA
13C2-8:2FTS	BDO-2220	SIS[1]	529.0 / 81.0	NA
13C3-PFBA	BDO-2231	IS[2]	216.0 / 172.0	NA
13C2-PFOA	BDO-2107	IS[2]	415.0 / 370.0	NA
13C2-PFDA	BDO-2110	IS[2]	515.0 / 470.0	NA
13C4-PFOS	BDO-2121	IS[2]	503.0 / 99.0	NA

[1] – extracted internal standard (surrogate)
[2] – injection internal standard

BATTELLE

Solids Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF[1]	Sample Size (g)	Sample Equivalent (ng/g)[2]
25	1	10	2.0	0.1
50	1	10	2.0	0.3
100	1	10	2.0	0.5
250	1	10	2.0	1.3
500	1	10	2.0	2.5
1,000	1	10	2.0	5.0
2,500	1	10	2.0	12.5
10,000	1	10	2.0	50.0
20,000	1	10	2.0	100.0

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

[2] - calculated equivalent of a sample based on the ICAL concentration

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

Client ID		JY46 IB			
Battelle ID		JY46 IB_09/17/2018			
Sample Type		IB			
Collection Date		NA			
Extraction Date		NA			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		NA			
Matrix		Solid			
Sample Size		2.00			
Size Unit-Basis		Wet			
Units		ng/g	MDL	LOD	LOQ
PFHxA	307-24-4	1.00 U	0.33	1.00	5.00
PFHpA	375-85-9	1.00 U	0.44	1.00	5.00
PFOA	335-67-1	1.00 U	0.50	1.00	5.00
PFNA	375-95-1	1.00 U	0.43	1.00	5.00
PFDA	335-76-2	1.00 U	0.27	1.00	5.00
PFUnA	2058-94-8	1.00 U	0.41	1.00	5.00
PFDoA	307-55-1	0.50 U	0.24	0.50	5.00
PFTrDA	72629-94-8	1.00 U	0.28	1.00	5.00
PFTeDA	376-06-7	2.00 U	0.63	2.00	5.00
NMeFOSAA	2355-31-9	2.50 U	1.12	2.50	5.00
NEtFOSAA	2991-50-6	2.00 U	0.57	2.00	5.00
PFBS	375-73-5	1.00 U	0.36	1.00	5.00
PFHxS	355-46-4	0.50 U	0.22	0.50	5.00
PFOS	1763-23-1	0.34 J	0.27	1.00	5.00

Surrogate Recoveries (%)

13C5-PFHxA	95
13C4-PFHpA	91
13C8-PFOA	102
13C9-PFNA	101
13C6-PFDA	103
13C7-PFUnA	103
13C2-PFDoA	94
13C2-PFTeDA	93
d3-MeFOSAA	85
d5-EtFOSAA	90
13C3-PFBS	100
13C3-PFHxS	95
13C8-PFOS	99

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

Client ID		Procedural Blank			
Battelle ID		CR815PB-FS			
Sample Type		PB			
Collection Date		09/17/2018			
Extraction Date		09/17/2018			
Analysis Date		09/17/2018			
Analytical Instrument		Sciex 5500 LC/MS/MS			
% Moisture		0.00			
Matrix		SEDIMENT			
Sample Size		2.070			
Size Unit-Basis		g			
Units		ng/g_Wet	MDL	LOD	LOQ
PFHxA	307-24-4	0.97 U	0.32	0.97	4.83
PFHpA	375-85-9	0.97 U	0.43	0.97	4.83
PFOA	335-67-1	0.97 U	0.48	0.97	4.83
PFNA	375-95-1	0.97 U	0.42	0.97	4.83
PFDA	335-76-2	0.97 U	0.26	0.97	4.83
PFUnA	2058-94-8	0.97 U	0.40	0.97	4.83
PFDoA	307-55-1	0.48 U	0.23	0.48	4.83
PFTrDA	72629-94-8	0.97 U	0.27	0.97	4.83
PFTeDA	376-06-7	1.93 U	0.61	1.93	4.83
NMeFOSAA	2355-31-9	2.42 U	1.08	2.42	4.83
NEtFOSAA	2991-50-6	1.93 U	0.55	1.93	4.83
PFBS	375-73-5	0.97 U	0.35	0.97	4.83
PFHxS	355-46-4	0.48 U	0.21	0.48	4.83
PFOS	1763-23-1	0.97 U	0.26	0.97	4.83

Surrogate Recoveries (%)

13C5-PFHxA	98
13C4-PFHpA	98
13C8-PFOA	103
13C9-PFNA	91
13C6-PFDA	94
13C7-PFUnA	100
13C2-PFDoA	95
13C2-PFTeDA	101
d3-MeFOSAA	82
d5-EtFOSAA	86
13C3-PFBS	99
13C3-PFHxS	100
13C8-PFOS	104

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

Client ID		180507-02: Ottawa Sand					
Battelle ID		CR816LCS-FS					
Sample Type		LCS					
Collection Date		09/17/2018					
Extraction Date		09/17/2018					
Analysis Date		09/17/2018					
Analytical Instrument		Sciex 5500 LC/MS/MS					
% Moisture		0.00					
Matrix		SEDIMENT					
Sample Size		1.990					
Size Unit-Basis		g				Control Limits	
Units		ng/g_Wet	Target	Recovery	Qual	Lower	Upper
PFHxA	307-24-4	9.62	10.15	95		45	135
PFHpA	375-85-9	9.15	10.05	91		60	128
PFOA	335-67-1	9.46	10.05	94		56	136
PFNA	375-95-1	9.28	10.05	92		54	130
PFDA	335-76-2	9.76	10.05	97		55	141
PFUnA	2058-94-8	9.81	10.05	98		57	137
PFDoA	307-55-1	10.05	10.05	100		62	134
PFTrDA	72629-94-8	10.77	10.05	107		51	127
PFTeDA	376-06-7	11.24	10.05	112		34	162
NMeFOSAA	2355-31-9	10.93	10.05	109		52	146
NEtFOSAA	2991-50-6	11.04	10.05	110		54	124
PFBS	375-73-5	10.49	10.15	103		57	145
PFHxS	355-46-4	10.17	10.15	100		52	132
PFOS	1763-23-1	11.30	10.05	112		50	130

Surrogate Recoveries (%)

13C5-PFHxA	95
13C4-PFHpA	86
13C8-PFOA	93
13C9-PFNA	97
13C6-PFDA	90
13C7-PFUnA	88
13C2-PFDoA	91
13C2-PFTeDA	87
d3-MeFOSAA	89
d5-EtFOSAA	81
13C3-PFBS	87
13C3-PFHxS	91
13C8-PFOS	89

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

Client ID		JAX-TCC-SD03-09112018	JAX-TCC-SD03-09112018					
Battelle ID		J7782-FS	J7782MS-FS					
Sample Type		SA	MS					
Collection Date		09/11/2018	09/11/2018					
Extraction Date		09/17/2018	09/17/2018					
Analysis Date		09/17/2018	09/17/2018					
Analytical Instrument		Sciex 5500 LC/MS/MS	Sciex 5500 LC/MS/MS					
% Moisture		24.75	24.24					
Matrix		SD	SD					
Sample Size		1.520	1.560					
Size Unit-Basis		g	g				Control Limits	
Units		ng/g_Wet	ng/g_Wet	Target	Recovery	Qual	Lower	Upper
PFHxA	307-24-4	1.32 U	29.94	32.37	92		45	135
PFHpA	375-85-9	1.32 U	29.65	32.05	93		60	128
PFOA	335-67-1	1.32 U	29.27	32.05	91		56	136
PFNA	375-95-1	1.32 U	28.92	32.05	90		54	130
PFDA	335-76-2	1.32 U	32.09	32.05	100		55	141
PFUnA	2058-94-8	1.32 U	29.34	32.05	92		57	137
PFDoA	307-55-1	0.66 U	31.51	32.05	98		62	134
PFTrDA	72629-94-8	1.32 U	31.24	32.05	97		51	127
PFTeDA	376-06-7	2.63 U	32.65	32.05	102		34	162
NMeFOSAA	2355-31-9	3.29 U	38.19	32.05	119		52	146
NEtFOSAA	2991-50-6	2.63 U	29.58	32.05	92		54	124
PFBS	375-73-5	1.32 U	30.40	32.37	94		57	145
PFHxS	355-46-4	0.66 U	31.76	32.37	98		52	132
PFOS	1763-23-1	1.05 J	33.23	32.05	100		50	130
Surrogate Recoveries (%)								
13C5-PFHxA		75	81					
13C4-PFHpA		74	81					
13C8-PFOA		82	81					
13C9-PFNA		80	85					
13C6-PFDA		80	74					
13C7-PFUnA		77	82					
13C2-PFDoA		77	76					
13C2-PFTeDA		77	78					
d3-MeFOSAA		65	59					
d5-EtFOSAA		74	67					
13C3-PFBS		78	80					
13C3-PFHxS		75	72					
13C8-PFOS		80	71					

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

Client ID	JAX-TCC-SD03-09112018
Battelle ID	J7782MSD-FS
Sample Type	MSD
Collection Date	09/11/2018
Extraction Date	09/17/2018
Analysis Date	09/17/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	25.71
Matrix	SD
Sample Size	1.530
Size Unit-Basis	g
Units	ng/g_Wet

						Control Limits				RPD
			Target	Recovery	Qual	Lower	Upper	RPD	Qual	Limit
PFHxA	307-24-4	29.59	33.01	90		45	135	2.2		≤ 30
PFHpA	375-85-9	26.23	32.68	80		60	128	15.0		≤ 30
PFOA	335-67-1	27.84	32.68	85		56	136	6.8		≤ 30
PFNA	375-95-1	29.98	32.68	92		54	130	2.2		≤ 30
PFDA	335-76-2	35.80	32.68	110		55	141	9.5		≤ 30
PFUnA	2058-94-8	32.32	32.68	99		57	137	7.3		≤ 30
PFDoA	307-55-1	31.90	32.68	98		62	134	0.0		≤ 30
PFTrDA	72629-94-8	32.56	32.68	100		51	127	3.0		≤ 30
PFTeDA	376-06-7	32.58	32.68	100		34	162	2.0		≤ 30
NMeFOSAA	2355-31-9	33.13	32.68	101		52	146	16.4		≤ 30
NEtFOSAA	2991-50-6	25.60	32.68	78		54	124	16.5		≤ 30
PFBS	375-73-5	31.09	33.01	94		57	145	0.0		≤ 30
PFHxS	355-46-4	29.15	33.01	88		52	132	10.8		≤ 30
PFOS	1763-23-1	33.99	32.68	101		50	130	1.0		≤ 30

Surrogate Recoveries (%)

13C5-PFHxA	83
13C4-PFHpA	88
13C8-PFOA	93
13C9-PFNA	84
13C6-PFDA	75
13C7-PFUnA	78
13C2-PFDoA	85
13C2-PFTeDA	84
d3-MeFOSAA	87
d5-EtFOSAA	97
13C3-PFBS	89
13C3-PFHxS	90
13C8-PFOS	78

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

QTRAP 5500
Preventive Maintenance Checklist

Preventive Maintenance Date:	12-June-2018

Request ID:	9749
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: Suspected issue with pulse gas manifold. TRAP testing in POSITIVE mode couldn't be finished because of pulse gas issue. The same issue will be taken care in separate service call.

Performed By: Kaustubh Dhayagude **Date:** 12-June-2018

Approved By :_____ **Date:** _____

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QTRAP 5500

LC/MS/MS Detector System
Appendix ZEFPM003-2L

PRE PM PPG PERFORMANCE EVALUATION:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.6	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.3	Read Only
☑ CAD Medium	2.7	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	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	4.01 e6	Read Only	0.6998	Read Only
Q1 500.380	2.81 e7	Read Only	0.7038	Read Only
Q1 906.673	4.21 e7	Read Only	0.7071	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	5.45 e6	Read Only	0.6873	Read Only
Q3 500.380	2.69 e7	Read Only	0.7591	Read Only
Q3 906.673	4.50 e7	Read Only	0.7843	Read Only

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

☐ Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: :__28.87%__ (Read Only)

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
Q1 609.3	4.26 e7	Read Only	0.7011	Read Only
MS/MS 195.1	1.23 e7	Read Only	0.7069	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	1.42 e7	Read Only	0.7686	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	2.24 e7	Read Only	0.7243	Read Only

☑ Perform Product Ion scan using NEG PPG 3e-5M. Record10mca.

Mass	Scan Rate	MCA	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10	3.31 e6	Read Only	0.6746	Read Only

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PREVENTIVE MAINTENANCE CHECKLIST:

☑ Check Cooling Fans for Turbo Pumps while MS is ON.
☑ Check QJet and QPS tuning voltage for reference.
☐ Record AC input Voltage while MS is OFF: _____(200-240VAC).
If Out-of-Range, notify customer.

☑ Clean Interface
- ☑ Curtain Plate
- ☑ Orifice Plate
- ☑ QJet
- ☑ Q0 Rods.

☑ Replace Roughing Pump Oil.
☑ Inspect Oil Exhaust Filter, if Applicable. ☐ N/A
☑ Clean and inspect built-in divert valve if used. ☐ N/A
☑ Check Multiplier Voltage, optimize if necessary.
☑ Replace four Air Filters at the bottom of the mass spectrometer.

☑Pump down overnight if possible. ☐ N/A

☑Perform Maintenance on Turbo V source.

☑Replace Electrode, if necessary. ☐ N/A
☑Check Turbo heaters resistances.
☑Check if Temperature is reached at 500C with TIS Probe installed.
☐Check if Temperature is reached at 500C with APCI Probe installed. ☑ N/A

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QTRAP 5500

LC/MS/MS Detector System
Appendix ZEFPM003-2L

POST PM PPG PERFORMANCE TESTS:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.7	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.3	Read Only
☑ CAD Medium	2.7	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.04 e6	≥1.2^{e}6	0.6737	0.6 to 0.8
Q1 500.380	1.60 e7	≥9.0^{e}6	0.6961	0.6 to 0.8
Q1 906.673	2.84 e7	≥1.4^{e}7	0.7179	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	0.7465	0.6 to 0.8

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

Mass	Q3 Intensity		Q3 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	5.02 e6	≥1.2^{e}6	0.6719	0.6 to 0.8
Q3 500.380	1.72 e7	≥9.0^{e}6	0.7443	0.6 to 0.8
Q3 906.673	3.00 e7	≥1.4^{e}7	0.7504	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.46 e8	≥6.8^{e}7	0.7202	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: 21.10% (≥ 10.0%)

Mass	MSMS Intensity		Width	Width Specs
	Value	Spec	Value	
Q1 609.3	5.78 e7	N/A	0.6888	Read Only
MS/MS 195.1	1.22 e7	N/A	0.7003	Read Only

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.35 e7	≥1.0^e7	0.7486	0.6 to 0.8
Q1 933.636	1000	50	7.52 e7	≥4.0^e7	0.7206	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	2.15 e7	≥8.0^e6	0.7492	0.6 to 0.8
Q3 933.636	1000	50	8.33 e7	≥4.0^e7	0.7299	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	8.54 e6	≥7.2 ^e6	0.1473	<0.35
ER 922.010	0.05	4.96 e7	≥2.8 ^e6	0.2434	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05		≥2.4 ^e7		<0.65
ER 922.010	0.05		≥6.8 ^e7		<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	1.81 e8	≥4.4 ^e7	0.1862	<0.35
ER 601.978	0.05	1.70 e8	≥5.6 ^e7	0.1809	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	5.72 e8	≥1.2 ^e8	0.5102	<0.65
ER 601.978	0.05	4.52 e8	≥1.6 ^e8	0.6187	<0.65

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate (Da/s)	Q0 Trapping OFF		Q0 Trapping ON	
		Intensity	Spec	Intensity	Spec
EPI 397.2	10000	> 3.0 e6	≥2.0 e6	> 7.0 e6	≥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	Yes	Contains only 397.2	N/A	N/A
☐ 236 OR ☑ 365	1000	Yes	Fragment Intensity	> 2.0 e6	≥1.6x $10^{e}6$

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.

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BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

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

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

SOP Numbers (see workplan for modifications)

ExtractionSOP No. 5-370

This Batch Contains The Following Samples:	
CR815PB-FS	J7783-FS
CR816LCS-FS	
J7781-FS	
J7782-FS	
J7782MS-FS	
J7782MSD-FS	

Laboratory Preparation Records

COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	09/19/2018	DMS

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BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID	Description
CR815PB-FS	Procedural Blank
CR816LCS-FS	Laboratory Control Sample - Ottawa Sand (180507-02)
J7781-FS	JAX-TCC-SD02-09112018
J7782-FS	JAX-TCC-SD03-09112018
J7782MS-FS	Matrix Spike of JAX-TCC-SD03-09112018
J7782MSD-FS	Matrix Spike Duplicate of JAX-TCC-SD03-09112018
J7783-FS	JAX-TCC-SD04-09112018

Samples Assigned By: Jonathan Thorn Date : September 13, 2018

Comments:

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BATTELLE - NORWELL OPERATIONS
ELECTRONIC DRY WEIGHT DETERMINATION

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Ctrs.	*	Tare Wt. (g)	Aliquot Wt. (g)	Dry Wt. (g)	Sample Wet Wt. (g)	% Dry Wt.	% Moisture	Sample Dry Wt. (g)
CR815PB-FS	NA	--	NA	NA	NA	2.07	100.00	0.00	2.07
CR816LCS-FS	NA	--	NA	NA	NA	1.99	100.00	0.00	1.99
J7781-FS	1	--	1.09	6.13	4.95	1.97	76.59	23.41	1.51
J7782-FS	1	--	1.08	6.98	5.52	2.02	75.25	24.75	1.52
J7782MS-FS	1	--	1.11	6.35	5.08	2.06	75.76	24.24	1.56
J7782MSD-FS	1	--	1.12	7.50	5.86	2.06	74.29	25.71	1.53
J7783-FS	1	--	1.09	7.86	6.08	1.98	73.71	26.29	1.46

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] * 100
Sample Dry Wt. (%) = [(Sample Wet Wt. (g) * (Percent Dry Wt./100)]
* "C" = Sample Container Is Consumed

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BATTELLE - NORWELL OPERATIONS
ELECTRONIC DRY WEIGHT DETERMINATION

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Ctrs.	*	Tare Wt. (g)	Aliquot Wt. (g)	Dry Wt. (g)	Sample Wet Wt. (g)	% Dry Wt.	% Moisture	Sample Dry Wt. (g)

Task: Wet Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	09/17/2018 SAS	BAL-015
CR816LCS-FS	09/17/2018 SAS	BAL-015
J7781-FS	09/17/2018 SAS	BAL-015
J7782-FS	09/17/2018 SAS	BAL-015
J7782MS-FS	09/17/2018 SAS	BAL-015
J7782MSD-FS	09/17/2018 SAS	BAL-015
J7783-FS	09/17/2018 SAS	BAL-015

Task: Tare Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	--	--
CR816LCS-FS	--	--
J7781-FS	09/17/2018 SAS	BAL-015
J7782-FS	09/17/2018 SAS	BAL-015
J7782MS-FS	09/17/2018 SAS	BAL-015
J7782MSD-FS	09/17/2018 SAS	BAL-015
J7783-FS	09/17/2018 SAS	BAL-015

Task: Aliquot Wet Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	--	--
CR816LCS-FS	--	--
J7781-FS	09/17/2018 SAS	BAL-015
J7782-FS	09/17/2018 SAS	BAL-015
J7782MS-FS	09/17/2018 SAS	BAL-015
J7782MSD-FS	09/17/2018 SAS	BAL-015
J7783-FS	09/17/2018 SAS	BAL-015

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] * 100
Sample Dry Wt. (%) = [(Sample Wet Wt. (g) * (Percent Dry Wt./100)]
* "C" = Sample Container Is Consumed

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BATTELLE - NORWELL OPERATIONS
ELECTRONIC DRY WEIGHT DETERMINATION

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID:	Ctrs.	*	Tare Wt. (g)	Aliquot Wt. (g)	Dry Wt. (g)	Sample Wet Wt. (g)	% Dry Wt.	% Moisture	Sample Dry Wt. (g)

Task: Aliquot Dry Weight

BNO-ID:	Date/Initials:	Battelle-ID:
CR815PB-FS	--	--
CR816LCS-FS	--	--
J7781-FS	09/18/2018 SAS	BAL-015
J7782-FS	09/18/2018 SAS	BAL-015
J7782MS-FS	09/18/2018 SAS	BAL-015
J7782MSD-FS	09/18/2018 SAS	BAL-015
J7783-FS	09/18/2018 SAS	BAL-015

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] * 100
Sample Dry Wt. (%) = [(Sample Wet Wt. (g) * (Percent Dry Wt./100)]
* "C" = Sample Container Is Consumed

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BATTELLE - NORWELL OPERATIONS
SURROGATE SPIKE FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CR815PB-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
CR816LCS-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
CR816LCS-FS	JZ88	LCS/MS	1	400	09/17/18 SAS	JCT	NA
J7781-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782MS-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782MS-FS	JZ88	LCS/MS	1	1000	09/17/18 SAS	JCT	NA
J7782MSD-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA
J7782MSD-FS	JZ88	LCS/MS	1	1000	09/17/18 SAS	JCT	NA
J7783-FS	JY27	SIS	1	50	09/17/18 SAS	JCT	NA

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JY27	Pipette	B814659662
JZ88	Pipette	B820865811

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BATTELLE - NORWELL OPERATIONS
COLUMN FRACTIONATION FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Extract Id	Date	Init.	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comments
CR815PB-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
CR816LCS-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7781-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7782-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7782MS-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7782MSD-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA
J7783-FS(3)	09/17/18	SAS	NA	NA	NA	NA	NA

Column Diameter: 13 mm **Procedure Comment:**

Elution Volume: 10 mL

Solvents

Reagents

Reagent Prep	Weight g	Name	Expires	Lot No	Procedure
RP-180917-3	Not Measured	0.4% NH3 in Methanol	09/17/18	181704	Per 100 mL, 3.5 mL am brought to 100 mL with
RP-180917-3	Not Measured	0.4% NH3 in Methanol	09/17/18	SHBJ0412	Per 100 mL, 3.5 mL am brought to 100 mL with
RP-180917-4	0.50	ENVI-CARB SPE	09/17/18	9025702	Rinse SPE cartridge wi

Fractions

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BATTELLE - NORWELL OPERATIONS
INTERNAL STANDARD SPIKING FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

(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
CR815PB-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
CR816LCS-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7781-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7782-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7782MS-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7782MSD-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS
J7783-FS(3)	950	50	JY26	50	1	1000	10.000	09/17/18 SAS	DMS

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JY26	Pipette	B814659662

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

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

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EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

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

Project No.(s)
100119154-SE0375

18-0559
CTO-SE0375: Sediment PFAS Analysis
SD

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Sep 13 2018 11:46AM LMG	**Received On/By:**	Sep 13 2018 11:46AM LMG
Relinquished From:	Sample Preparation: NA	**Received Location:**	LC Laboratory: NA
Relinquish Comment:	NA	**Received Comment:**	screening purposes only, see misc doc for details

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	J7781-FS(0)	NA	1	Intact	NA
2	J7782-FS(0)	NA	1	Intact	NA
3	J7783-FS(0)	NA	1	Intact	NA

Total Extracts: 3

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Sep 17 2018 5:14PM SAS	**Received On/By:**	Sep 17 2018 5:47PM 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	CR815PB-FS(3)	1000	10	Intact	NA
2	CR816LCS-FS(3)	1000	10	Intact	NA
3	J7781-FS(3)	1000	10	Intact	NA
4	J7782-FS(3)	1000	10	Intact	NA
5	J7782MS-FS(3)	1000	10	Intact	NA
6	J7782MSD-FS(3)	1000	10	Intact	NA
7	J7783-FS(3)	1000	10	Intact	NA

Total Extracts: 7

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BATTELLE - NORWELL OPERATIONS
PREPARATION EXTRACT SPLIT FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CR815PB-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
CR815PB-FS	2	--	9/17/2018 11:43:00 AM	CR815PB-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
CR815PB-FS	3	--	9/17/2018 11:43:00 AM	CR815PB-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
CR816LCS-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
CR816LCS-FS	2	--	9/17/2018 11:43:00 AM	CR816LCS-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
CR816LCS-FS	3	--	9/17/2018 11:43:00 AM	CR816LCS-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7781-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
J7781-FS	2	--	9/17/2018 11:43:00 AM	J7781-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7781-FS	3	--	9/17/2018 11:43:00 AM	J7781-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7782-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
J7782-FS	2	--	9/17/2018 11:43:00 AM	J7782-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7782-FS	3	--	9/17/2018 11:43:00 AM	J7782-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7782MS-FS	0	C	9/17/2018 9:55:00 AM	NA		NA	NA	1.000	1.000	09/17/18 SAS
J7782MS-FS	2	--	9/17/2018 11:43:00 AM	J7782MS-FS	0	10000	9000	1.111	1.111	09/17/18 SAS

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

BATTELLE
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

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
J7782MS-FS	3	--	9/17/2018 11:43:00 AM	J7782MS-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7782MSD-FS	0	C	9/17/2018 9:55:00 AM	NA		NA	NA	1.000	1.000	09/17/18 SAS
J7782MSD-FS	2	--	9/17/2018 11:43:00 AM	J7782MSD-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7782MSD-FS	3	--	9/17/2018 11:43:00 AM	J7782MSD-FS	0	10000	1000	10.000	10.000	09/17/18 SAS
J7783-FS	0	C	9/13/2018	NA		NA	NA	1.000	1.000	09/13/18 LMG
J7783-FS	2	--	9/17/2018 11:43:00 AM	J7783-FS	0	10000	9000	1.111	1.111	09/17/18 SAS
J7783-FS	3	--	9/17/2018 11:43:00 AM	J7783-FS	0	10000	1000	10.000	10.000	09/17/18 SAS

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]
Dilution Factor = [Sample Volume (uL) / Aliqot Volume (uL))] * Prior Dilution Factor
* - "C" = Extract is Consumed

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

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

Project No.(s)
100119154-SE0375

18-0559

CTO-SE0375: Sediment PFAS Analysis

SD

Entered By:	Lauren Griffith	**On:**	09/14/2018

For pre-screening by direct inject, an extract was prepared as follows:

After mixing the sample thoroughly, samples (BAL015) (target 1g) were weighed into a 50 mL polypropylene centrifuge tube. Actual weights were:
J7781-FS - 1.03g, J7782-FS - 0.99g, J7783-FS - 1.02g
20 mL of methanol (180724-02) were then added to the tube (pipette B641148506), and the sample was shaken on the geno grinder at 1200 rpm for 5 minutes. The extract
was then centrifuged at 3000 rpm for 5 minutes.

