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Naval Facilities Engineering Command

Off-Base Drinking Water Sample Results, Combined Level 2 and Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Figure, SDG 18-0343

Naval Air Station Willow Grove
Willow Grove, Pennsylvania

August 2019

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

N00158_000767
WILLOW_GROVE_NAS
SSIC 5000-33c

LABORATORY DATA PACKAGE, 18-0343, NAWC WARMINSTER NAS WILLOW GROVE PA

06/21/2018

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Approved for public release: distribution unlimited.

Naval Air Station Joint Reserve Base Willow Grove, PA
Project No 100117920-WE04
PFAS in drinking water

DW

Batch 18-0343

Package DP-18-0135

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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Naval Air Station Joint Reserve Base Willow Grove, PA

Project No 100117920-WE04

PFAS in drinking water

DW

Batch 18-0343

Package DP-18-0135

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

NELAP Accreditation Number: E87856 (Florida Department of Health)

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

Analyst Approval:		schumitzd@battelle.org 2018.06.20 16:17:37 -04'00'
QC Chemist Approval:		fitche@battelle.org 2018.06.20 14:42:45 -04'00'
Project Manager Approval:		Digitally signed by Jonathan Thorn Date: 2018.06.21 08:21:55 -04'00'

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Naval Air Station Joint Reserve Base Willow Grove, PA

Project No 100117920-WE04

PFAS in drinking water

DW

Batch 18-0343

Package DP-18-0135

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Signature Page

Battelle 2018 (1 of 2)
Signature Page

Name (Printed)	Signature	Initials	Date
Jonathan Thorn		JRT	4/4/2018
Robert Lizotte, Jr.		BL	4.4.2018
FRANCO PALA	Franco Pala	FP	4.4.2018
Carla Devine	Carla Devine	CRD	4/4/18
Denise Schumitz	Denise Schumitz	DMS	4/4/18
Carolus Brunmeay		CBM	4/4/2018
Rich Rostucci		RR	4/4/2018
Michael Mera			4/4/2018
Christie Usher	Christie Usher	CU	4/4/18
Kevin McInerney		KM	4/4/18
Stephanie Schultz		SAS	4/4/18
Jordan Tower	Jordan Tower	JCT	4/4/18
KRISTEN NICHOLS	K Nichols	KN	4/4/18
Quintico H Brown		CB	4/4/18
Matt Schumitz		MS	4-4-18
Sam Guimaraes		SG	4-4-18
Lauren Griffith	Lauren M Griffith	LMG	4.4.18

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Battelle 2018 (2 of 2)
Signature Page

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

Work Plan

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WORK/QUALITY ASSURANCE PROJECT PLAN

1.0 GENERAL PROJECT INFORMATION

Project Title:	WE04 PFAS Analysis
Project Number:	100117920-WE04
Client:	Tetra Tech 661 Anderson Drive Foster Plaza 7 Pittsburgh, PA 15220 USA
Client Contact Information:	Andrew Frebowitz Project Manager (610) 382-1170(V) NA andy.frebowitz@tetratech.com
Effective Date of QAPP:	5/4/2018
Version Number:	100117920-WE04(L)-01
Project Manager:	Thorn, Jonathan
Laboratory Task Manager:	Thorn, Jonathan
Deliverable Due Date:	5/22/2018

2.0 SCOPE OF WORK

Overview:	Analysis of drinking water samples collected at Naval Air Station Joint Reserve Base Willow Grove.
Matrix:	Water

2.1 TECHNICAL APPROACH

2.1.1 Sample Receipt, Storage, and Handling

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

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

2.1.2 Sample Preparation

Up to 150 field samples and 150 field reagent blanks (FRB) per quarter. FRB samples will only be analyzed if the corresponding sample has detected levels of any PFAS analyte at or above the LOQ.

Samples Expected:	Samples Per Batch:	Batches Expected:
300	20	15

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	Millipore water with Trizma
LCS	Laboratory Control Sample	1 per batch	No	NA	Millipore water with Trizma
MS	Spiked field sample for determining method accuracy in the presence of matrix.	1 per batch	--	NA	MS/MSD indicated on COC
MSD	Spiked field sample for determining method accuracy and precision in the presence of matrix.	1 per batch	--	NA	MS/MSD indicated on COC

2.1.3 Extraction/Preparation

2.1.3.1 Extraction

SOP No.-Rev:	**5-371-03**
SOP Title:	*ANALYSIS OF POLY AND PERFLUOROALKYL SUBSTANCES IN DRINKING WATER SAMPLES BY LIQUID CHROMATOGRAPHY AND TANDEM MASS SPECTROMETRY (LC-MS/MS) FOLLOWING EPA METHOD 537.1*
Sample Size:	250 ml
SIS and LCS/MS Compounds:	Defined in Table 2.
Deviations:	None
Comments:	• MQO requirements per SOP 5-371 (EPA Method 537 Version 1.1). • FRB samples will only be analyzed if associated field sample has hits above the LOQ for any individual analyte.