680 uL of methanol (180724-02) and 200uL MilliQ water were then pipetted (B820865811) into an eppendorf tube, followed by 50 uL each of JY26 and JY28 (pipette B814659662). Addition of standard solutions was witnessed by Bob Lizotte. A 20 uL aliquot (pipette I0793912B) of extract was then added to the eppendorf tube containing spiked methanol. The tube was then capped and vortexed to mix. An aliquot was then transferred to an autosampler vial and submitted for analysis.

Task Leader Approval:	Lauren Griffith	**On:**	09/18/2018
SupervisorApproval:	Denise Schumitz	**On:**	09/18/2018
PM Approval:	Jonathan Thorn	**On:**	09/19/2018

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Sequence Report

Created with Analyst Reporter
Printed: 18/09/2018 3:13:06 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		9/17/2018 6:08:24 PM	5-0369.dam	09172018.wiff
2	KA86	L1	9/17/2018 6:19:17 PM	5-0369.dam	09172018.wiff
3	KA87	L2	9/17/2018 6:30:11 PM	5-0369.dam	09172018.wiff
4	KA88	L3	9/17/2018 6:41:03 PM	5-0369.dam	09172018.wiff
5	KA89	L4	9/17/2018 6:51:56 PM	5-0369.dam	09172018.wiff
6	KA90	L5	9/17/2018 7:02:47 PM	5-0369.dam	09172018.wiff
7	KA91	L6	9/17/2018 7:13:39 PM	5-0369.dam	09172018.wiff
8	KA92	L7	9/17/2018 7:24:30 PM	5-0369.dam	09172018.wiff
9	JY46 IB	Instrument Blank	9/17/2018 7:35:21 PM	5-0369.dam	09172018.wiff
10	JY45 ICC	ICC	9/17/2018 7:46:13 PM	5-0369.dam	09172018.wiff
11	KA29 BRANCH	Branch Standard	9/17/2018 7:57:05 PM	5-0369.dam	09172018.wiff
12	MeOH		9/17/2018 8:07:57 PM	5-0369.dam	09172018.wiff
13	CR815PB-FS(3)	Procedural Blank	9/17/2018 8:18:50 PM	5-0369.dam	09172018.wiff
14	CR816LCS-FS(3)	Laboratory Control Sample	9/17/2018 8:29:42 PM	5-0369.dam	09172018.wiff
15	J7781-FS(3)	JAX-TCC-SD02-09112018	9/17/2018 8:40:33 PM	5-0369.dam	09172018.wiff
16	J7782-FS(3)	JAX-TCC-SD03-09112018	9/17/2018 8:51:25 PM	5-0369.dam	09172018.wiff
17	J7782MS-FS(3)	JAX-TCC-SD03-09112018	9/17/2018 9:02:16 PM	5-0369.dam	09172018.wiff
18	J7782MSD-FS(3)	JAX-TCC-SD03-09112018	9/17/2018 9:13:07 PM	5-0369.dam	09172018.wiff
19	J7783-FS(3)	JAX-TCC-SD04-09112018	9/17/2018 9:23:58 PM	5-0369.dam	09172018.wiff
6	KA90 CCV	CCV	9/17/2018 9:34:51 PM	5-0369.dam	09172018.wiff
20	MeOH		9/17/2018 9:45:43 PM	5-0369.dam	09172018.wiff
21	CR817PB-FS(0)	Procedural Blank	9/17/2018 9:56:35 PM	5-0369.dam	09172018.wiff
22	CR818LCS-FS(0)	Laboratory Control Sample	9/17/2018 10:07:27 PM	5-0369.dam	09172018.wiff
23	J7785-FS(0)	JAX-TCC-FRB-09112018	9/17/2018 10:18:19 PM	5-0369.dam	09172018.wiff
24	J7774-FS(0)	JAX-TCC-EB02-09112018	9/17/2018 10:29:11 PM	5-0369.dam	09172018.wiff
25	J7784-FS(0)	JAX-TCC-EB03-09112018	9/17/2018 10:40:02 PM	5-0369.dam	09172018.wiff
5	KA89 CCV	CCV	9/17/2018 10:50:54	5-0369.dam	09172018.wiff

1

1 - Not reported with this batch. BL 9/18/218

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Sequence Report

Created with Analyst Reporter
Printed: 18/09/2018 3:13:06 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
			PM		
26	MeOH		9/17/2018 11:01:47 PM	5-0369.dam	09172018.wiff
27	J7778-FS(0)	JAX-TCC-MWB1-09112018	9/17/2018 11:12:37 PM	5-0369.dam	09172018.wiff
28	J7778-FS-D(3)	JAX-TCC-MWB1-09112018	9/17/2018 11:23:29 PM	5-0369.dam	09172018.wiff
29	J7775-FS(0)	JAX-TCC-MWC3-09112018	9/17/2018 11:34:21 PM	5-0369.dam	09172018.wiff
30	J7775-FS-D(3)	JAX-TCC-MWC3-09112018	9/17/2018 11:45:13 PM	5-0369.dam	09172018.wiff
31	J7775-FS-D(5)	JAX-TCC-MWC3-09112018	9/17/2018 11:56:05 PM	5-0369.dam	09172018.wiff
32	J7776-FS(0)	JAX-TCC-MWC3-09112018-FD	9/18/2018 12:06:57 AM	5-0369.dam	09172018.wiff
33	J7776-FS-D(3)	JAX-TCC-MWC3-09112018-FD	9/18/2018 12:17:49 AM	5-0369.dam	09172018.wiff
34	J7776-FS-D(5)	JAX-TCC-MWC3-09112018-FD	9/18/2018 12:28:40 AM	5-0369.dam	09172018.wiff
26	MeOH		9/18/2018 12:39:31 AM	5-0369.dam	09172018.wiff
6	KA90 CCV	CCV	9/18/2018 12:50:22 AM	5-0369.dam	09172018.wiff
20	MeOH		9/18/2018 1:01:15 AM	5-0369.dam	09172018.wiff
35	J7779-FS(0)	JAX-TCC-SW01-09112018	9/18/2018 1:12:07 AM	5-0369.dam	09172018.wiff
36	J7779-FS-D(3)	JAX-TCC-SW01-09112018	9/18/2018 1:22:59 AM	5-0369.dam	09172018.wiff
37	J7779-FS-D(5)	JAX-TCC-SW01-09112018	9/18/2018 1:33:50 AM	5-0369.dam	09172018.wiff
38	J7780-FS(0)	JAX-TCC-SW02-09112018	9/18/2018 1:44:42 AM	5-0369.dam	09172018.wiff
39	J7780-FS-D(3)	JAX-TCC-SW02-09112018	9/18/2018 1:55:34 AM	5-0369.dam	09172018.wiff
40	J7780-FS-D(5)	JAX-TCC-SW02-09112018	9/18/2018 2:06:26 AM	5-0369.dam	09172018.wiff
41	J7777-FS(0)	JAX-TCC-MWI2-09112018	9/18/2018 2:17:18 AM	5-0369.dam	09172018.wiff
42	J7777-FS-D(3)	JAX-TCC-MWI2-09112018	9/18/2018 2:28:10 AM	5-0369.dam	09172018.wiff
43	J7777-FS-D(5)	JAX-TCC-MWI2-09112018	9/18/2018 2:39:01 AM	5-0369.dam	09172018.wiff
12	MeOH		9/18/2018 2:49:52 AM	5-0369.dam	09172018.wiff
5	KA89 CCV	CCV	9/18/2018 3:00:45 AM	5-0369.dam	09172018.wiff

1

1 - Not reported with this batch. BL 9/18/2018

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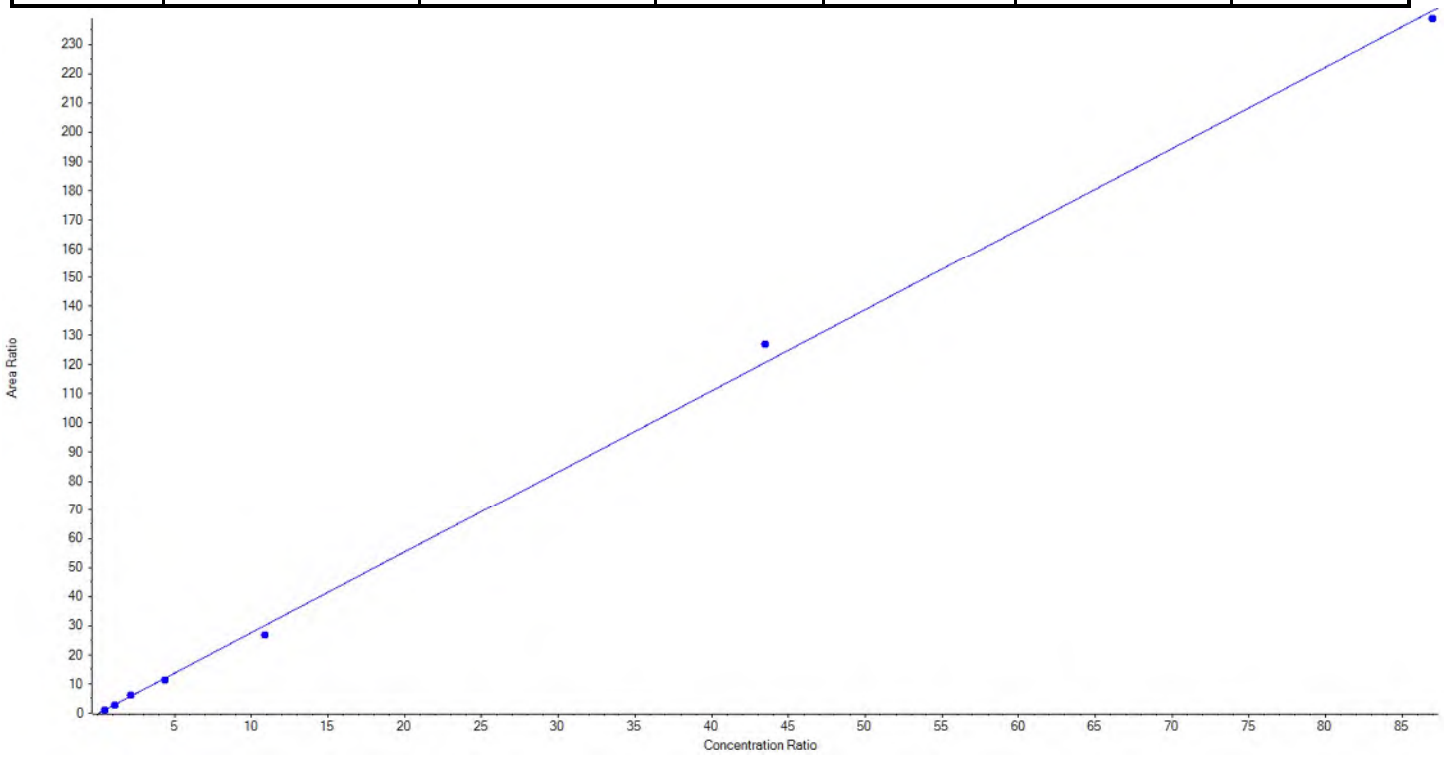
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFBS_1	**Data File**	09172018.wiff
MRM Transition	298.9 / 80.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFBS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 2.77909 x + -0.17589 (r = 0.99902) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	107.210507	106.2
3	KA87	L2	True	252.00	256.792877	101.9
4	KA88	L3	True	505.00	522.951445	103.6
5	KA89	L4	True	1010.00	961.467448	95.2
6	KA90	L5	True	2525.00	2251.753492	89.2
7	KA91	L6	True	10100.00	10619.448743	105.1
8	KA92	L7	True	20200.00	19973.375488	98.9



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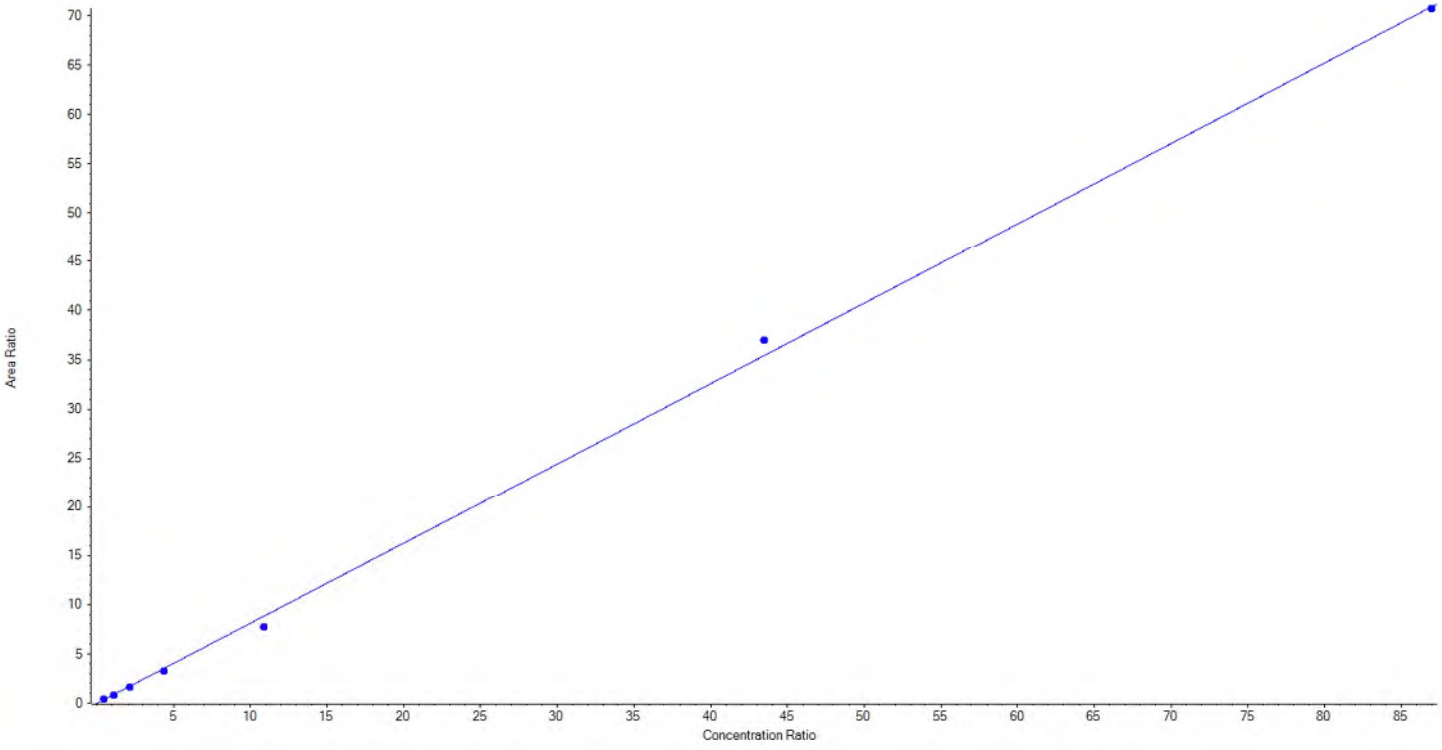
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFBS_2	**Data File**	09172018.wiff
MRM Transition	298.9 / 99.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFBS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.81561 x + -0.04043 (r = 0.99896) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	124.306355	123.1
3	KA87	L2	True	252.00	242.352302	96.2
4	KA88	L3	True	505.00	480.256328	95.1
5	KA89	L4	True	1010.00	947.233424	93.8
6	KA90	L5	True	2525.00	2218.136856	87.9
7	KA91	L6	True	10100.00	10531.345026	104.3
8	KA92	L7	True	20200.00	20149.369708	99.8



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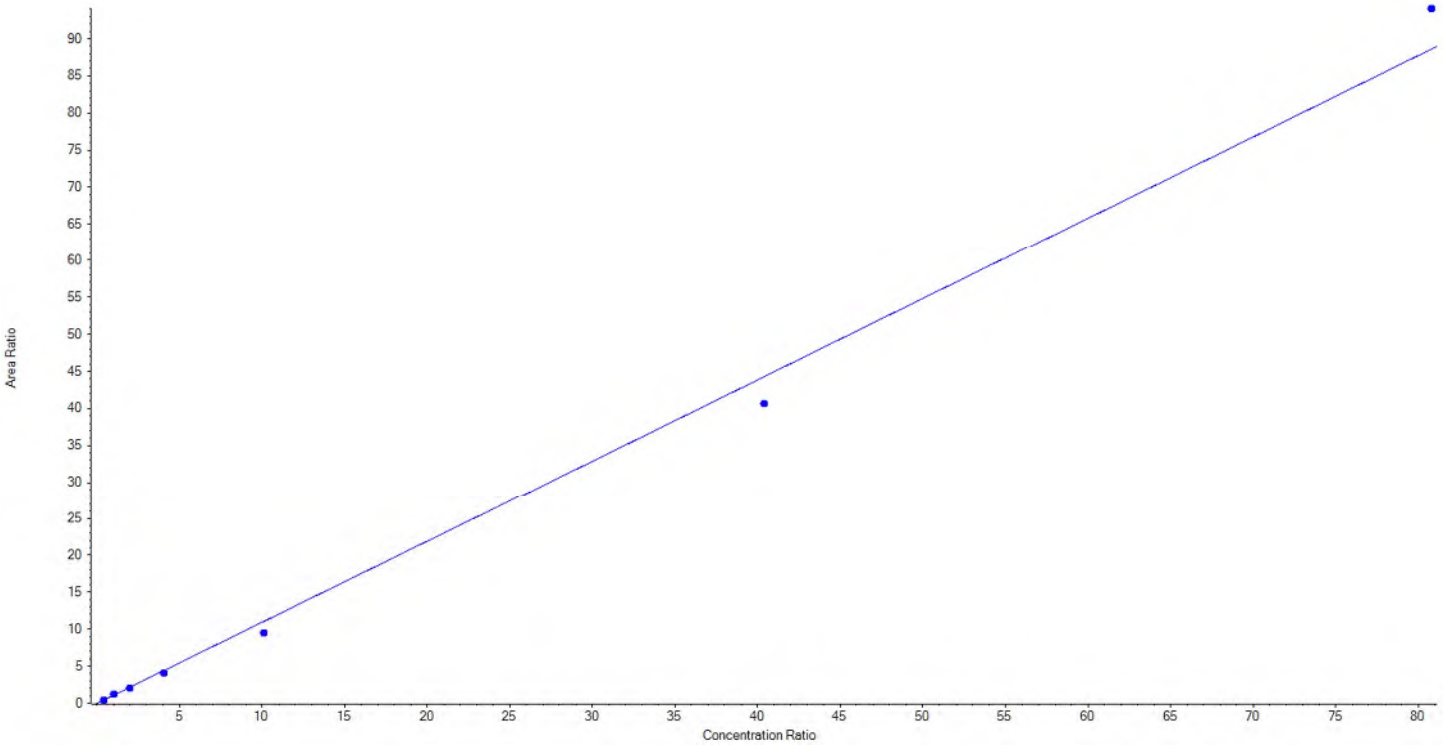
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxA_1	**Data File**	09172018.wiff
MRM Transition	313.0 / 269.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C5-PFHxA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.09727 x + -0.04646 (r = 0.99674) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	116.251169	115.1
3	KA87	L2	True	252.00	288.265557	114.4
4	KA88	L3	True	505.00	469.463253	93.0
5	KA89	L4	True	1010.00	946.375417	93.7
6	KA90	L5	True	2525.00	2171.771994	86.0
7	KA91	L6	True	10100.00	9261.678272	91.7
8	KA92	L7	True	20200.00	21439.194338	106.1



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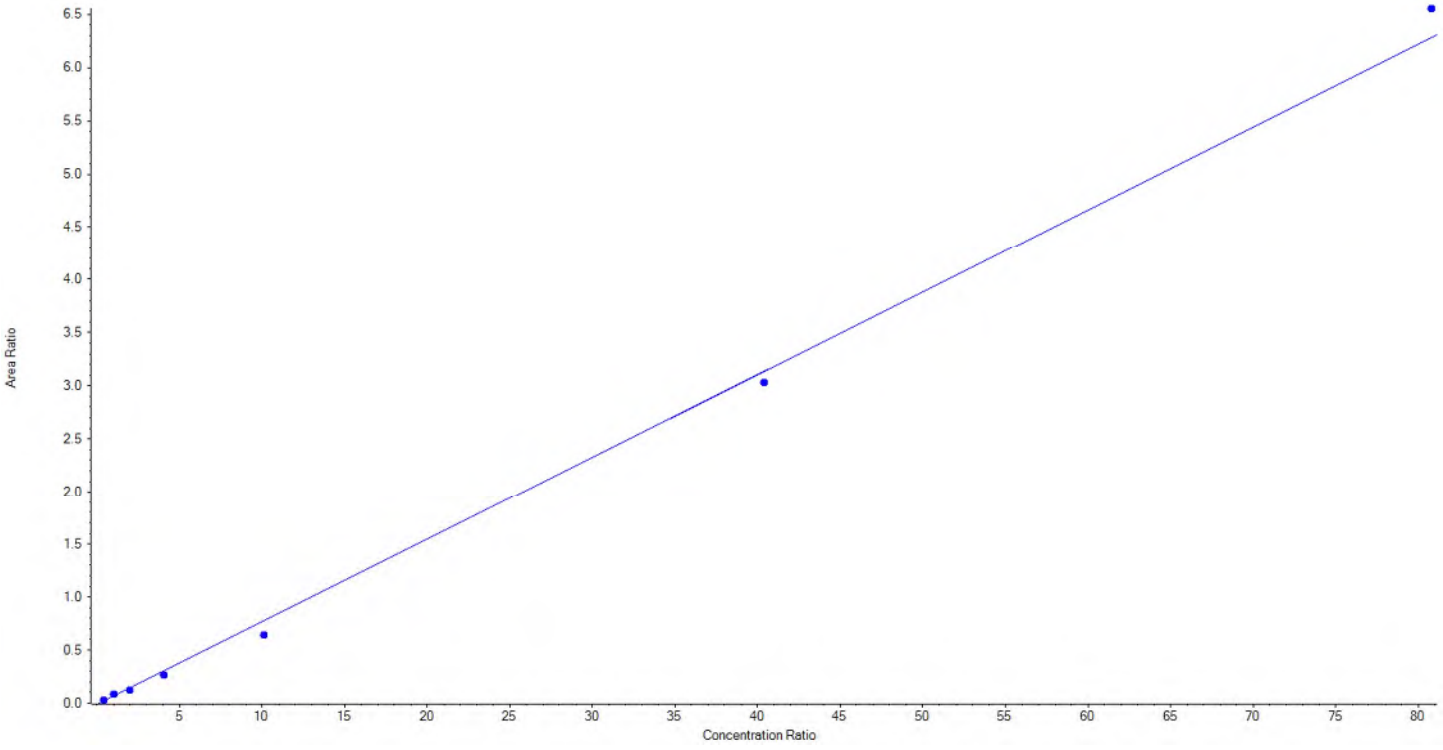
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxA_2	**Data File**	09172018.wiff
MRM Transition	313.0 / 119.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C5-PFHxA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.07785 x + -0.01012 (r = 0.99736) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	118.706895	117.5
3	KA87	L2	True	252.00	315.063029	125.0
4	KA88	L3	True	505.00	436.406684	86.4
5	KA89	L4	True	1010.00	880.568908	87.2
6	KA90	L5	True	2525.00	2088.102209	82.7
7	KA91	L6	True	10100.00	9776.953274	96.8
8	KA92	L7	True	20200.00	21077.199002	104.3



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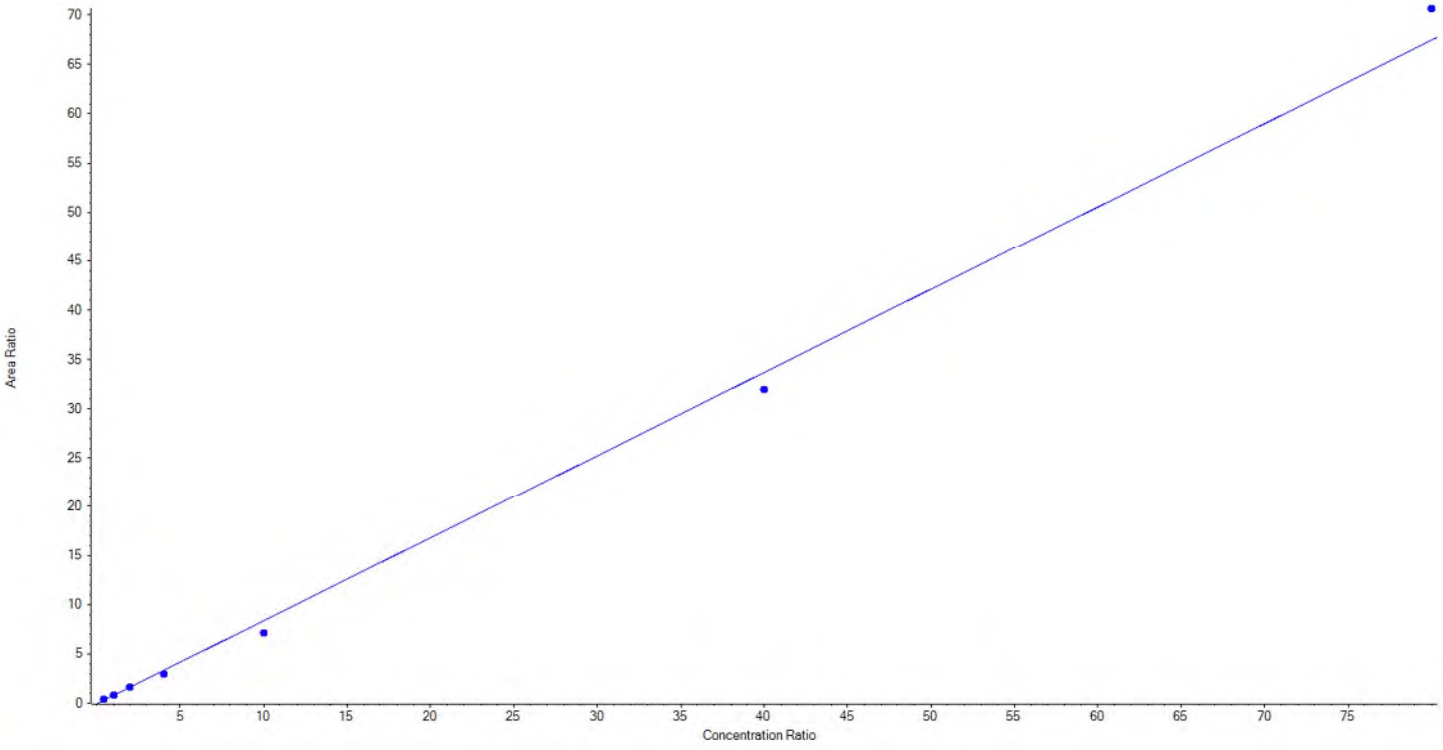
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHpA_1	**Data File**	09172018.wiff
MRM Transition	363.0 / 319.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.84373 x + -0.06432 (r = 0.99777) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	126.435711	126.4
3	KA87	L2	True	250.00	247.462947	99.0
4	KA88	L3	True	500.00	494.594695	98.9
5	KA89	L4	True	1000.00	908.164781	90.8
6	KA90	L5	True	2500.00	2128.310132	85.1
7	KA91	L6	True	10000.00	9497.225875	95.0
8	KA92	L7	True	20000.00	20947.805860	104.7



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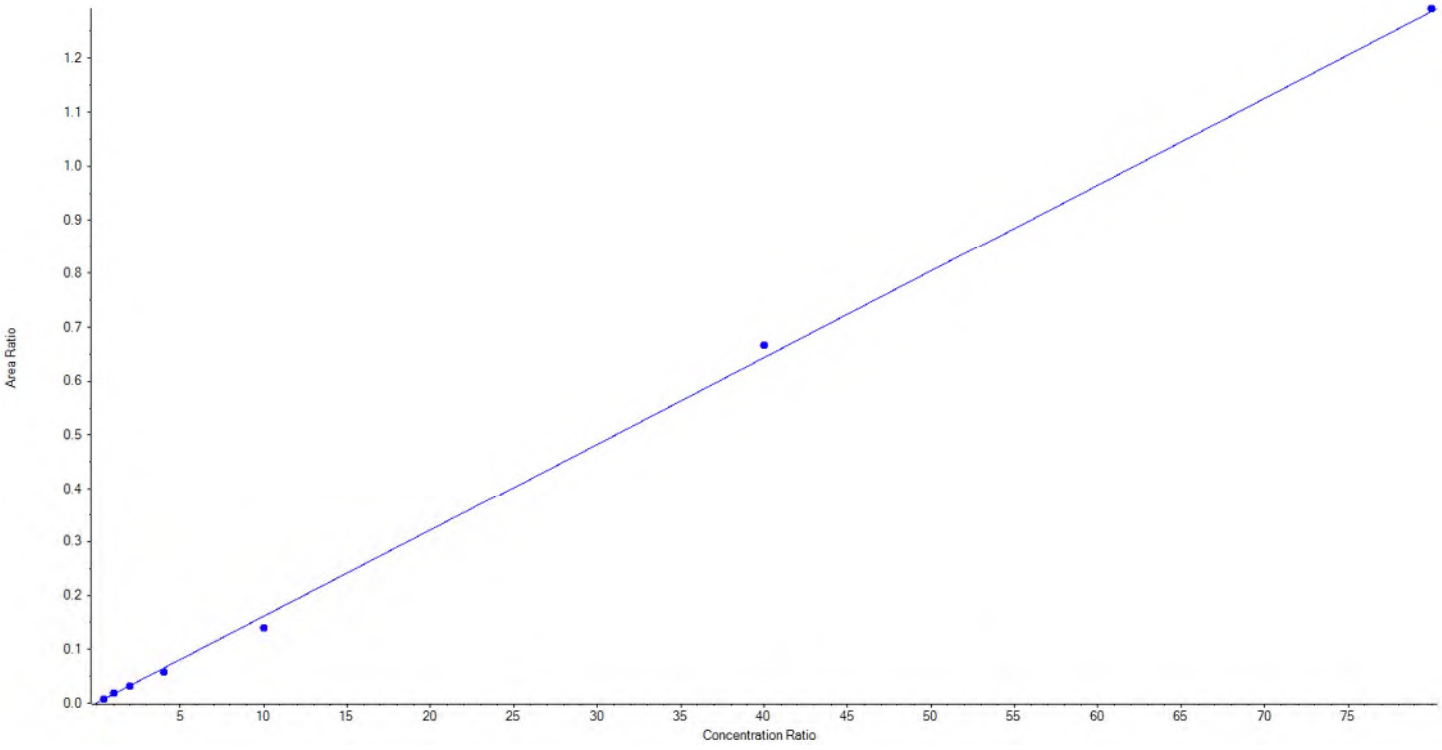
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHpA_2	**Data File**	09172018.wiff
MRM Transition	363.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.01607 x + 5.40020e-4 (r = 0.99871) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	117.894562	117.9
3	KA87	L2	True	250.00	272.310493	108.9
4	KA88	L3	True	500.00	476.146385	95.2
5	KA89	L4	True	1000.00	874.726007	87.5
6	KA90	L5	True	2500.00	2160.243680	86.4
7	KA91	L6	True	10000.00	10365.244292	103.7
8	KA92	L7	True	20000.00	20083.434581	100.4



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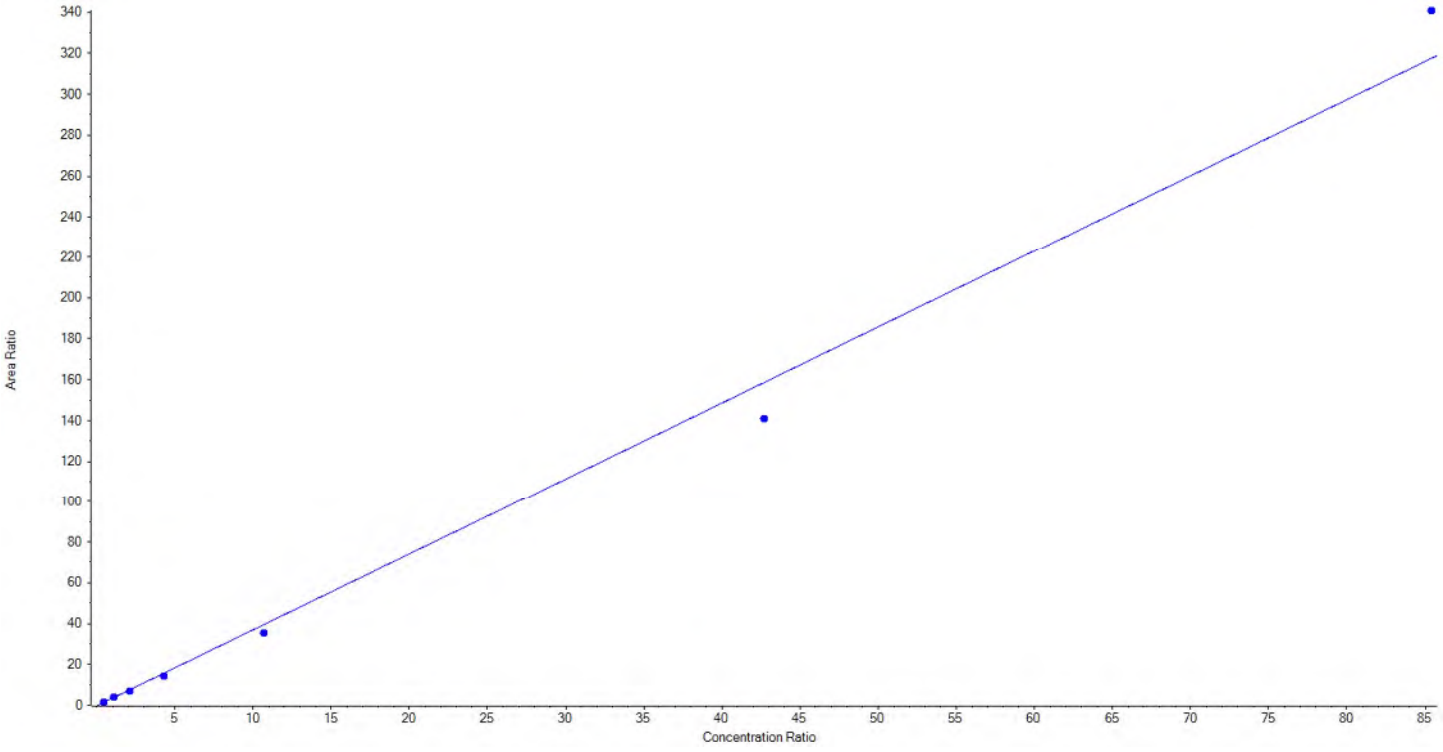
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxS_1	**Data File**	09172018.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFHxS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 3.72115 x + -0.32244 (r = 0.99560) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	125.028959	123.8
3	KA87	L2	True	252.00	277.132033	110.0
4	KA88	L3	True	505.00	449.866974	89.1
5	KA89	L4	True	1010.00	917.601880	90.9
6	KA90	L5	True	2525.00	2277.653301	90.2
7	KA91	L6	True	10100.00	8965.996617	88.8
8	KA92	L7	True	20200.00	21679.720237	107.3



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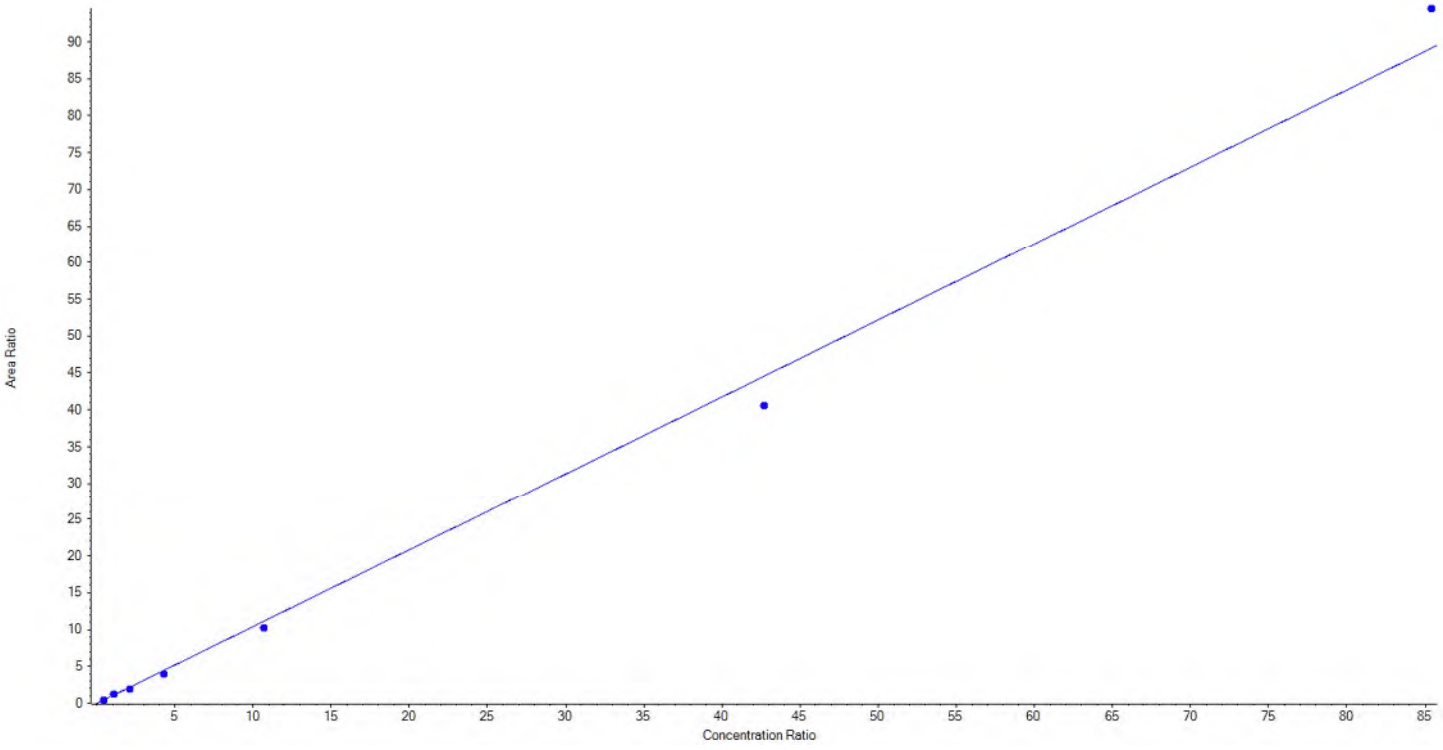
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFHxS_2	**Data File**	09172018.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C3-PFHxS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.04400 x + -0.03566 (r = 0.99689) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	101.00	115.879496	114.7
3	KA87	L2	True	252.00	298.762264	118.6
4	KA88	L3	True	505.00	452.963101	89.7
5	KA89	L4	True	1010.00	891.385065	88.3
6	KA90	L5	True	2525.00	2312.226195	91.6
7	KA91	L6	True	10100.00	9209.878255	91.2
8	KA92	L7	True	20200.00	21411.905624	106.0



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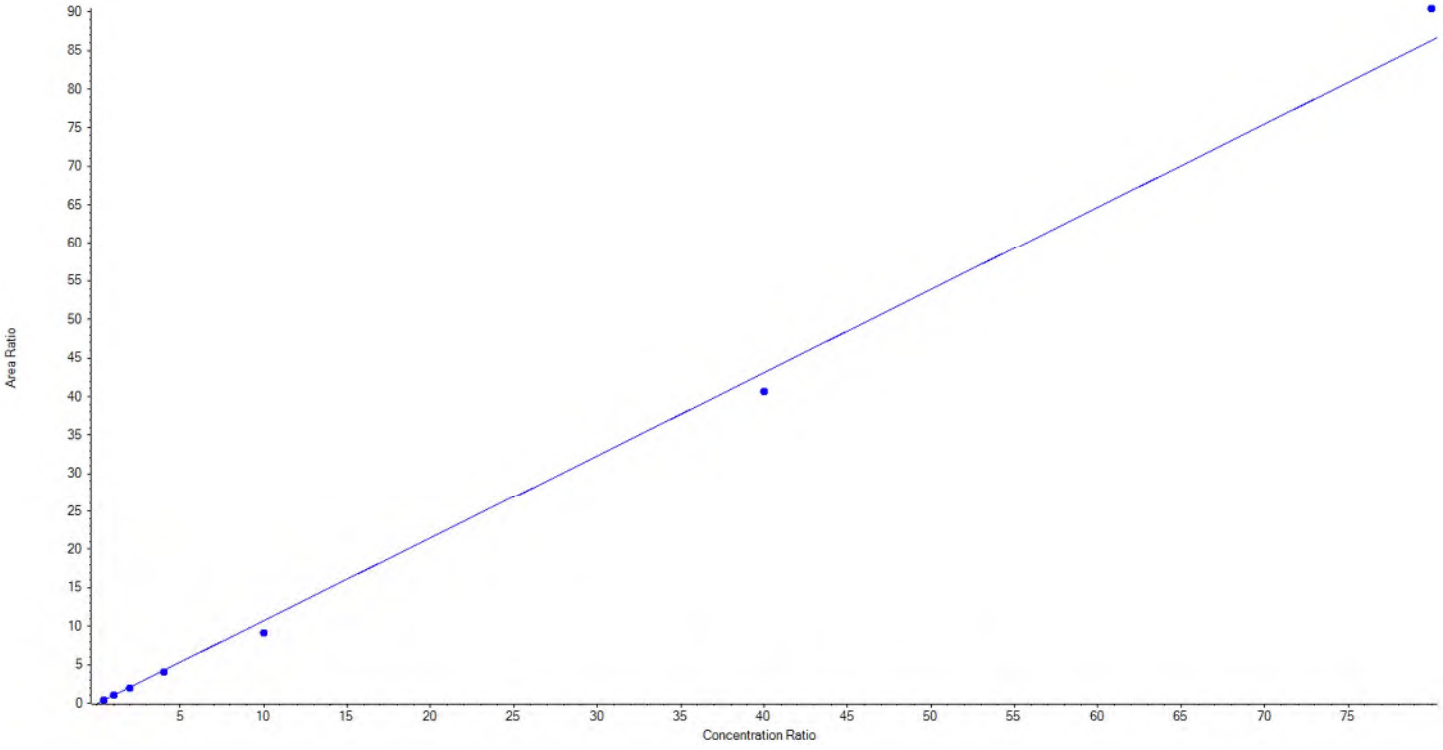
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOA_1	**Data File**	09172018.wiff
MRM Transition	413.0 / 369.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.07936 x + -0.07884 (r = 0.99776) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	120.628781	120.6
3	KA87	L2	True	250.00	267.473813	107.0
4	KA88	L3	True	500.00	457.308715	91.5
5	KA89	L4	True	1000.00	964.357849	96.4
6	KA90	L5	True	2500.00	2129.724084	85.2
7	KA91	L6	True	10000.00	9448.533833	94.5
8	KA92	L7	True	20000.00	20961.972925	104.8



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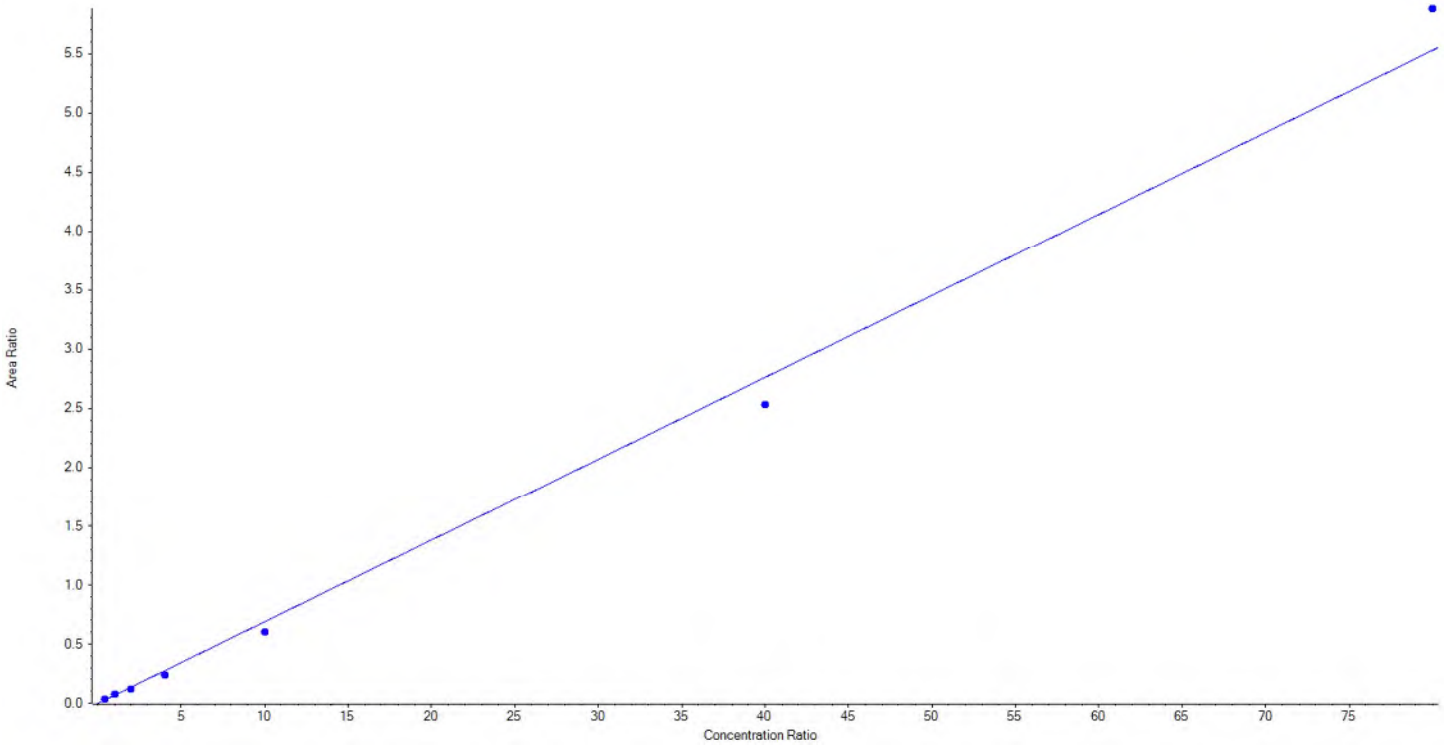
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOA_2	**Data File**	09172018.wiff
MRM Transition	413.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.06913 x + -0.00318 (r = 0.99653) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	128.340625	128.3
3	KA87	L2	True	250.00	274.279064	109.7
4	KA88	L3	True	500.00	442.322655	88.5
5	KA89	L4	True	1000.00	876.025066	87.6
6	KA90	L5	True	2500.00	2197.982787	87.9
7	KA91	L6	True	10000.00	9161.230341	91.6
8	KA92	L7	True	20000.00	21269.819462	106.4



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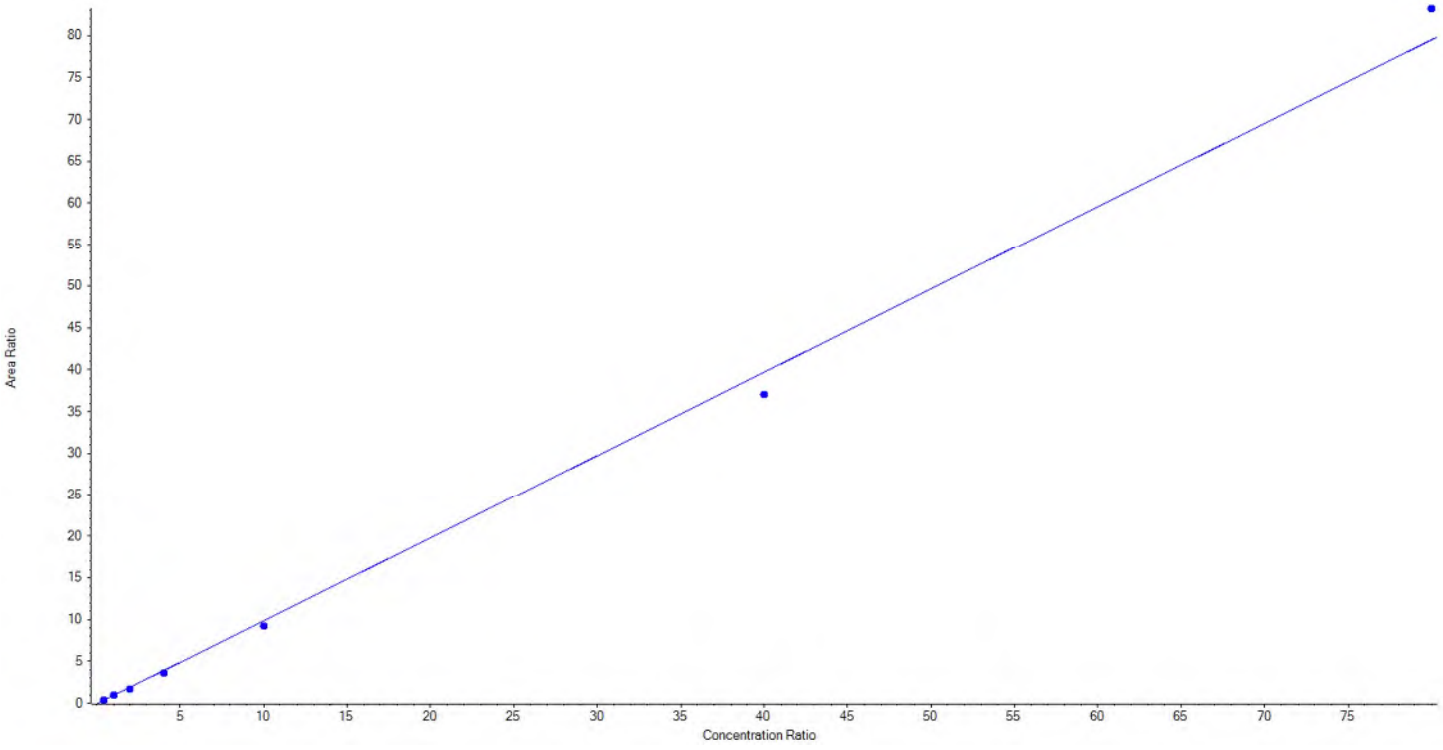
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFNA_1	**Data File**	09172018.wiff
MRM Transition	463.0 / 419.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C9-PFNA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.99457 x + -0.09664 (r = 0.99813) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	126.420004	126.4
3	KA87	L2	True	250.00	251.786479	100.7
4	KA88	L3	True	500.00	440.018950	88.0
5	KA89	L4	True	1000.00	935.526977	93.6
6	KA90	L5	True	2500.00	2333.848398	93.4
7	KA91	L6	True	10000.00	9328.596873	93.3
8	KA92	L7	True	20000.00	20933.802318	104.7



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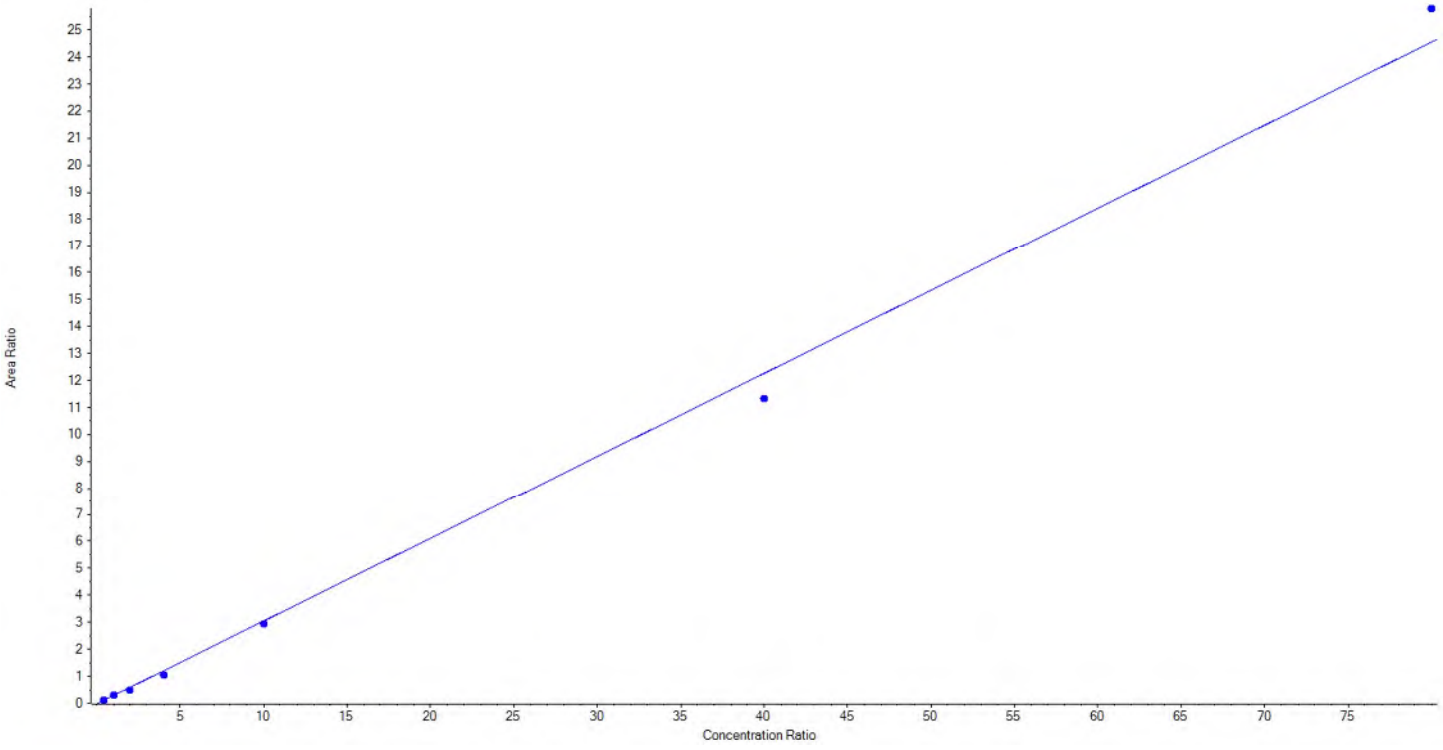
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFNA_2	**Data File**	09172018.wiff
MRM Transition	463.0 / 219.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C9-PFNA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.30725 x + -0.02895 (r = 0.99770) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	125.402344	125.4
3	KA87	L2	True	250.00	271.570220	108.6
4	KA88	L3	True	500.00	426.763431	85.4
5	KA89	L4	True	1000.00	869.989302	87.0
6	KA90	L5	True	2500.00	2402.105144	96.1
7	KA91	L6	True	10000.00	9252.579507	92.5
8	KA92	L7	True	20000.00	21001.590051	105.0



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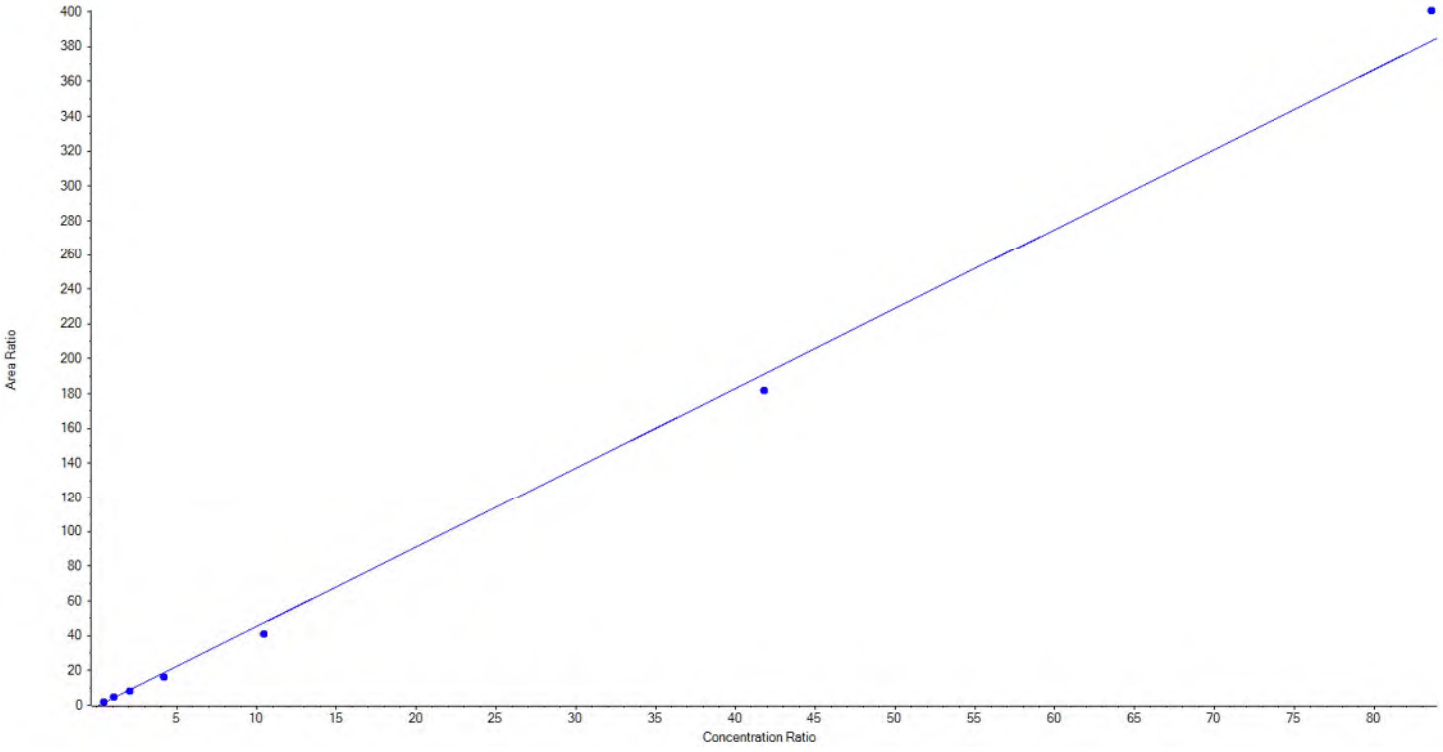
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOS_1	**Data File**	09172018.wiff
MRM Transition	499.0 / 80.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 4.59265 x + -0.69673 (r = 0.99797) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	119.339962	119.3
3	KA87	L2	True	250.00	281.982603	112.8
4	KA88	L3	True	500.00	462.945369	92.6
5	KA89	L4	True	1000.00	882.307346	88.2
6	KA90	L5	True	2500.00	2184.290401	87.4
7	KA91	L6	True	10000.00	9515.980092	95.2
8	KA92	L7	True	20000.00	20903.154227	104.5



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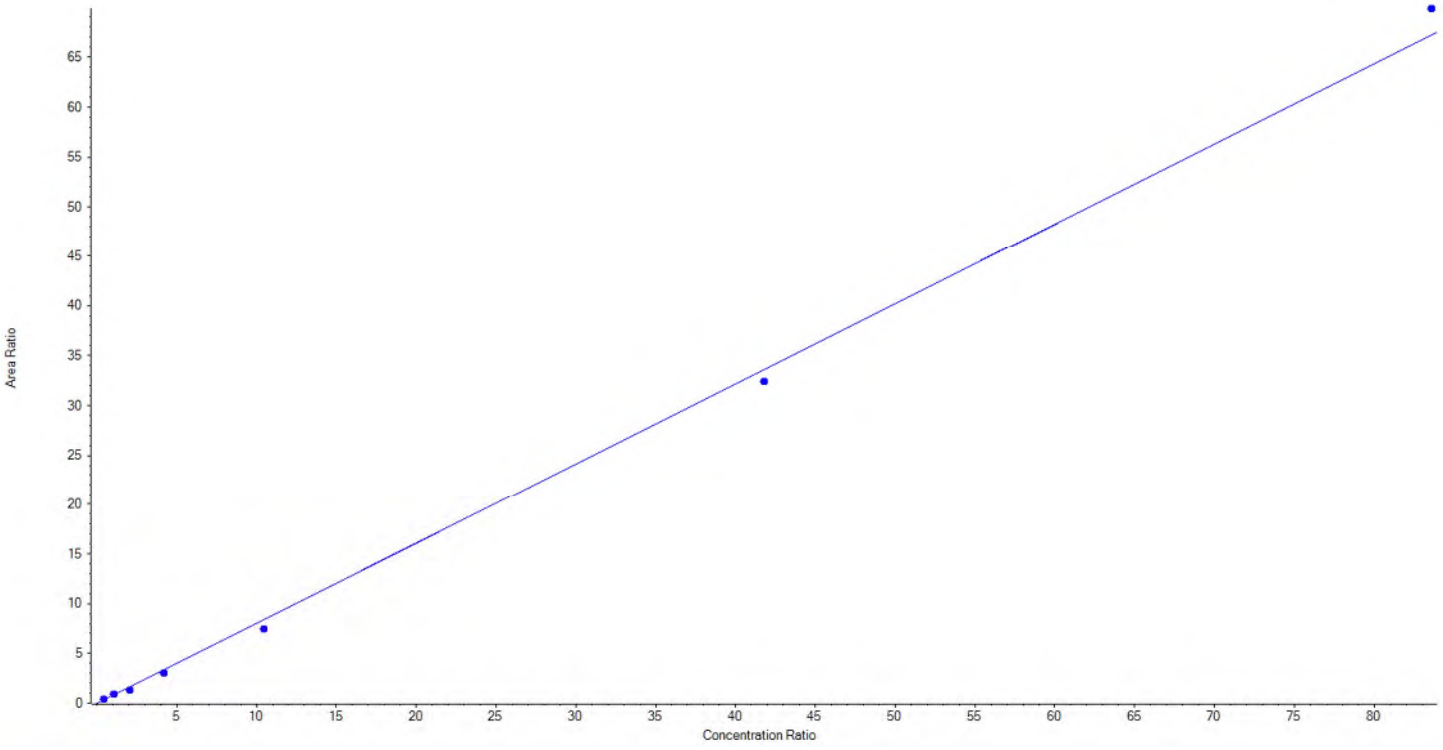
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFOS_2	**Data File**	09172018.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C8-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.80443 x + -0.02185 (r = 0.99812) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	125.505534	125.5
3	KA87	L2	True	250.00	288.650412	115.5
4	KA88	L3	True	500.00	405.249707	81.1
5	KA89	L4	True	1000.00	892.164074	89.2
6	KA90	L5	True	2500.00	2209.859495	88.4
7	KA91	L6	True	10000.00	9646.143779	96.5
8	KA92	L7	True	20000.00	20782.426999	103.9



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Calibration Summary Report

Created with Analyst Reporter
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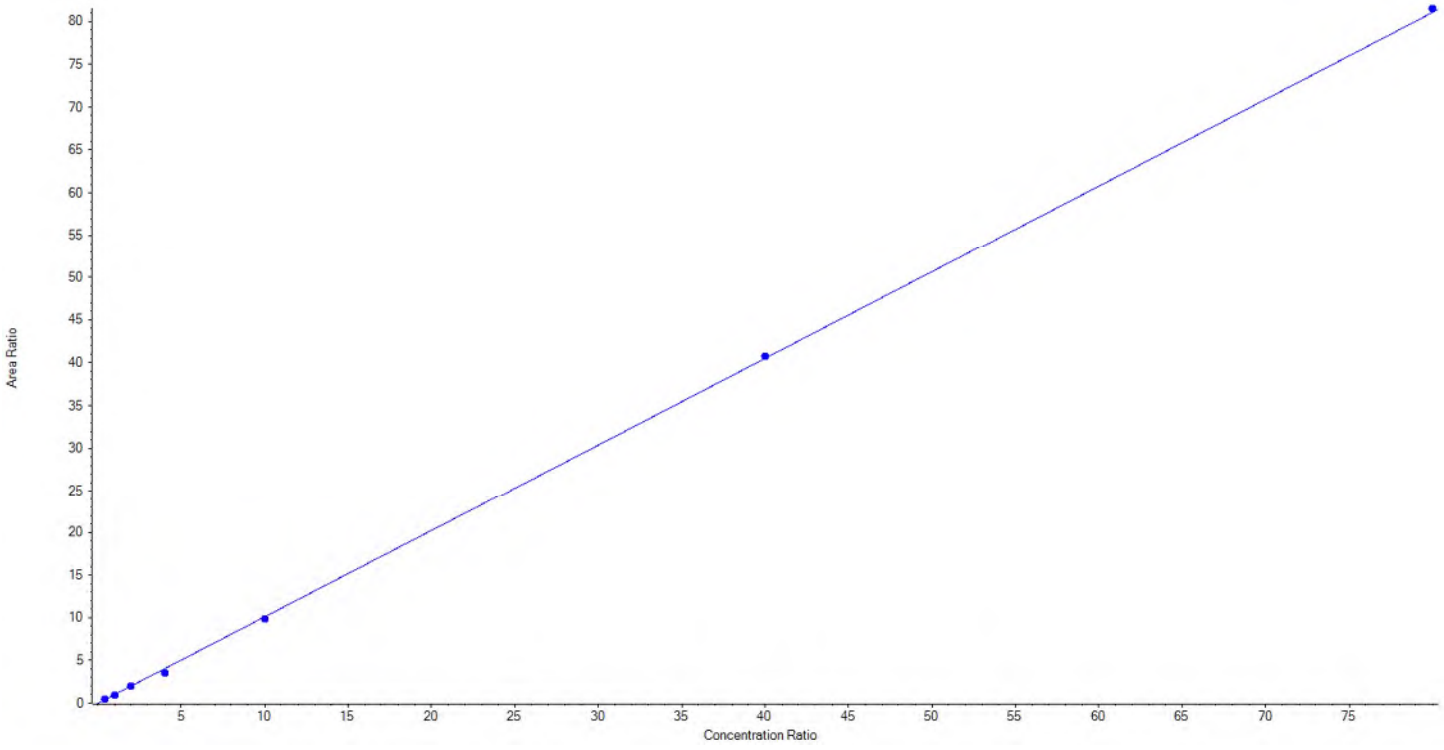
Analyte Name	PFDA_1	**Data File**	09172018.wiff
MRM Transition	513.0 / 469.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C6-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.01339 x + -0.02388 (r = 0.99961) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	123.381231	123.4
3	KA87	L2	True	250.00	229.784275	91.9
4	KA88	L3	True	500.00	489.210038	97.8
5	KA89	L4	True	1000.00	877.127184	87.7
6	KA90	L5	True	2500.00	2446.700602	97.9
7	KA91	L6	True	10000.00	10072.665193	100.7
8	KA92	L7	True	20000.00	20111.131477	100.6



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Calibration Summary Report

Created with Analyst Reporter
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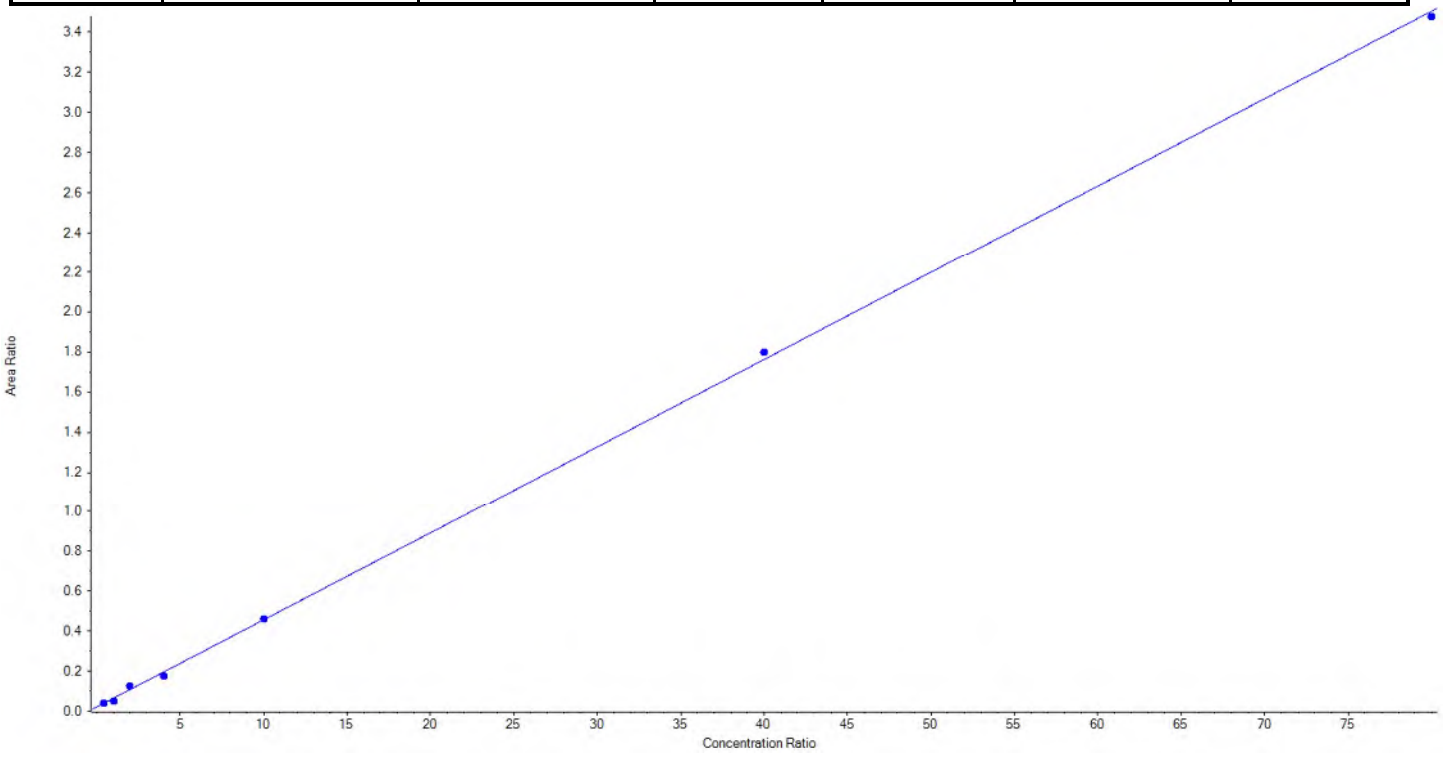
Analyte Name	PFDA_2	**Data File**	09172018.wiff
MRM Transition	513.0 / 219.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C6-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.04354 x + 0.02103 (r = 0.99909) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	120.626037	120.6
3	KA87	L2	True	250.00	179.629735	71.9
4	KA88	L3	True	500.00	584.610035	116.9
5	KA89	L4	True	1000.00	885.454676	88.6
6	KA90	L5	True	2500.00	2516.263417	100.7
7	KA91	L6	True	10000.00	10217.395513	102.2
8	KA92	L7	True	20000.00	19846.020588	99.2



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Calibration Summary Report

Created with Analyst Reporter
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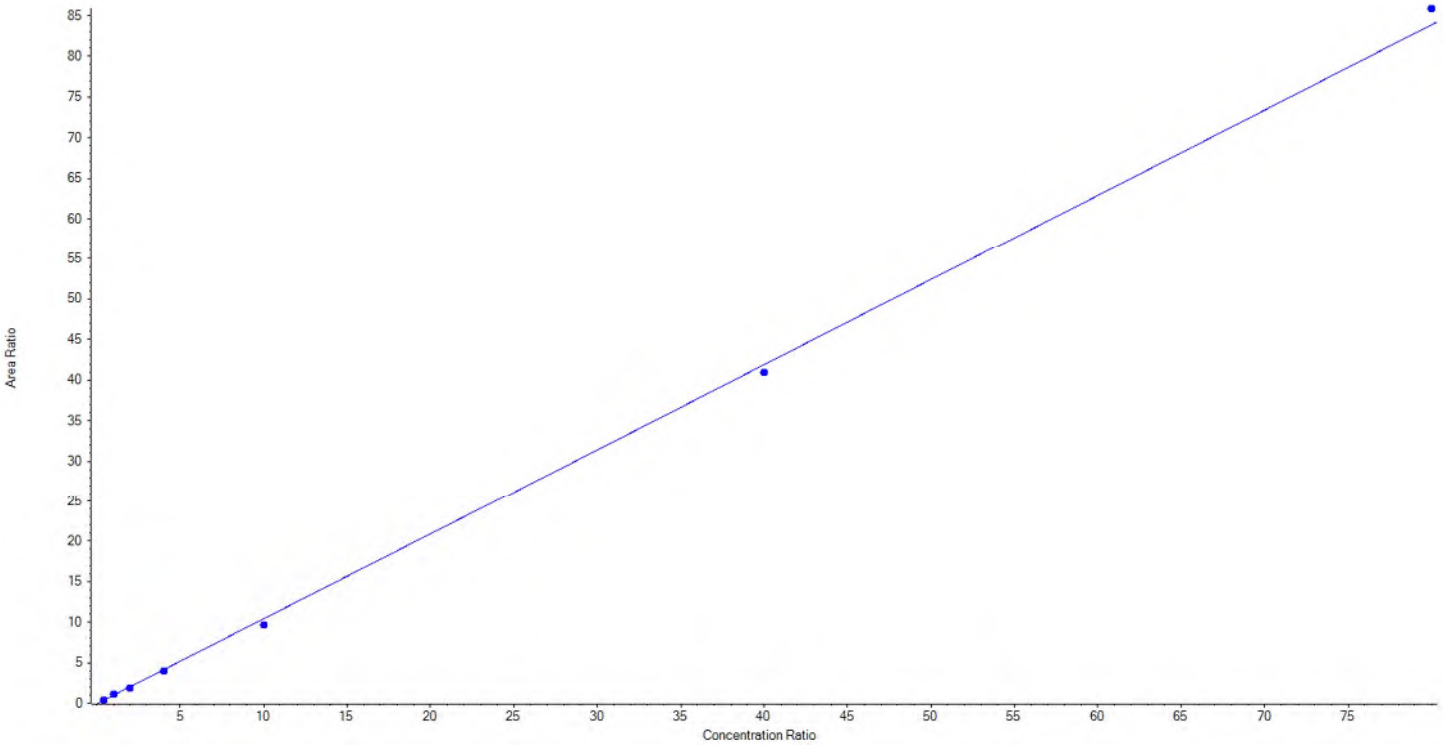
Analyte Name	PFUnA_1	**Data File**	09172018.wiff
MRM Transition	563.0 / 519.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C7-PFUnA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.04951 x + -0.07889 (r = 0.99938) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	112.077862	112.1
3	KA87	L2	True	250.00	269.635011	107.9
4	KA88	L3	True	500.00	464.306485	92.9
5	KA89	L4	True	1000.00	947.368226	94.7
6	KA90	L5	True	2500.00	2308.798801	92.4
7	KA91	L6	True	10000.00	9775.798827	97.8
8	KA92	L7	True	20000.00	20472.014787	102.4



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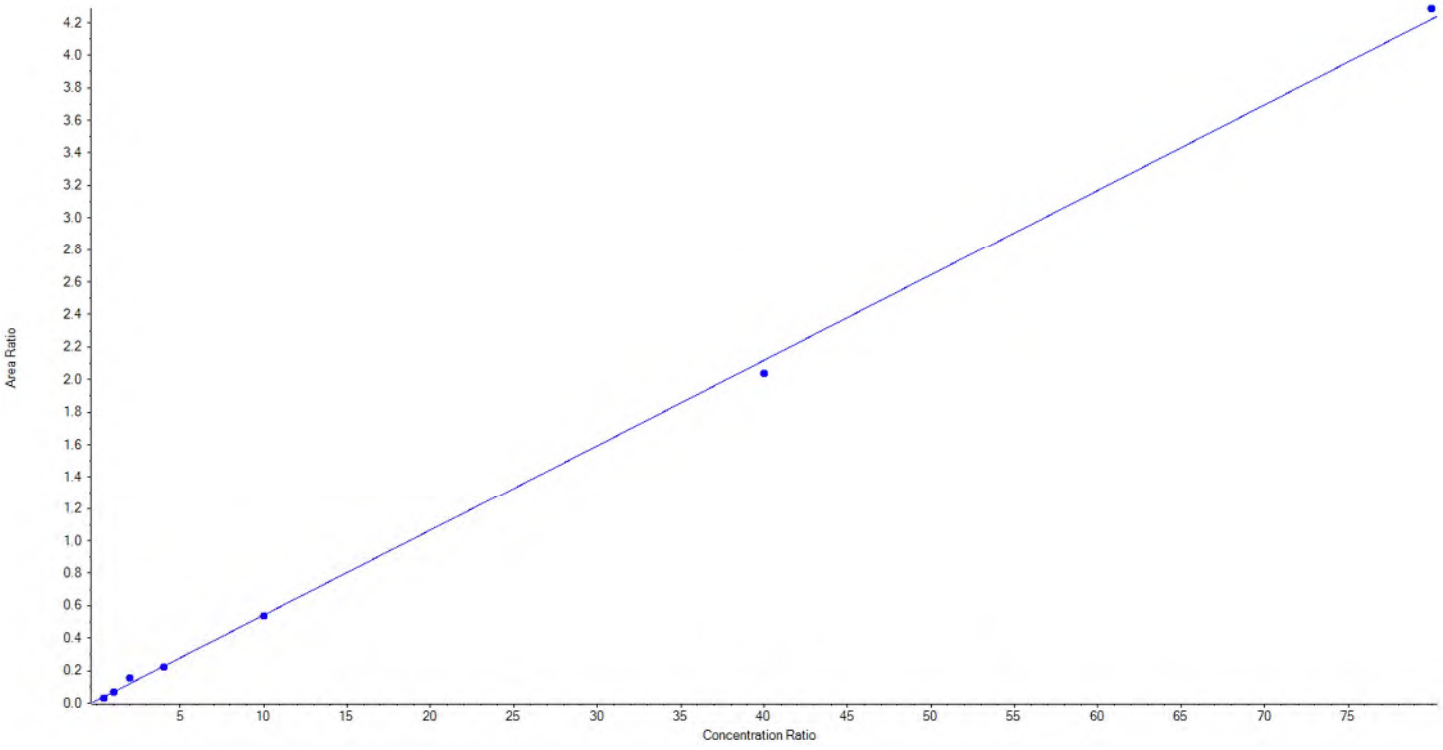
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFUnA_2	**Data File**	09172018.wiff
MRM Transition	563.0 / 269.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C7-PFUnA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.05256 x + 0.01624 (r = 0.99876) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	79.576176	79.6
3	KA87	L2	True	250.00	232.688592	93.1
4	KA88	L3	True	500.00	662.089510	132.4
5	KA89	L4	True	1000.00	981.865681	98.2
6	KA90	L5	True	2500.00	2478.234771	99.1
7	KA91	L6	True	10000.00	9607.359880	96.1
8	KA92	L7	True	20000.00	20308.185390	101.5



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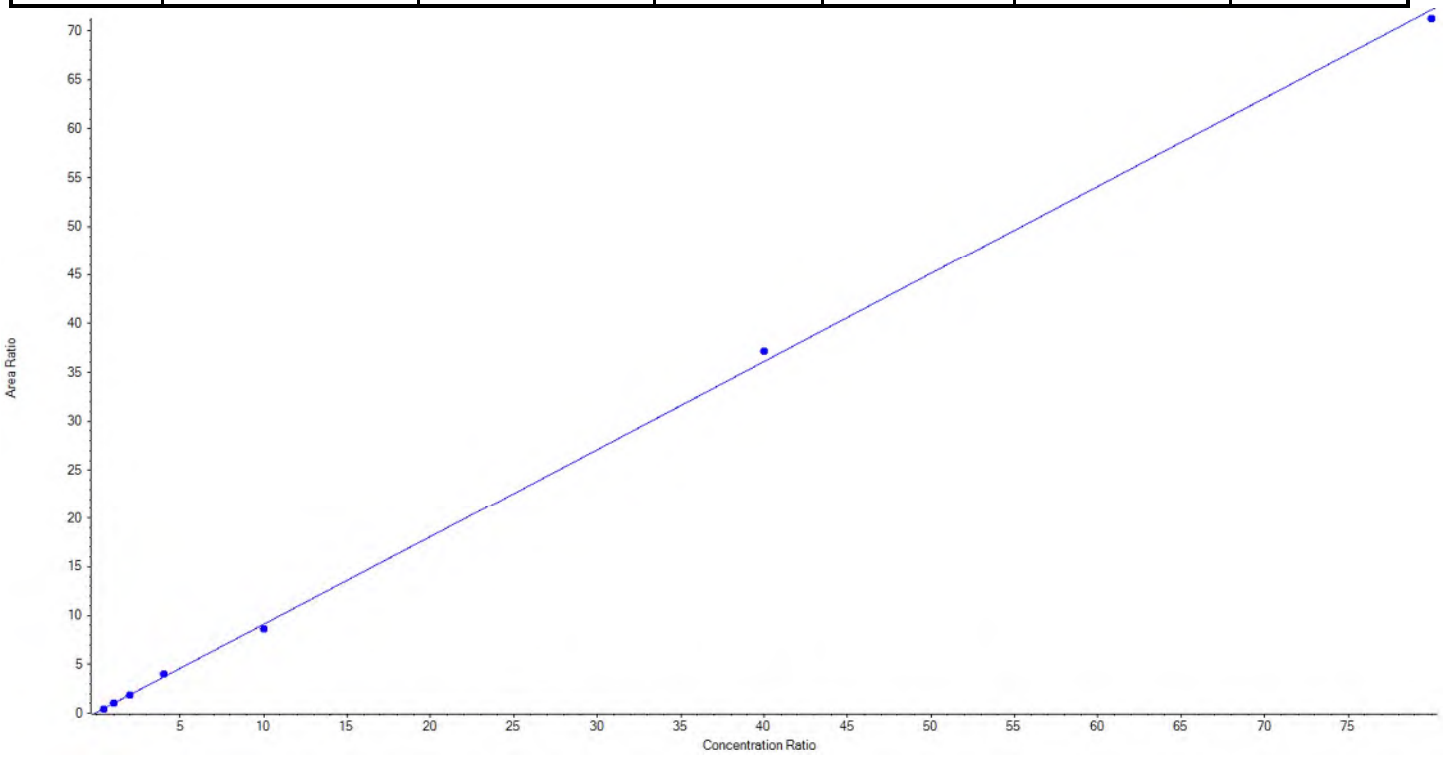
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFDoA_1	**Data File**	09172018.wiff
MRM Transition	613.0 / 569.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFDoA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.90040 x + 0.08961 (r = 0.99955) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	88.128553	88.1
3	KA87	L2	True	250.00	273.764190	109.5
4	KA88	L3	True	500.00	492.124770	98.4
5	KA89	L4	True	1000.00	1073.842486	107.4
6	KA90	L5	True	2500.00	2369.692338	94.8
7	KA91	L6	True	10000.00	10301.327343	103.0
8	KA92	L7	True	20000.00	19751.120321	98.8



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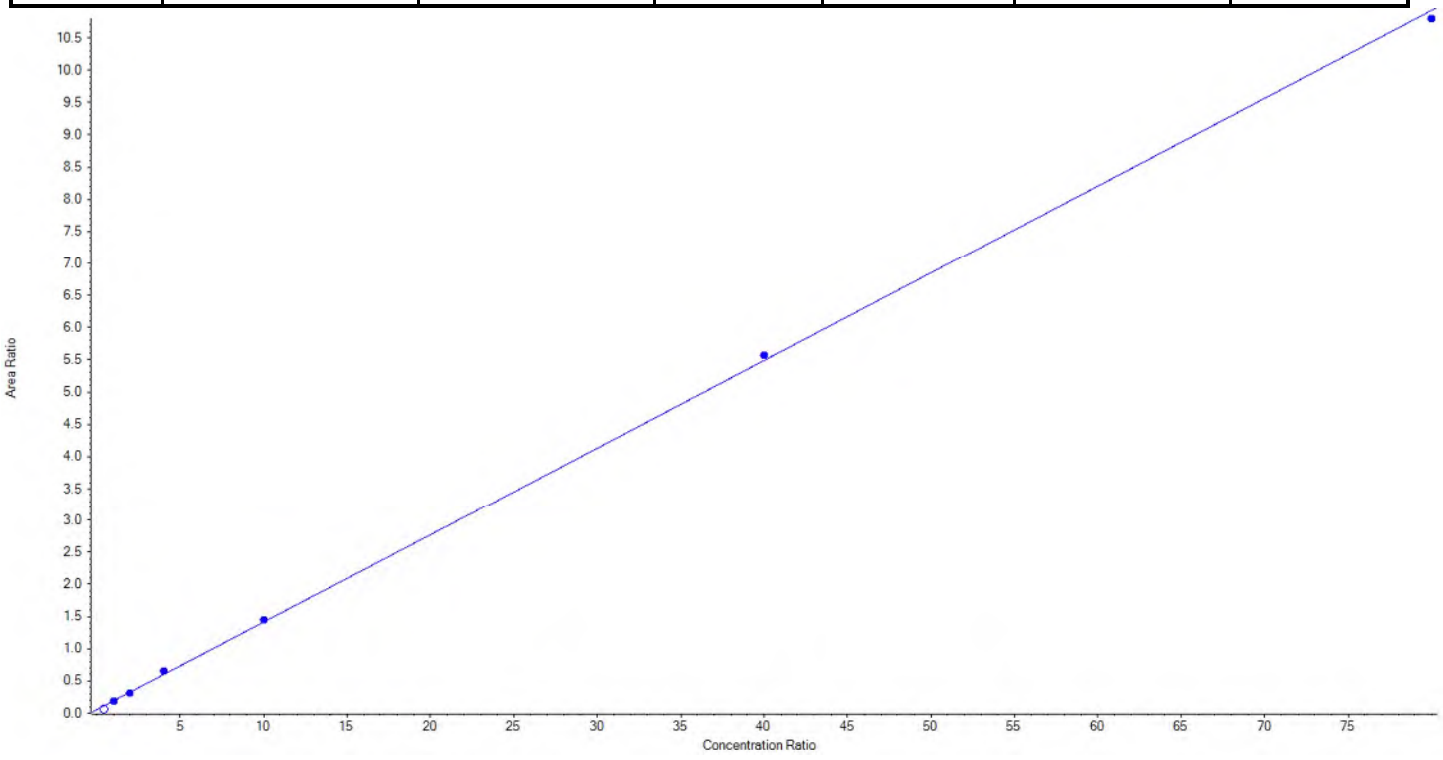
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFDoA_2	**Data File**	09172018.wiff
MRM Transition	613.0 / 319.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFDoA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.13583 x + 0.05473 (r = 0.99972) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	7.034440	7.0
3	KA87	L2	True	250.00	239.702506	95.9
4	KA88	L3	True	500.00	464.229195	92.9
5	KA89	L4	True	1000.00	1088.014716	108.8
6	KA90	L5	True	2500.00	2557.504369	102.3
7	KA91	L6	True	10000.00	10133.753203	101.3
8	KA92	L7	True	20000.00	19766.796011	98.8



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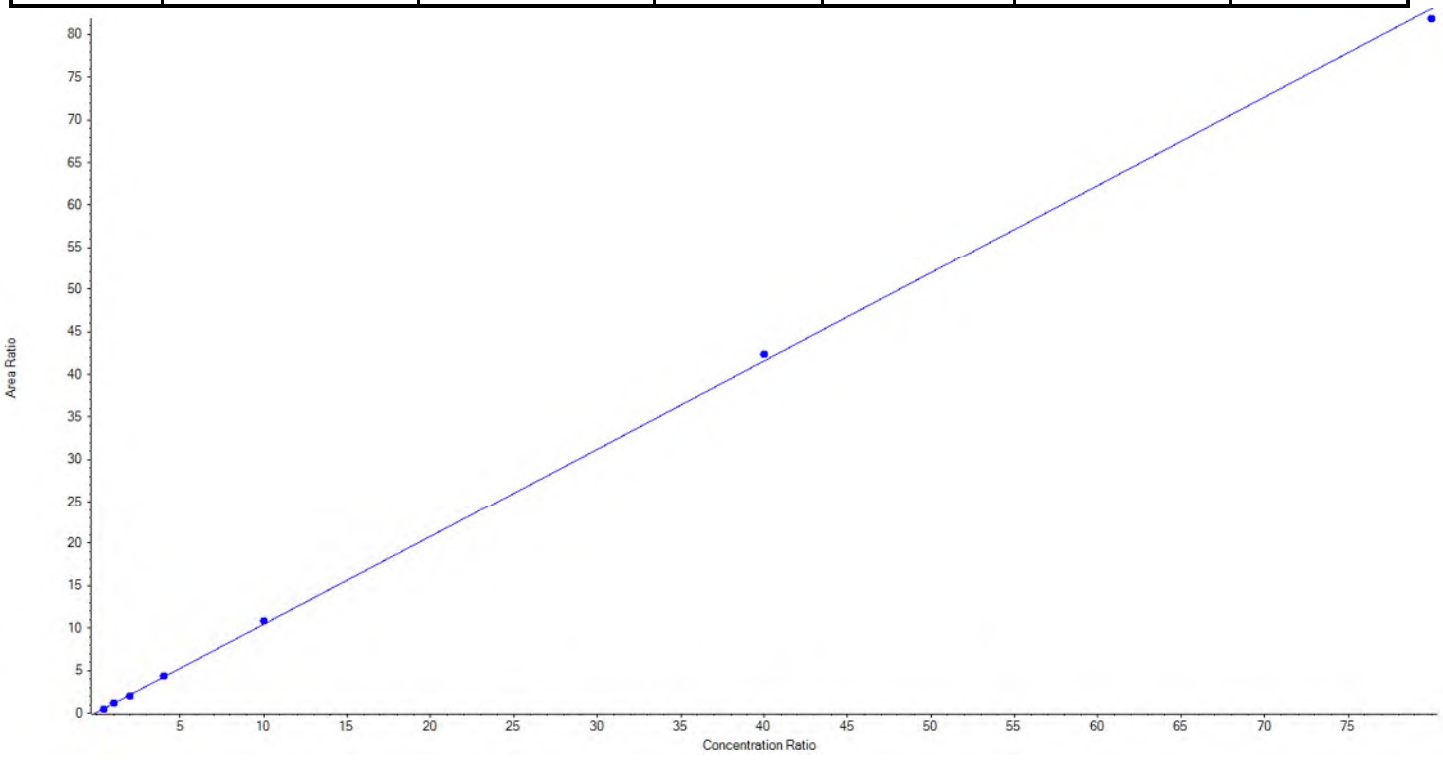
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTrDA_1	**Data File**	09172018.wiff
MRM Transition	663.0 / 619.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.03709 x + 0.08501 (r = 0.99977) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	99.790493	99.8
3	KA87	L2	True	250.00	250.094800	100.0
4	KA88	L3	True	500.00	467.113857	93.4
5	KA89	L4	True	1000.00	1021.949549	102.2
6	KA90	L5	True	2500.00	2600.667405	104.0
7	KA91	L6	True	10000.00	10195.049043	102.0
8	KA92	L7	True	20000.00	19715.334854	98.6



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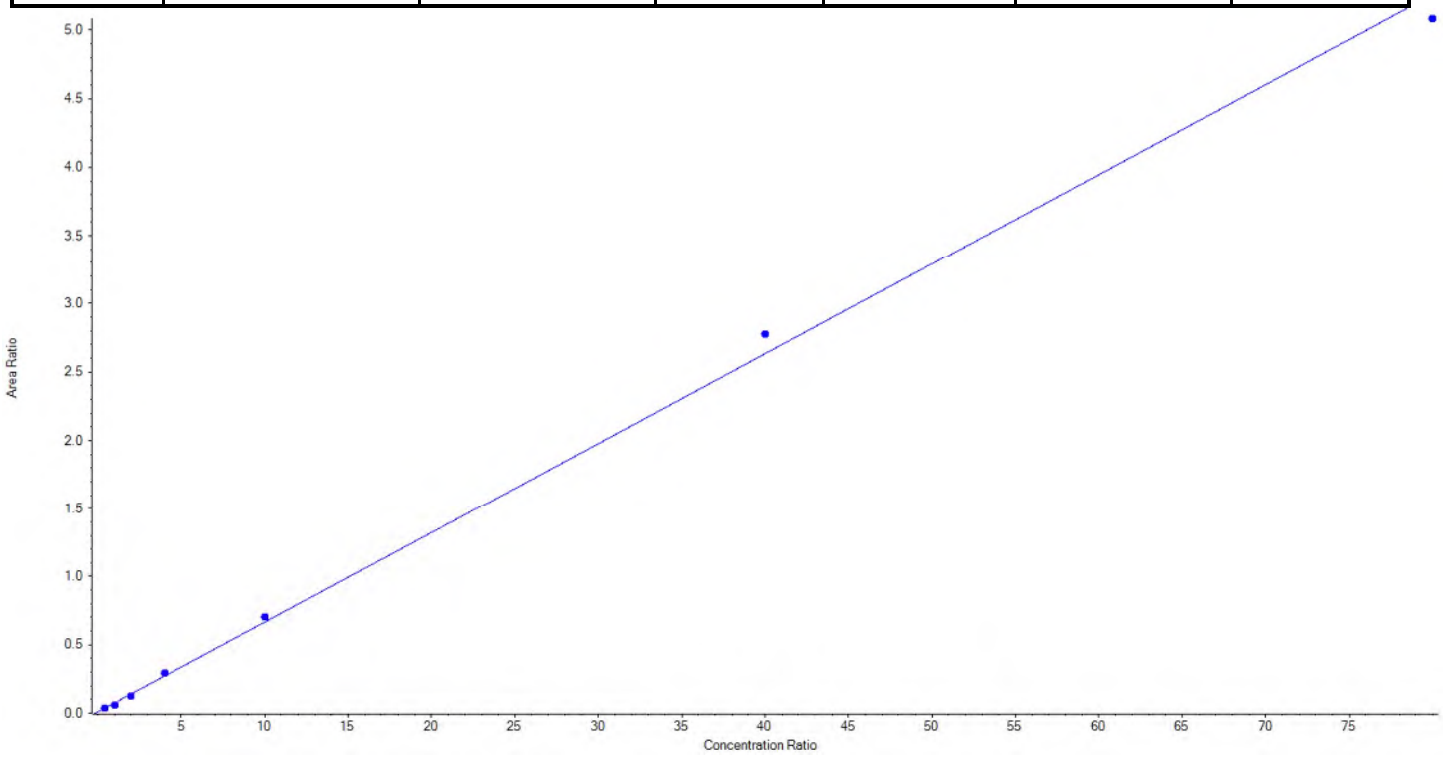
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTrDA_2	**Data File**	09172018.wiff
MRM Transition	663.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.06563 x + 0.00866 (r = 0.99864) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	116.473665	116.5
3	KA87	L2	True	250.00	203.820813	81.5
4	KA88	L3	True	500.00	434.539421	86.9
5	KA89	L4	True	1000.00	1074.636675	107.5
6	KA90	L5	True	2500.00	2635.720549	105.4
7	KA91	L6	True	10000.00	10554.718378	105.6
8	KA92	L7	True	20000.00	19330.090498	96.7



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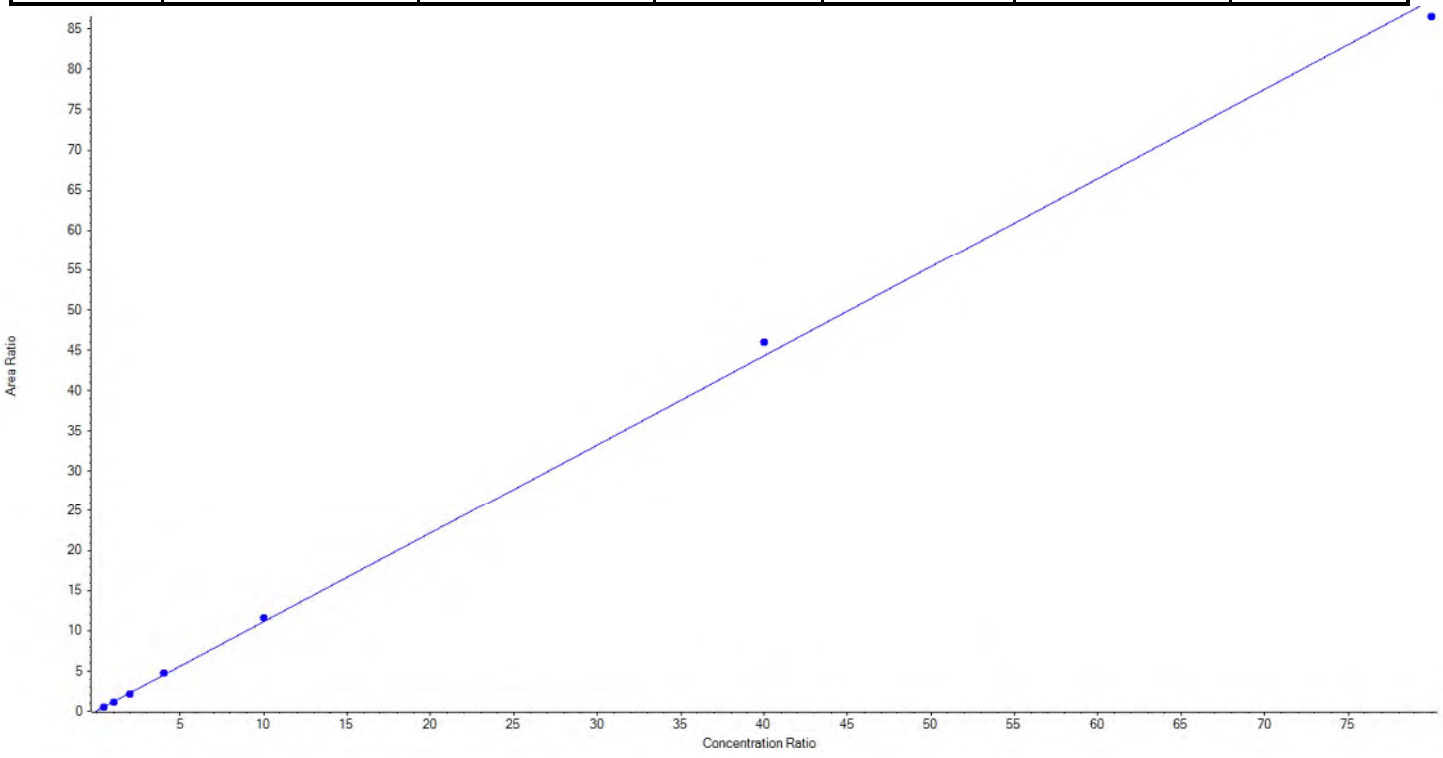
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTeDA_1	**Data File**	09172018.wiff
MRM Transition	713.0 / 669.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.10654 x + 0.05698 (r = 0.99946) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	100.402544	100.4
3	KA87	L2	True	250.00	246.214443	98.5
4	KA88	L3	True	500.00	457.165546	91.4
5	KA89	L4	True	1000.00	1043.554804	104.4
6	KA90	L5	True	2500.00	2599.020799	104.0
7	KA91	L6	True	10000.00	10368.809522	103.7
8	KA92	L7	True	20000.00	19534.832341	97.7



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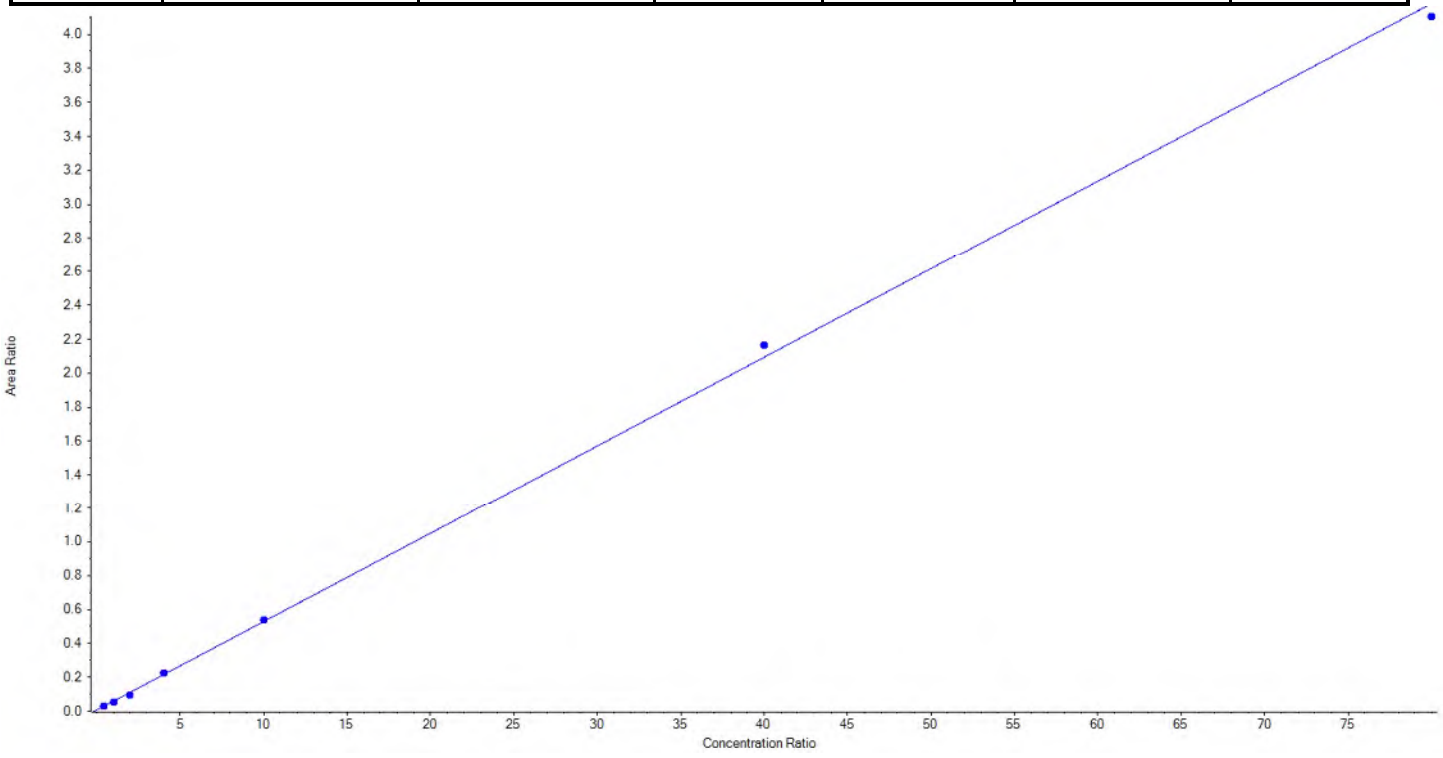
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	PFTeDA_2	**Data File**	09172018.wiff
MRM Transition	713.0 / 169.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	13C2-PFTeDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.05217 x + 0.00647 (r = 0.99939) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	116.090955	116.1
3	KA87	L2	True	250.00	225.543930	90.2
4	KA88	L3	True	500.00	425.923534	85.2
5	KA89	L4	True	1000.00	1049.410678	104.9
6	KA90	L5	True	2500.00	2546.869712	101.9
7	KA91	L6	True	10000.00	10352.020695	103.5
8	KA92	L7	True	20000.00	19634.140495	98.2



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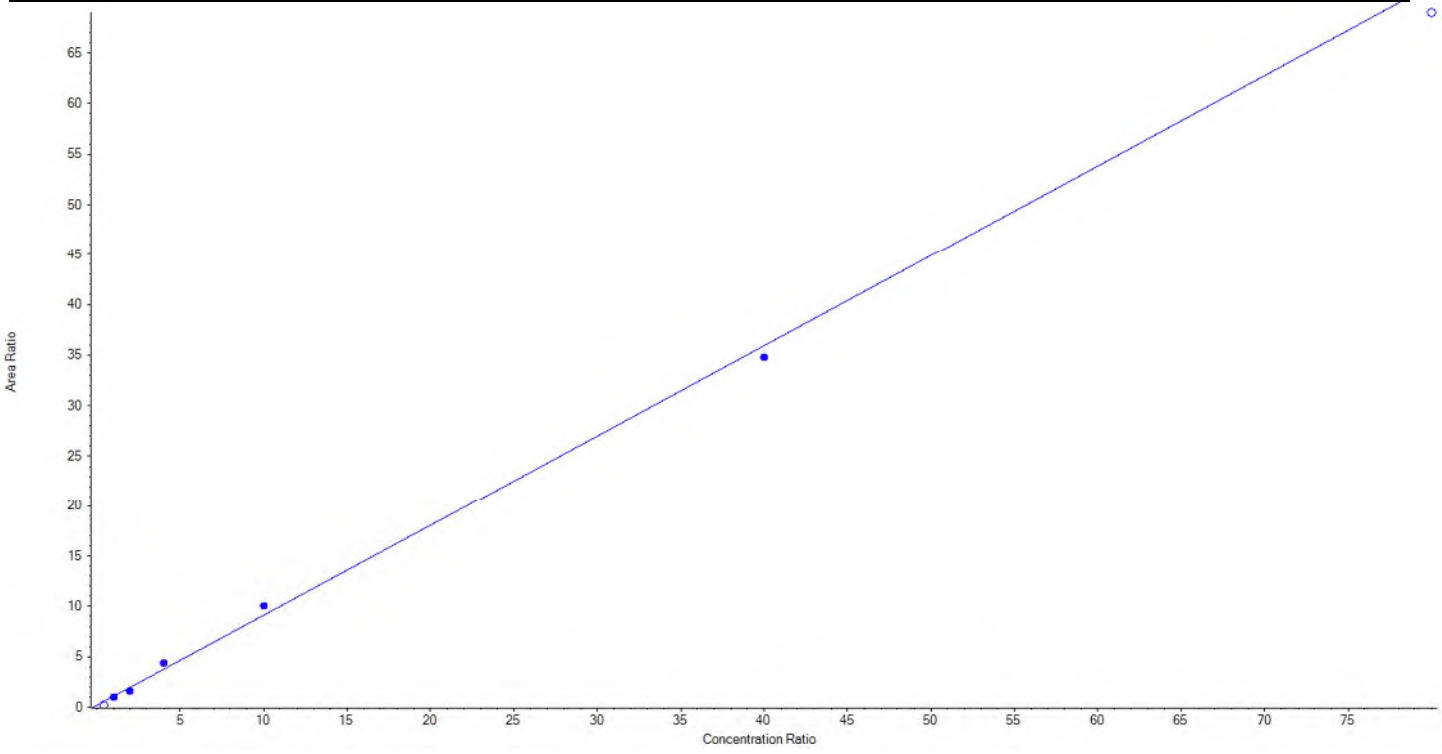
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NMeFOSAA_1	**Data File**	09172018.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.89404 x + 0.17215 (r = 0.99565) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	6.793695	6.8
3	KA87	L2	True	250.00	239.301241	95.7
4	KA88	L3	True	500.00	393.377176	78.7
5	KA89	L4	True	1000.00	1183.519250	118.4
6	KA90	L5	True	2500.00	2763.804001	110.6
7	KA91	L6	True	10000.00	9669.998332	96.7
8	KA92	L7	False	20000.00	19238.393743	96.2



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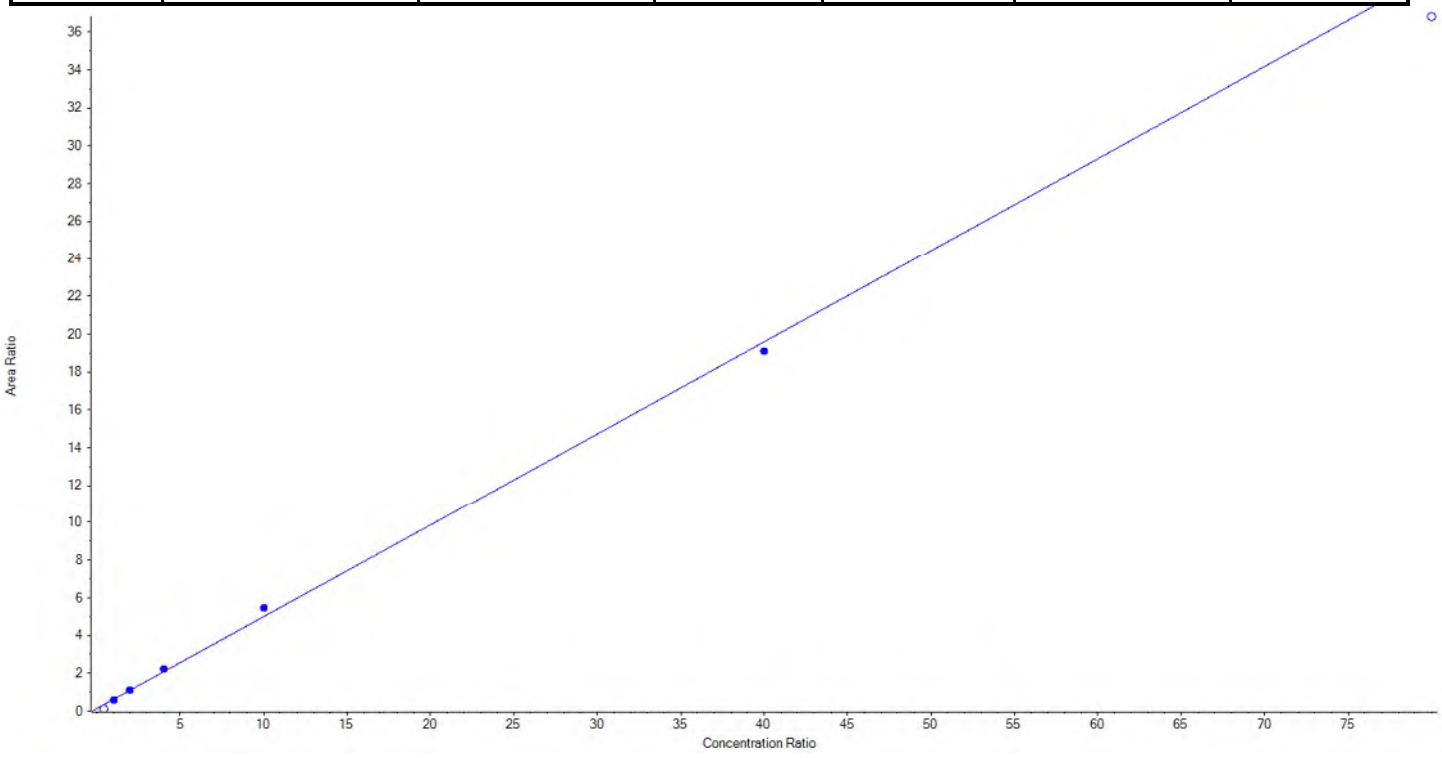
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NMeFOSAA_2	**Data File**	09172018.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.48641 x + 0.13587 (r = 0.99843) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	< 0	N/A
3	KA87	L2	True	250.00	222.372754	89.0
4	KA88	L3	True	500.00	489.969333	98.0
5	KA89	L4	True	1000.00	1065.570036	106.6
6	KA90	L5	True	2500.00	2725.971649	109.0
7	KA91	L6	True	10000.00	9746.116228	97.5
8	KA92	L7	False	20000.00	18850.385028	94.3



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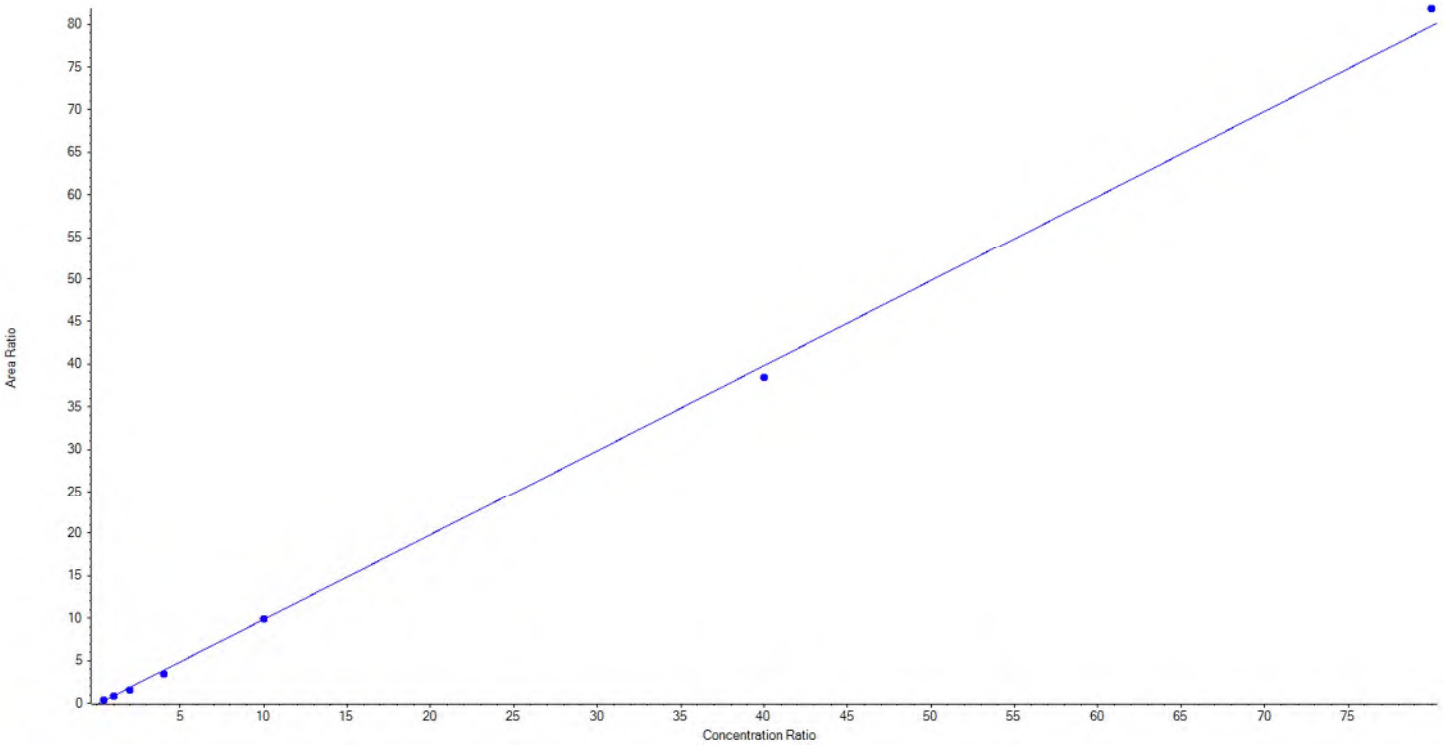
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NEtFOSAA_1	**Data File**	09172018.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d5-EtFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.99925 x + -0.14634 (r = 0.99910) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	100.00	126.817690	126.8
3	KA87	L2	True	250.00	251.047435	100.4
4	KA88	L3	True	500.00	422.904833	84.6
5	KA89	L4	True	1000.00	891.010106	89.1
6	KA90	L5	True	2500.00	2501.814267	100.1
7	KA91	L6	True	10000.00	9645.351972	96.5
8	KA92	L7	True	20000.00	20511.053697	102.6



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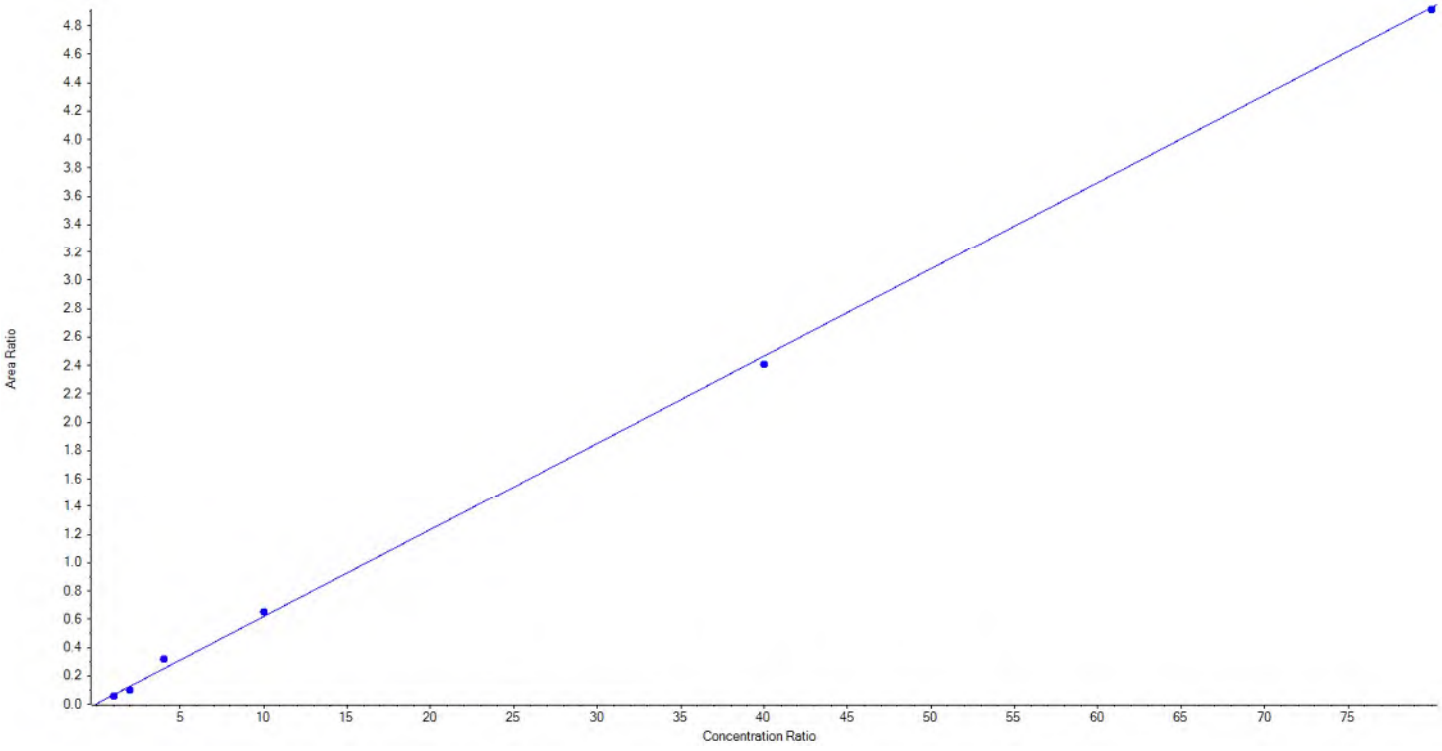
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:22:35 PM

Analyte Name	NEtFOSAA_2	**Data File**	09172018.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0559_18-0560_BASE
Internal Standard	d5-EtFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.06155 x + 0.00341 (r = 0.99795) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	False	100.00	N/A	N/A
3	KA87	L2	True	250.00	227.466765	91.0
4	KA88	L3	True	500.00	388.255864	77.7
5	KA89	L4	True	1000.00	1285.149703	128.5
6	KA90	L5	True	2500.00	2635.702419	105.4
7	KA91	L6	True	10000.00	9770.385587	97.7
8	KA92	L7	True	20000.00	19943.039662	99.7



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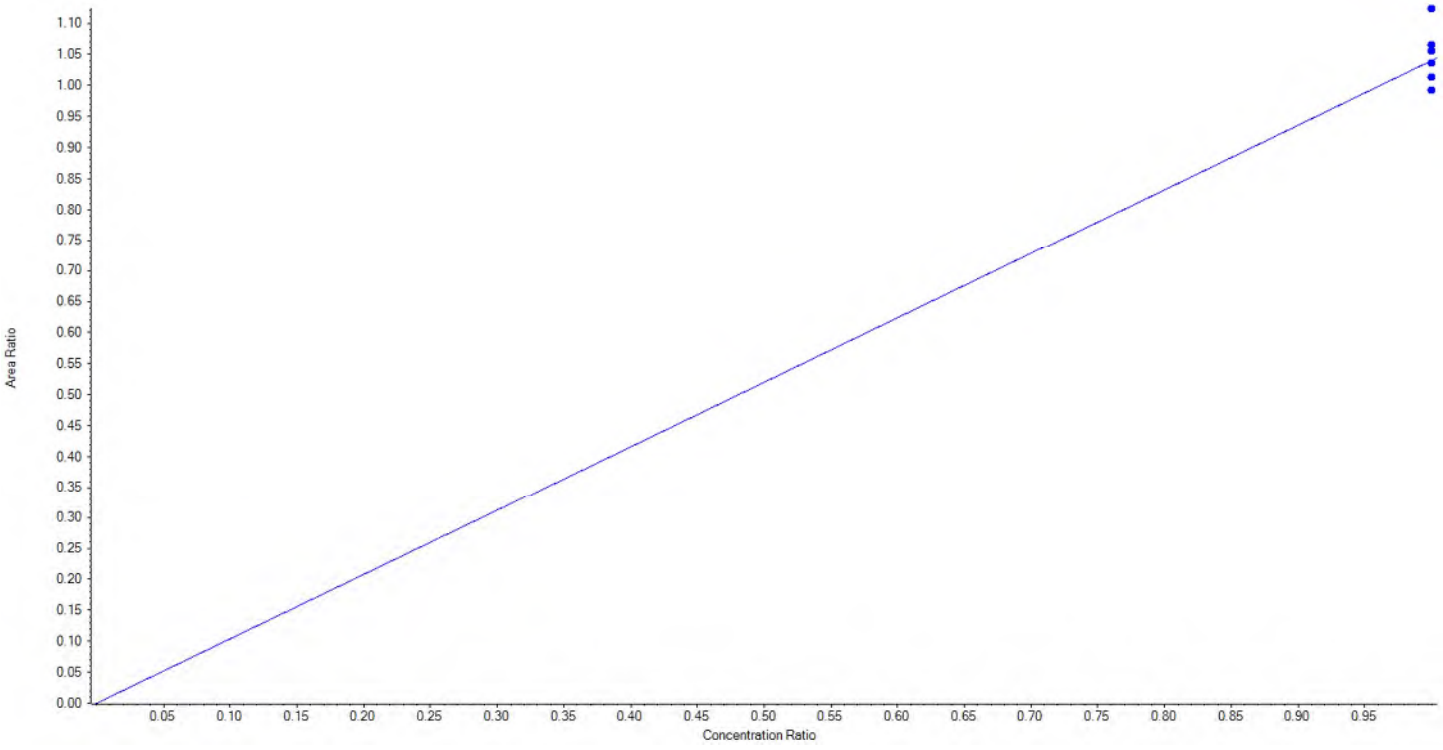
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C2-PFDoA	**Data File**	09172018.wiff
MRM Transition	615.0 / 570.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.03997 x (std. dev. = 0.04677) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	249.086588	99.6
3	KA87	L2	True	250.00	238.645940	95.5
4	KA88	L3	True	250.00	238.394426	95.4
5	KA89	L4	True	250.00	243.830078	97.5
6	KA90	L5	True	250.00	253.934265	101.6
7	KA91	L6	True	250.00	270.113460	108.1
8	KA92	L7	True	250.00	255.995243	102.4



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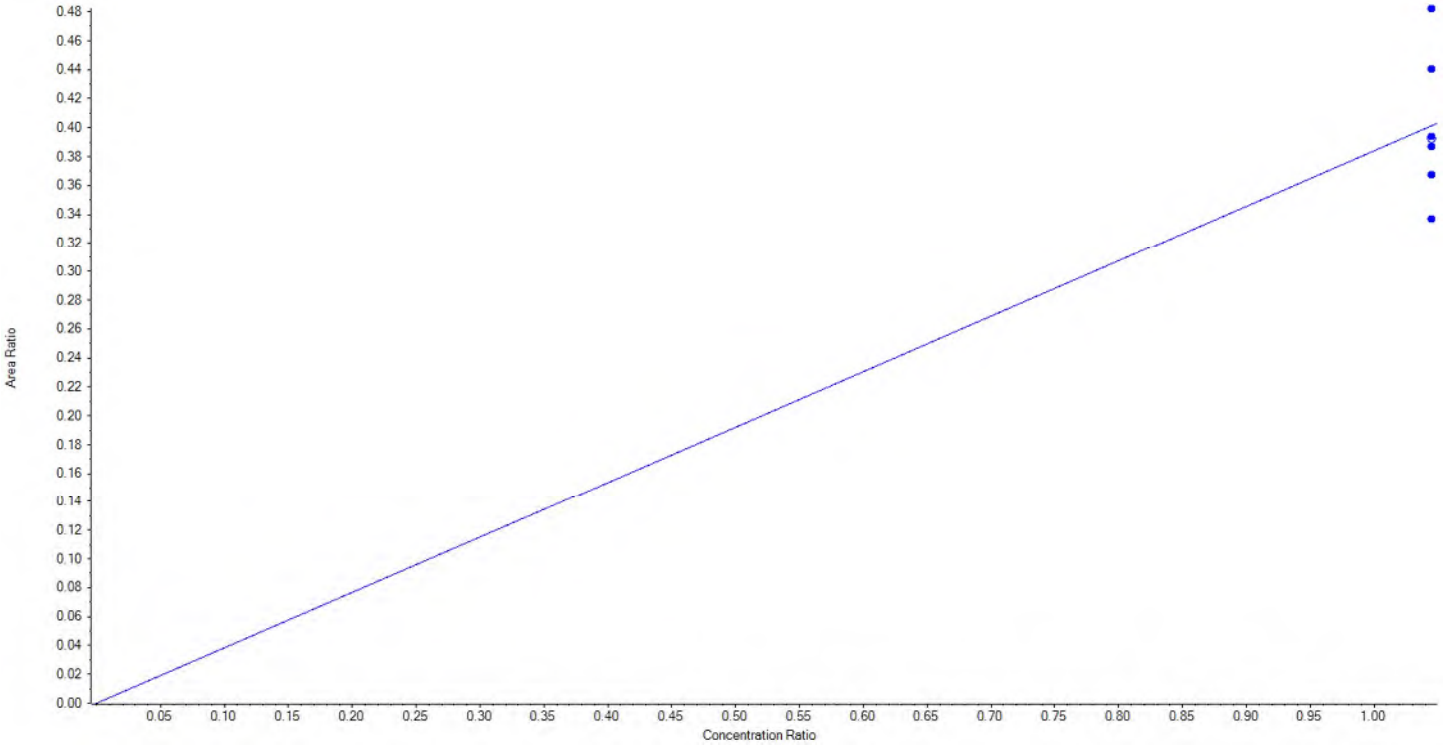
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	d3-MeFOSAA	**Data File**	09172018.wiff
MRM Transition	573.0 / 419.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.38400 x (std. dev. = 0.05004) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	300.400671	120.2
3	KA87	L2	True	250.00	274.452400	109.8
4	KA88	L3	True	250.00	228.785668	91.5
5	KA89	L4	True	250.00	245.527562	98.2
6	KA90	L5	True	250.00	209.762632	83.9
7	KA91	L6	True	250.00	241.071066	96.4
8	KA92	L7	False	250.00	244.509991	97.8



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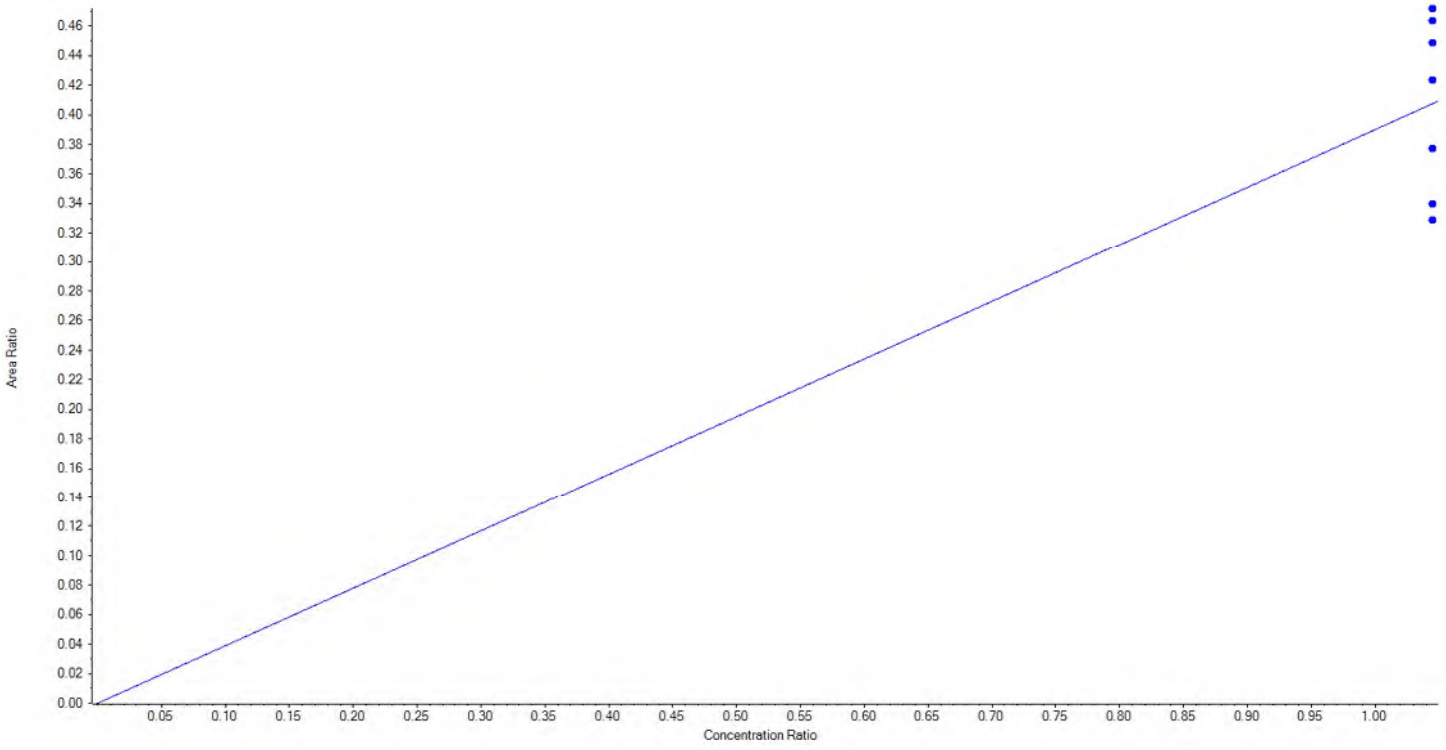
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	d5-EtFOSAA	**Data File**	09172018.wiff
MRM Transition	589.0 / 419.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.38999 x (std. dev. = 0.05649) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	275.037347	110.0
3	KA87	L2	True	250.00	284.389280	113.8
4	KA88	L3	True	250.00	259.734770	103.9
5	KA89	L4	True	250.00	289.399919	115.8
6	KA90	L5	True	250.00	208.474609	83.4
7	KA91	L6	True	250.00	231.311069	92.5
8	KA92	L7	True	250.00	201.653006	80.7



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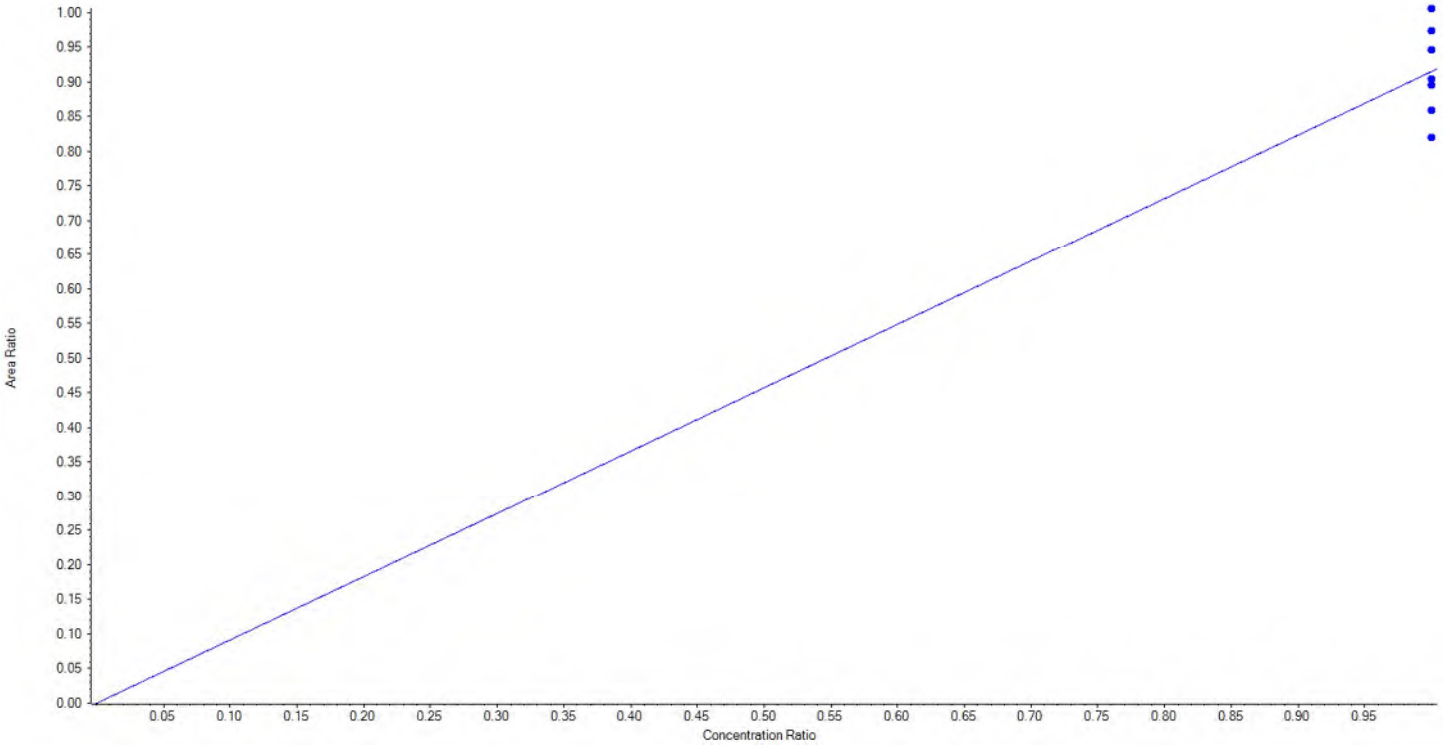
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C5-PFHxA	**Data File**	09172018.wiff
MRM Transition	318.0 / 273.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.91513 x (std. dev. = 0.06468) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	258.596536	103.4
3	KA87	L2	True	250.00	224.229706	89.7
4	KA88	L3	True	250.00	265.935039	106.4
5	KA89	L4	True	250.00	244.637046	97.9
6	KA90	L5	True	250.00	274.765057	109.9
7	KA91	L6	True	250.00	247.025554	98.8
8	KA92	L7	True	250.00	234.811063	93.9



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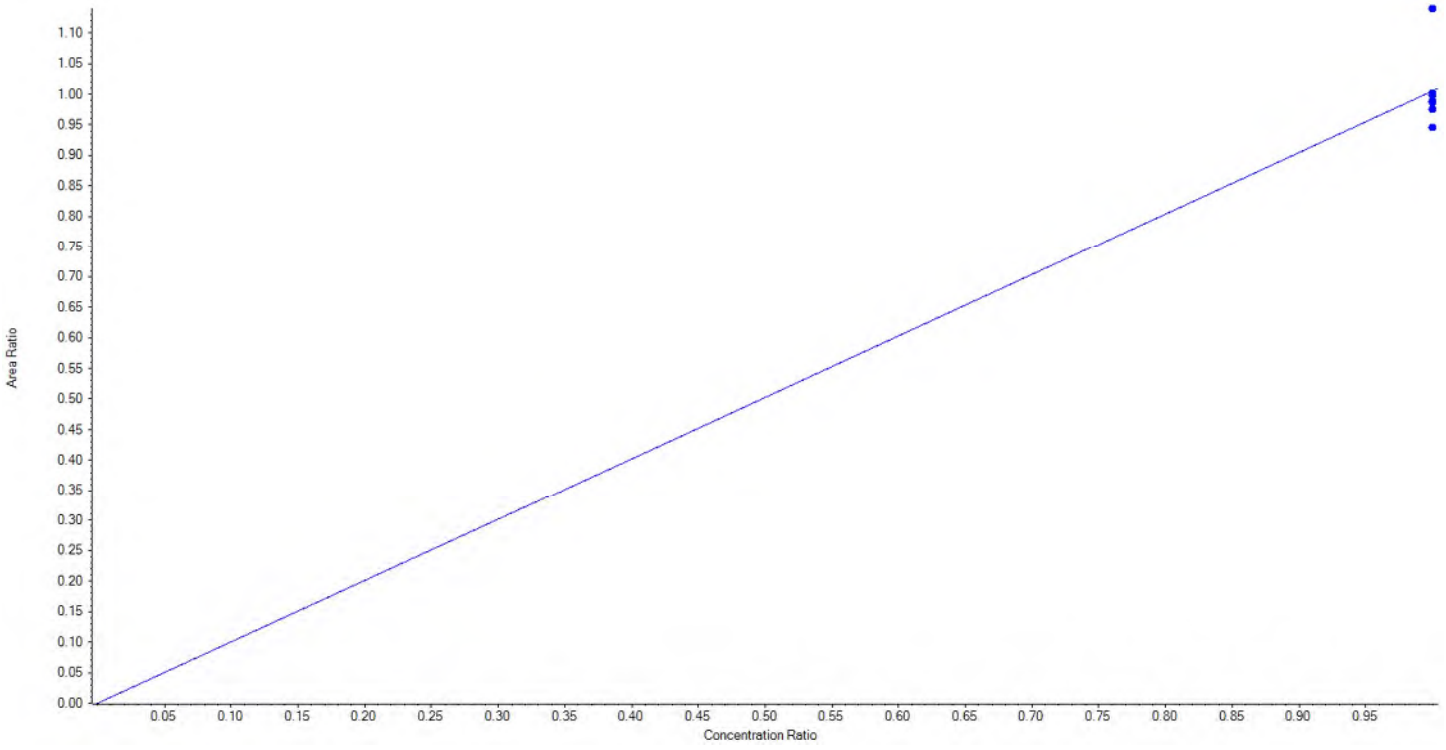
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C4-PFHpA	**Data File**	09172018.wiff
MRM Transition	367.0 / 322.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.00523 x (std. dev. = 0.06210) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	248.258573	99.3
3	KA87	L2	True	250.00	249.175721	99.7
4	KA88	L3	True	250.00	283.398669	113.4
5	KA89	L4	True	250.00	242.518576	97.0
6	KA90	L5	True	250.00	246.012403	98.4
7	KA91	L6	True	250.00	245.447951	98.2
8	KA92	L7	True	250.00	235.188108	94.1



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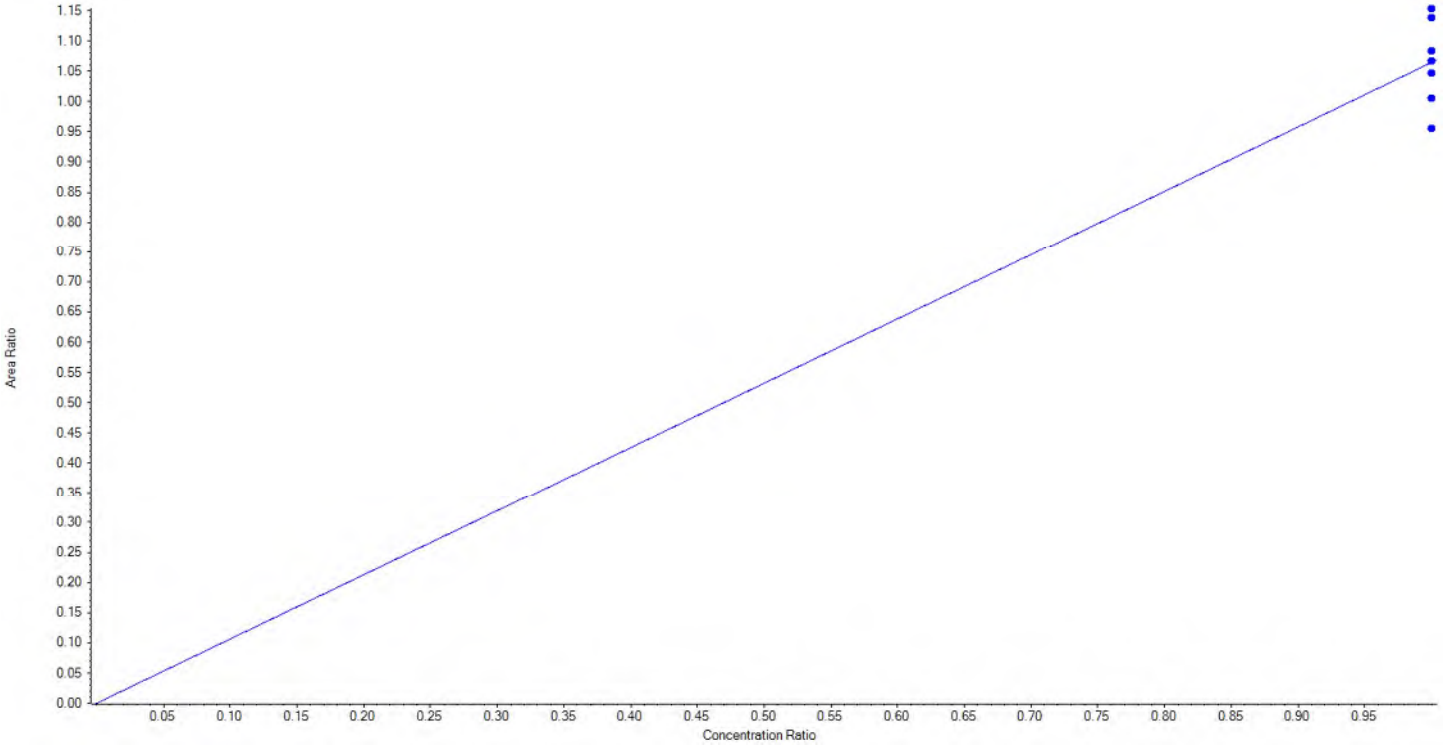
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C8-PFOA	**Data File**	09172018.wiff
MRM Transition	421.0 / 376.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.06431 x (std. dev. = 0.06971) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	245.870251	98.4
3	KA87	L2	True	250.00	267.208605	106.9
4	KA88	L3	True	250.00	250.678923	100.3
5	KA89	L4	True	250.00	254.619374	101.9
6	KA90	L5	True	250.00	270.900302	108.4
7	KA91	L6	True	250.00	236.095879	94.4
8	KA92	L7	True	250.00	224.626665	89.9



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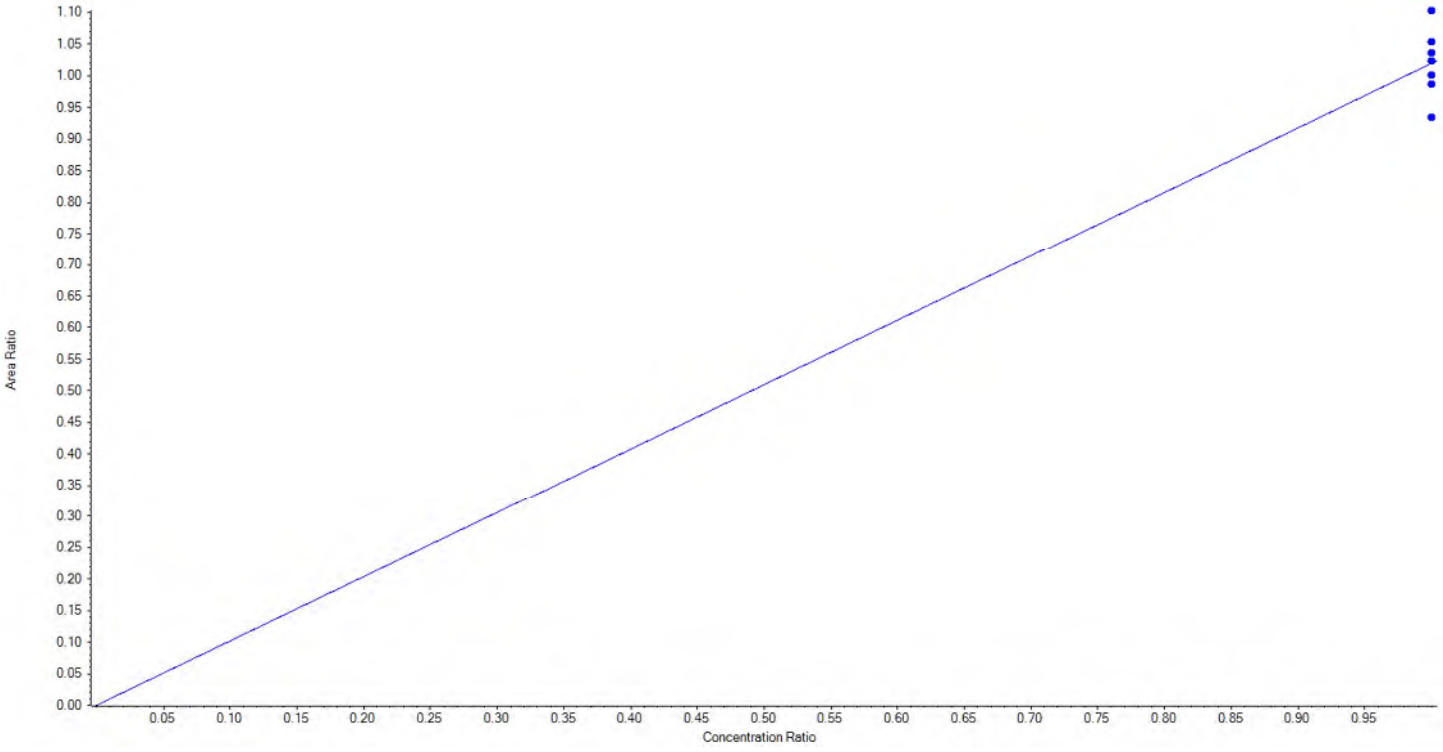
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C9-PFNA	**Data File**	09172018.wiff
MRM Transition	472.0 / 427.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.01962 x (std. dev. = 0.05344) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	241.798020	96.7
3	KA87	L2	True	250.00	258.175435	103.3
4	KA88	L3	True	250.00	270.414804	108.2
5	KA89	L4	True	250.00	253.992581	101.6
6	KA90	L5	True	250.00	251.046463	100.4
7	KA91	L6	True	250.00	245.616386	98.3
8	KA92	L7	True	250.00	228.956311	91.6



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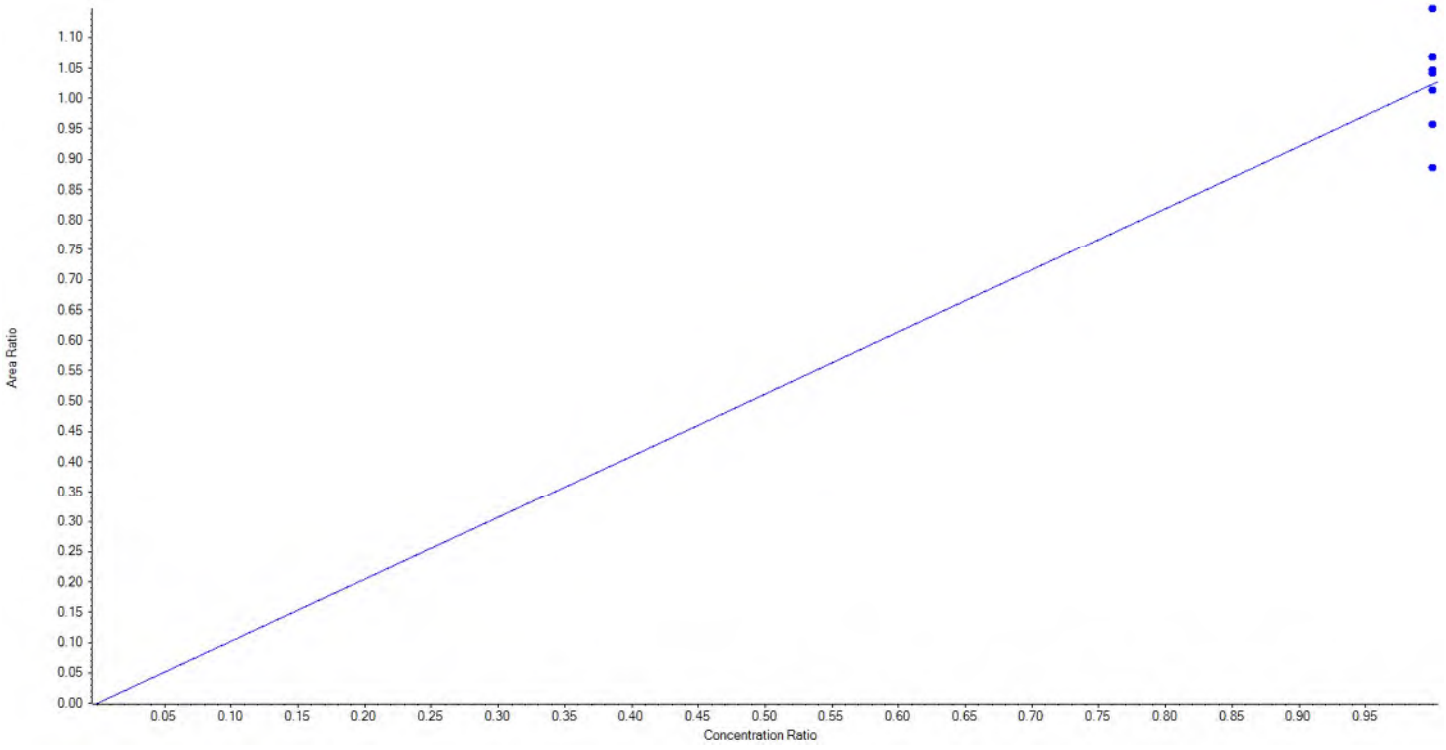
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C6-PFDA	**Data File**	09172018.wiff
MRM Transition	519.0 / 474.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.02343 x (std. dev. = 0.08321) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	247.777319	99.1
3	KA87	L2	True	250.00	261.125158	104.5
4	KA88	L3	True	250.00	233.826304	93.5
5	KA89	L4	True	250.00	280.316761	112.1
6	KA90	L5	True	250.00	254.616538	101.9
7	KA91	L6	True	250.00	255.736225	102.3
8	KA92	L7	True	250.00	216.601695	86.6



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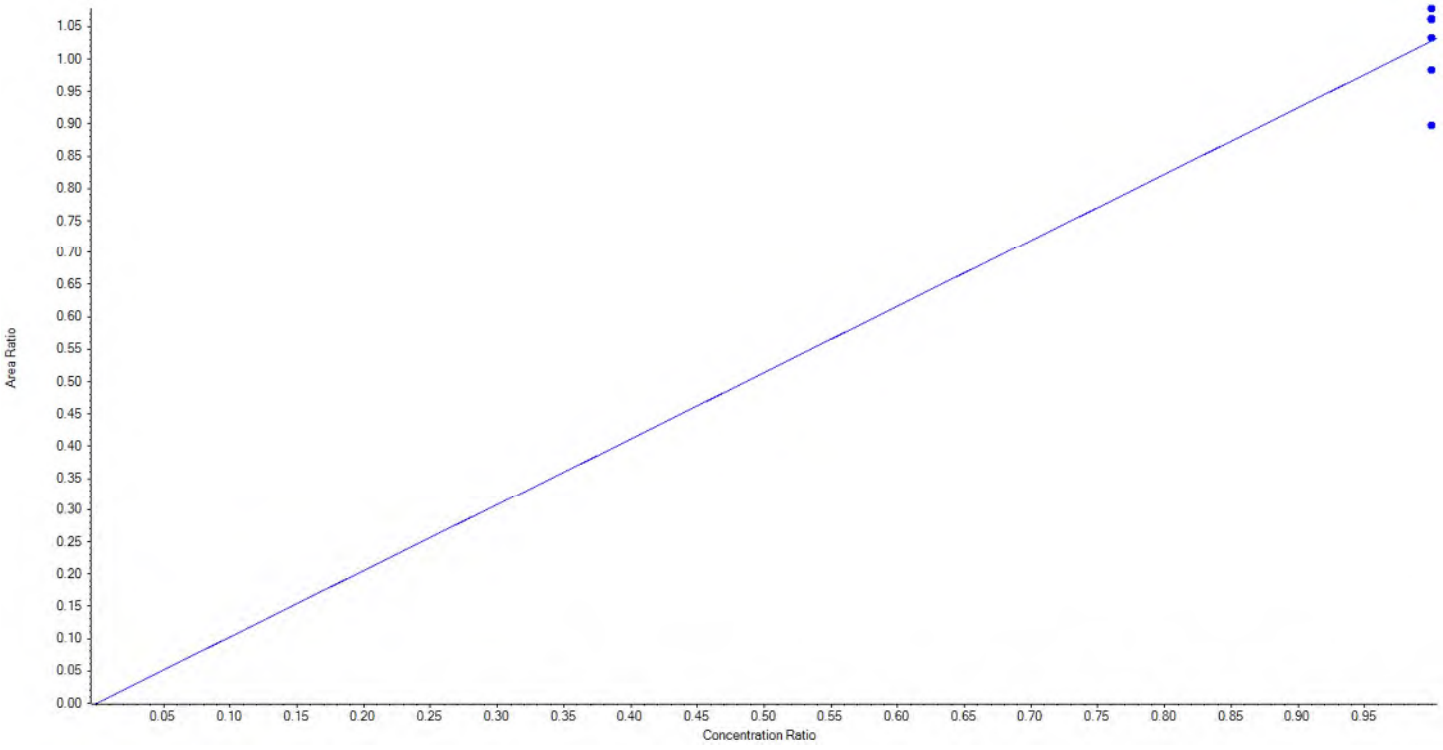
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C7-PFUnA	**Data File**	09172018.wiff
MRM Transition	570.0 / 525.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.02725 x (std. dev. = 0.06601) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	258.185111	103.3
3	KA87	L2	True	250.00	262.221787	104.9
4	KA88	L3	True	250.00	239.003232	95.6
5	KA89	L4	True	250.00	262.150729	104.9
6	KA90	L5	True	250.00	251.397262	100.6
7	KA91	L6	True	250.00	258.498069	103.4
8	KA92	L7	True	250.00	218.543809	87.4



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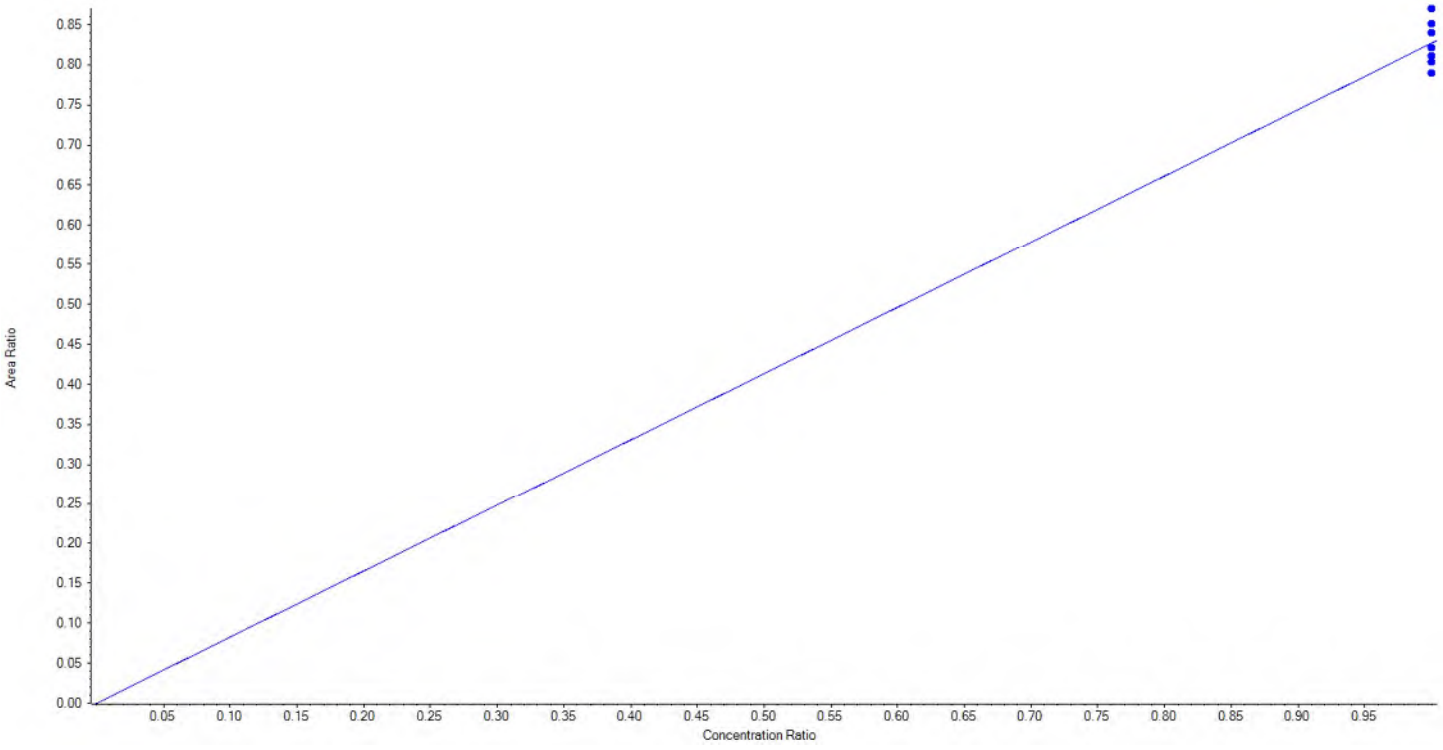
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C2-PFTeDA	**Data File**	09172018.wiff
MRM Transition	715.0 / 670.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C2-PFDA	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.82679 x (std. dev. = 0.02827) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	250.00	248.382765	99.4
3	KA87	L2	True	250.00	263.062594	105.2
4	KA88	L3	True	250.00	243.100760	97.2
5	KA89	L4	True	250.00	253.842582	101.5
6	KA90	L5	True	250.00	238.899644	95.6
7	KA91	L6	True	250.00	257.517382	103.0
8	KA92	L7	True	250.00	245.194272	98.1



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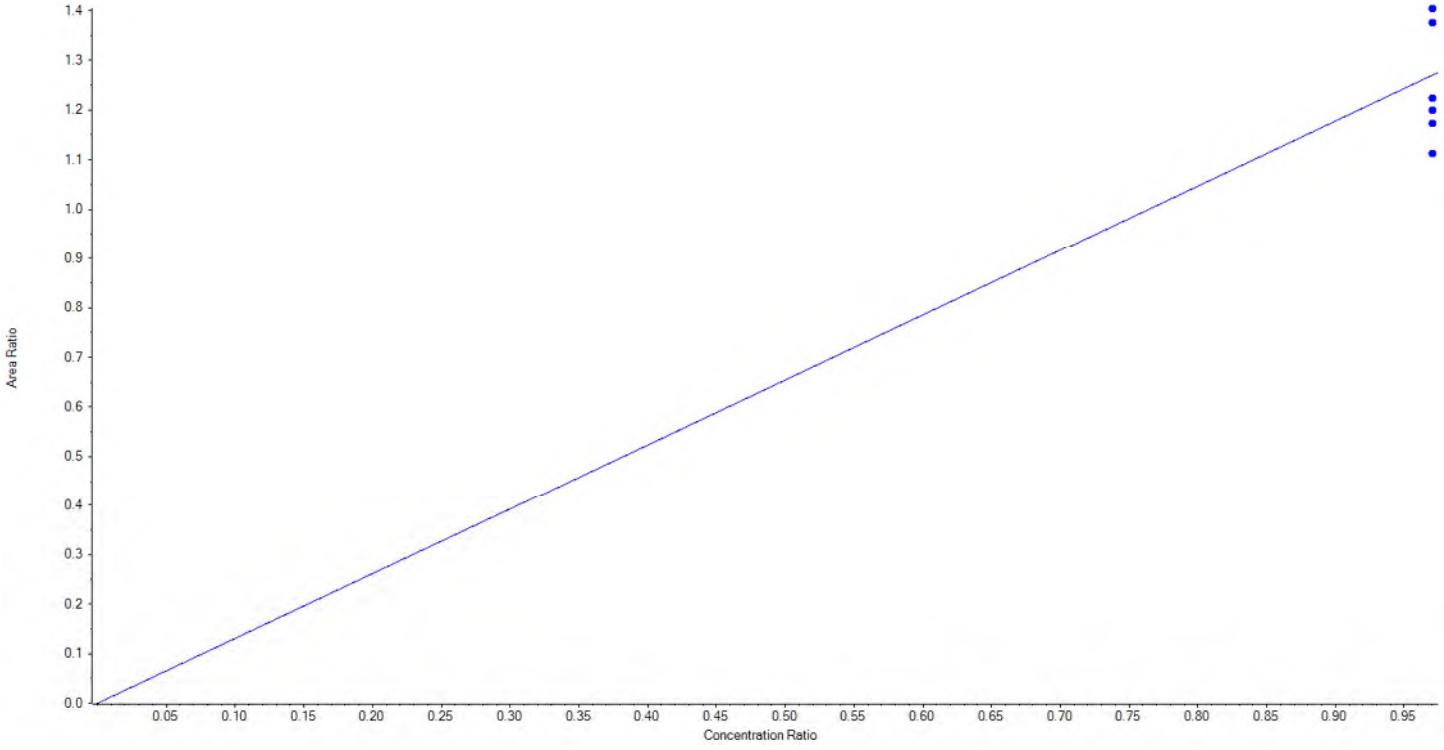
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C3-PFBS	**Data File**	09172018.wiff
MRM Transition	302.0 / 99.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.30856 x (std. dev. = 0.12475) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	232.25	251.432640	108.3
3	KA87	L2	True	232.25	256.671394	110.5
4	KA88	L3	True	232.25	203.536121	87.6
5	KA89	L4	True	232.25	256.647766	110.5
6	KA90	L5	True	232.25	223.775177	96.4
7	KA91	L6	True	232.25	214.520986	92.4
8	KA92	L7	True	232.25	219.165917	94.4



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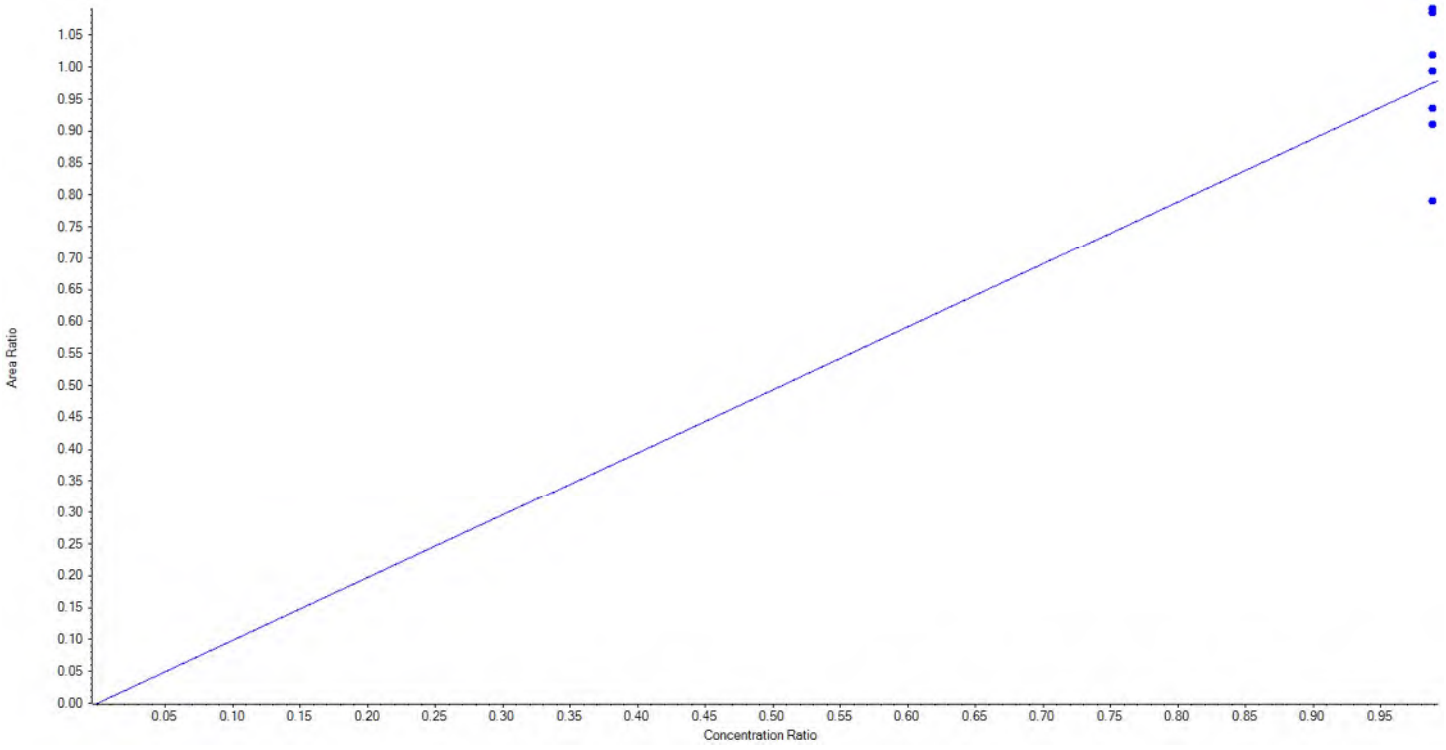
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C3-PFHxS	**Data File**	09172018.wiff
MRM Transition	402.0 / 99.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 0.98657 x (std. dev. = 0.10718) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	236.50	263.027392	111.2
3	KA87	L2	True	236.50	240.956459	101.9
4	KA88	L3	True	236.50	220.837181	93.4
5	KA89	L4	True	236.50	264.688242	111.9
6	KA90	L5	True	236.50	226.762154	95.9
7	KA91	L6	True	236.50	247.296909	104.6
8	KA92	L7	True	236.50	191.931664	81.2



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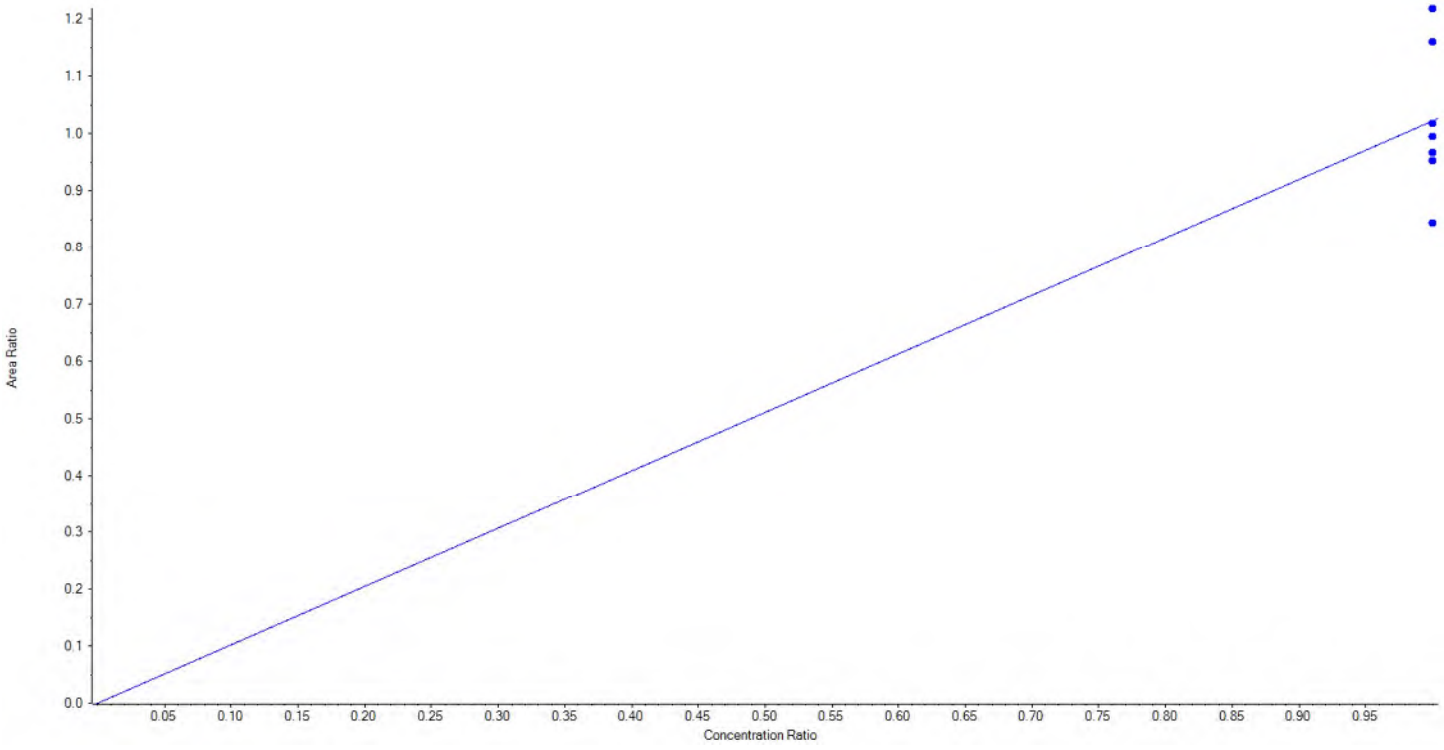
Calibration Summary Report

Created with Analyst Reporter
Printed: 18/09/2018 3:23:00 PM

Analyte Name	13C8-PFOS	**Data File**	09172018.wiff
MRM Transition	507.0 / 99.0	**Result Table**	18-0559_18-0560_SIS
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	9/17/2018 6:08:24 PM	**Acquisition Method**	5-0369.dam

Regression Equation: y = 1.02196 x (std. dev. = 0.12752) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	KA86	L1	True	239.25	271.446975	113.5
3	KA87	L2	True	239.25	233.090965	97.4
4	KA88	L3	True	239.25	222.951796	93.2
5	KA89	L4	True	239.25	285.097240	119.2
6	KA90	L5	True	239.25	238.217338	99.6
7	KA91	L6	True	239.25	226.394998	94.6
8	KA92	L7	True	239.25	197.550687	82.6



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Summary Ion Ratio Report

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Printed: 18/09/2018 3:27:13 PM

Sample Name	KA86	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:19:17	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.360	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.060	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.27	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.65	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.04	PFNA			
PFNA_2	463.0 / 219.0	3.04	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.250	0.190	ü
PFDA_1	513.0 / 469.0	3.39	PFDA			
PFDA_2	513.0 / 219.0	3.39	PFDA	0.090	0.056	
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.080	0.063	ü
PFDoA_1	613.0 / 569.0	3.99	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.140	0.161	ü
PFTrDA_1	663.0 / 619.0	4.23	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.23	PFTrDA	0.080	0.065	ü
PFTeDA_1	713.0 / 669.0	4.45	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.45	PFTeDA	0.060	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.54	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.640	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.70	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	

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Summary Ion Ratio Report

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Sample Name	KA87	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:30:11	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.280	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.320	0.290	ü
PFOA_1	413.0 / 369.0	2.65	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.340	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.200	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.060	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.170	0.161	ü
PFTrDA_1	663.0 / 619.0	4.23	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.54	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	NMeFOSAA	0.550	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.70	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA88	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:41:03	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.270	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.060	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.23	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.65	PFOA			
PFOA_2	413.0 / 169.0	2.65	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.300	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.160	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.060	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.080	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.44	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.54	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	NMeFOSAA	0.690	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.70	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.060	0.069	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	KA89	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T18:51:56	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.060	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.65	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.290	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.500	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.090	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA90	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:02:47	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.320	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.170	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.540	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA91	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:13:39	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.040	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.150	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.550	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.060	0.069	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	KA92	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:24:30	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.300	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.25	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.170	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.040	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.150	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.530	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.060	0.069	ü

QC Summary Report

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.54	1116.333150	1010.00	110.53
PFBS_2	298.9 / 99.0	1.53	1111.905753	1010.00	110.09
PFHxA_1	313.0 / 269.0	1.85	971.237452	1010.00	96.16
PFHxA_2	313.0 / 119.0	1.85	1014.998847	1010.00	100.49
PFHpA_1	363.0 / 319.0	2.24	885.762834	1000.00	88.58
PFHpA_2	363.0 / 169.0	2.25	823.742767	1000.00	82.37
PFHxS_1	399.0 / 80.0	2.27	893.448263	1010.00	88.46
PFHxS_2	399.0 / 99.0	2.27	894.022753	1010.00	88.52
PFOA_1	413.0 / 369.0	2.64	904.476779	1000.00	90.45
PFOA_2	413.0 / 169.0	2.64	821.562878	1000.00	82.16
PFNA_1	463.0 / 419.0	3.03	875.909235	1000.00	87.59
PFNA_2	463.0 / 219.0	3.03	890.057205	1000.00	89.01
PFOS_1	499.0 / 80.0	3.03	915.195881	1000.00	91.52
PFOS_2	499.0 / 99.0	3.03	887.163253	1000.00	88.72
PFDA_1	513.0 / 469.0	3.38	1017.457860	1000.00	101.75
PFDA_2	513.0 / 219.0	3.38	972.619130	1000.00	97.26
PFUnA_1	563.0 / 519.0	3.69	1010.148911	1000.00	101.01
PFUnA_2	563.0 / 269.0	3.69	1008.854852	1000.00	100.89
PFDoA_1	613.0 / 569.0	3.98	1017.301356	1000.00	101.73
PFDoA_2	613.0 / 319.0	3.97	1024.352918	1000.00	102.44
PFTrDA_1	663.0 / 619.0	4.22	1127.958999	1000.00	112.80
PFTrDA_2	663.0 / 169.0	4.22	1067.801351	1000.00	106.78
PFTeDA_1	713.0 / 669.0	4.43	1082.338578	1000.00	108.23
PFTeDA_2	713.0 / 169.0	4.43	1083.852728	1000.00	108.39
NMeFOSAA_1	570.0 / 419.0	3.53	992.889949	1000.00	99.29
NMeFOSAA_2	570.0 / 512.0	3.53	877.311431	1000.00	87.73
NEtFOSAA_1	584.0 / 419.0	3.69	1127.984070	1000.00	112.80
NEtFOSAA_2	584.0 / 483.0	3.69	958.925191	1000.00	95.89

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QC Summary Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.53	2562.158854	2525.00	101.47
PFBS_2	298.9 / 99.0	1.53	2523.811438	2525.00	99.95
PFHxA_1	313.0 / 269.0	1.84	2210.407494	2525.00	87.54
PFHxA_2	313.0 / 119.0	1.84	2224.902959	2525.00	88.11
PFHpA_1	363.0 / 319.0	2.24	2108.523934	2500.00	84.34
PFHpA_2	363.0 / 169.0	2.24	2082.294087	2500.00	83.29
PFHxS_1	399.0 / 80.0	2.26	2262.286719	2525.00	89.60
PFHxS_2	399.0 / 99.0	2.26	2363.136829	2525.00	93.59
PFOA_1	413.0 / 369.0	2.64	2186.203668	2500.00	87.45
PFOA_2	413.0 / 169.0	2.64	2141.091874	2500.00	85.64
PFNA_1	463.0 / 419.0	3.02	2189.921889	2500.00	87.60
PFNA_2	463.0 / 219.0	3.02	2077.266124	2500.00	83.09
PFOS_1	499.0 / 80.0	3.02	2578.120772	2500.00	103.12
PFOS_2	499.0 / 99.0	3.02	2723.056815	2500.00	108.92
PFDA_1	513.0 / 469.0	3.38	2364.317466	2500.00	94.57
PFDA_2	513.0 / 219.0	3.37	2201.311331	2500.00	88.05
PFUnA_1	563.0 / 519.0	3.69	2215.286564	2500.00	88.61
PFUnA_2	563.0 / 269.0	3.69	2292.018710	2500.00	91.68
PFDoA_1	613.0 / 569.0	3.97	2456.729993	2500.00	98.27
PFDoA_2	613.0 / 319.0	3.97	2503.451892	2500.00	100.14
PFTrDA_1	663.0 / 619.0	4.22	2698.215172	2500.00	107.93
PFTrDA_2	663.0 / 169.0	4.21	2656.127469	2500.00	106.25
PFTeDA_1	713.0 / 669.0	4.43	2622.647058	2500.00	104.91
PFTeDA_2	713.0 / 169.0	4.43	2581.993222	2500.00	103.28
NMeFOSAA_1	570.0 / 419.0	3.53	2550.890367	2500.00	102.04
NMeFOSAA_2	570.0 / 512.0	3.53	2461.204487	2500.00	98.45
NEtFOSAA_1	584.0 / 419.0	3.69	1914.531767	2500.00	76.58
NEtFOSAA_2	584.0 / 483.0	3.69	2257.930143	2500.00	90.32

QC Summary Report

Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.96	249.050713	250.00	99.62
d3-MeFOSAA	573.0 / 419.0	3.52	240.151495	250.00	96.06
d5-EtFOSAA	589.0 / 419.0	3.68	215.693399	250.00	86.28
13C5-PFHxA	318.0 / 273.0	1.83	253.703004	250.00	101.48
13C4-PFHpA	367.0 / 322.0	2.23	255.340283	250.00	102.14
13C8-PFOA	421.0 / 376.0	2.63	279.453097	250.00	111.78
13C9-PFNA	472.0 / 427.0	3.01	295.245165	250.00	118.10
13C6-PFDA	519.0 / 474.0	3.37	249.663304	250.00	99.87
13C7-PFUnA	570.0 / 525.0	3.68	252.400097	250.00	100.96
13C2-PFTeDA	715.0 / 670.0	4.42	240.677736	250.00	96.27
13C3-PFBS	302.0 / 99.0	1.52	200.782472	232.25	86.45
13C3-PFHxS	402.0 / 99.0	2.25	244.099953	236.50	103.21
13C8-PFOS	507.0 / 99.0	3.02	234.963362	239.25	98.21

QC Summary Report

Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.96	252.577447	250.00	101.03
d3-MeFOSAA	573.0 / 419.0	3.52	261.066600	250.00	104.43
d5-EtFOSAA	589.0 / 419.0	3.68	311.544389	250.00	124.62
13C5-PFHxA	318.0 / 273.0	1.83	265.867654	250.00	106.35
13C4-PFHpA	367.0 / 322.0	2.23	246.903056	250.00	98.76
13C8-PFOA	421.0 / 376.0	2.63	268.778426	250.00	107.51
13C9-PFNA	472.0 / 427.0	3.01	280.852546	250.00	112.34
13C6-PFDA	519.0 / 474.0	3.36	246.763154	250.00	98.71
13C7-PFUnA	570.0 / 525.0	3.68	259.082819	250.00	103.63
13C2-PFTeDA	715.0 / 670.0	4.42	225.555711	250.00	90.22
13C3-PFBS	302.0 / 99.0	1.51	232.647581	232.25	100.17
13C3-PFHxS	402.0 / 99.0	2.25	257.585777	236.50	108.92
13C8-PFOS	507.0 / 99.0	3.01	250.267566	239.25	104.61

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Summary Ion Ratio Report

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Sample Name	JY45 ICC	**Injection Vial**	10
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:46:13	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.490	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.050	0.069	ü

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Summary Ion Ratio Report

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Sample Name	KA90 CCV	**Injection Vial**	6
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:34:51	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.290	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.290	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.02	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.290	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.190	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.040	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.530	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	JY46 IB	**Injection Vial**	9
Sample ID	Instrument Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T19:35:21	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.55	PFBS			
PFBS_2	298.9 / 99.0	1.53	PFBS	0.310	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.410	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.63	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.04	PFNA	0.370	0.309	ü
PFOS_1	499.0 / 80.0	2.99	PFOS			
PFOS_2	499.0 / 99.0	3.04	PFOS	0.120	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.41	PFDA	0.080	0.056	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.080	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.44	PFTeDA	0.070	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.510	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	CR815PB-FS(3)	**Injection Vial**	13
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:18:50	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.161	ü
PFTrDA_1	663.0 / 619.0	N/A	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	ü
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	CR816LCS-FS(3)	**Injection Vial**	14
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:29:42	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.300	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.270	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.070	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.02	PFNA	0.300	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.37	PFDA			
PFDA_2	513.0 / 219.0	3.37	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.060	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.21	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.520	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	NEtFOSAA	0.060	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7781-FS(3)	**Injection Vial**	15
Sample ID	JAX-TCC-SD02-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:40:33	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.161	
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7782-FS(3)	**Injection Vial**	16
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T20:51:25	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	0.296	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.230	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.161	
PFTrDA_1	663.0 / 619.0	4.21	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7782MS-FS(3)	**Injection Vial**	17
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:02:16	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
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	1.53	PFBS	0.300	0.296	ü
PFHxA_1	313.0 / 269.0	1.84	PFHxA			
PFHxA_2	313.0 / 119.0	1.84	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.24	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.26	PFHxS			
PFHxS_2	399.0 / 99.0	2.26	PFHxS	0.280	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.300	0.309	ü
PFOS_1	499.0 / 80.0	3.02	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.180	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.97	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.170	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.070	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.570	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7782MSD-FS(3)	**Injection Vial**	18
Sample ID	JAX-TCC-SD03-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:13:07	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.54	PFBS	0.310	0.296	ü
PFHxA_1	313.0 / 269.0	1.85	PFHxA			
PFHxA_2	313.0 / 119.0	1.85	PFHxA	0.070	0.067	ü
PFHpA_1	363.0 / 319.0	2.24	PFHpA			
PFHpA_2	363.0 / 169.0	2.25	PFHpA	0.020	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.300	0.290	ü
PFOA_1	413.0 / 369.0	2.64	PFOA			
PFOA_2	413.0 / 169.0	2.64	PFOA	0.060	0.065	ü
PFNA_1	463.0 / 419.0	3.03	PFNA			
PFNA_2	463.0 / 219.0	3.03	PFNA	0.310	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.03	PFOS	0.170	0.190	ü
PFDA_1	513.0 / 469.0	3.38	PFDA			
PFDA_2	513.0 / 219.0	3.38	PFDA	0.050	0.056	ü
PFUnA_1	563.0 / 519.0	3.69	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	PFUnA	0.050	0.063	ü
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	PFDoA	0.150	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.22	PFTrDA	0.060	0.065	ü
PFTeDA_1	713.0 / 669.0	4.43	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.43	PFTeDA	0.050	0.049	ü
NMeFOSAA_1	570.0 / 419.0	3.53	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	NMeFOSAA	0.500	0.567	ü
NEtFOSAA_1	584.0 / 419.0	3.69	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	NEtFOSAA	0.070	0.069	ü

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Summary Ion Ratio Report

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Sample Name	J7783-FS(3)	**Injection Vial**	19
Sample ID	JAX-TCC-SD04-09112018	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-09-17T21:23:58	**Data File**	09172018.wiff
Acquisition Method	5-0369.dam	**Result Table**	18-0559_18-0560_BASE
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.54	PFBS			
PFBS_2	298.9 / 99.0	1.51	PFBS	0.580	0.296	
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	PFHxA	N/A	0.067	ü
PFHpA_1	363.0 / 319.0	N/A	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.020	ü
PFHxS_1	399.0 / 80.0	2.27	PFHxS			
PFHxS_2	399.0 / 99.0	2.27	PFHxS	0.430	0.290	ü
PFOA_1	413.0 / 369.0	N/A	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.065	ü
PFNA_1	463.0 / 419.0	N/A	PFNA			
PFNA_2	463.0 / 219.0	N/A	PFNA	N/A	0.309	ü
PFOS_1	499.0 / 80.0	3.03	PFOS			
PFOS_2	499.0 / 99.0	3.02	PFOS	0.270	0.190	ü
PFDA_1	513.0 / 469.0	N/A	PFDA			
PFDA_2	513.0 / 219.0	N/A	PFDA	N/A	0.056	ü
PFUnA_1	563.0 / 519.0	3.70	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.063	
PFDoA_1	613.0 / 569.0	3.98	PFDoA			
PFDoA_2	613.0 / 319.0	3.98	PFDoA	0.210	0.161	ü
PFTrDA_1	663.0 / 619.0	4.22	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.065	
PFTeDA_1	713.0 / 669.0	N/A	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.049	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.567	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME
SOUTHEAST	JACKSONVILLE_NAS	18-0559	OFFSITE_RW	SITE 00011	JAX-TCC-SD03	Sediment e.g., Marine Sediment	440445.209	2148626.174	N6247016D9008	N6945017F0375	TETRA TECH, INC.	JAX-TCC-SD03-09112018
SOUTHEAST	JACKSONVILLE_NAS	18-0559	OFFSITE_RW	SITE 00011	JAX-TCC-SD04	Sediment e.g., Marine Sediment	440711.9472	2148689.115	N6247016D9008	N6945017F0375	TETRA TECH, INC.	JAX-TCC-SD04-09112018
SOUTHEAST	JACKSONVILLE_NAS	18-0559	OFFSITE_RW	SITE 00011	JAX-TCC-SD02	Sediment e.g., Marine Sediment	440534.5091	2148363.864	N6247016D9008	N6945017F0375	TETRA TECH, INC.	JAX-TCC-SD02-09112018

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC	RES_META_ID
SOUTHEAST	JACKSONVILLE_NAS	18-0559	OFFSITE_RW	Sediment	Normal (Regular)	11-Sep-18	537_MOD	Perfluoroalkyl Compounds	20190201100027.00
SOUTHEAST	JACKSONVILLE_NAS	18-0559	OFFSITE_RW	Sediment	Normal (Regular)	11-Sep-18	537_MOD	Perfluoroalkyl Compounds	20190201100027.00
SOUTHEAST	JACKSONVILLE_NAS	18-0559	OFFSITE_RW	Sediment	Normal (Regular)	11-Sep-18	537_MOD	Perfluoroalkyl Compounds	20190201100027.00