Table 2: SIS and LCS/MS Spiking Level

Standard Type	Standard Contents		Spike Amount (ng)	Volume (uL)	Comment
PFAS - 537.1 Surrogate Solution	JV60	SIS	~ 0.100 - 0.40 ng	50 uL	NA
PFAS - 537.1 Second Source LCS/MS Solution	JV41	LCS/MS	~ 2.00 - 2.50	50 uL	LCS samples - vary each batch (50, 75, 100, 150 µL spikes)
PFAS - 537.1 Second Source LCS/MS Solution	JV41	LCS/MS	~ 3.00 - 3.8 ng	75 uL	MS/MSD samples - vary each batch (75, 100, 150 µL spikes)

2.1.3.2 Cleanup

None.

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

Table 3: RIS Spiking Level

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

2.1.4 Instrumental Analysis

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

1) SOP_No-Rev: **5-371-03**

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

Deviations: None

Comments:
- MQO requirements per SOP 5-371 (EPA Method 537 Version 1.1).
- FRB samples will only be analyzed if associated field sample has hits above the LOQ for any individual analyte.

2.2. DELIVERABLES

Deliverables Due:	5/22/2018
LIMS Reports:	*Yes*
Histograms:	*No*
Excel Tables:	*Yes*
EICs:	*No*
Chromatograms:	*No*
EDDs:	*Yes*
Comments:	Each data set will be due 21 days from receipt of samples Full QSM data package showing all aspects of 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	05/01/2018	12/31/2018	244	NA
Sample Preparation	05/04/2018	01/31/2019	272	NA
Instrument Analysis	05/07/2018	01/31/2019	269	NA
Quality Control Review	05/14/2018	01/31/2019	262	NA
Final Data Reporting	05/18/2018	01/31/2019	258	NA
Quality Assurance Review	05/21/2018	01/31/2019	255	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	All labor hours are based on a batch of 20 field samples.
Sample Preparation	8	1	8	All labor hours are based on a batch of 20 field samples.
Instrument Analysis	8	1	8	All labor hours are based on a batch of 20 field samples.
Quality Control Review	3	1	3	All labor hours are based on a batch of 20 field samples.
Final Data Reporting	1	1	1	All labor hours are based on a batch of 20 field samples.
Quality Assurance Review	1	1	1	All labor hours are based on a batch of 20 field samples.

7.0 STAFF DEVELOPMENT

None anticipated

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 1: Target Samples

Shipment: **SHP-180501-01**

Status: Approved

Description: WE04

Range: J5964-J5969

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J5964	WGNA-043018-RW-3103	04/30/2018 10:10 am	DW	R0118 (NA)			MSMSD
2	J5965	WGNA-043018-FRB-3103	04/30/2018 10:05 am	DW	R0118 (NA)			
3	J5966	NAWC-043018-RW-207	04/30/2018 10:40 am	DW	R0118 (NA)			
4	J5967	NAWC-043018-FRB-207	04/30/2018 10:35 am	DW	R0118 (NA)			
5	J5968	WGNA-043018-RW-3409	04/30/2018 1:40 pm	DW	R0118 (NA)			
6	J5969	WGNA-043018-FRB-3409	04/30/2018 1:35 pm	DW	R0118 (NA)			

Shipment: **SHP-180502-02**

Status: Approved

Description: WE04

Range: J5970-J5977

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J5970	WGNA-050118-RW-3385	05/01/2018 9:10 am	DW	R0118 (NA)			
2	J5971	WGNA-050118-FRB-3385	05/01/2018 9:05 am	DW	R0118 (NA)			
3	J5972	WGNA-050118-RW-3178	05/01/2018 9:40 am	DW	R0118 (NA)			
4	J5973	WGNA-050118-FRB-3178	05/01/2018 9:35 am	DW	R0118 (NA)			
5	J5974	NAWC-050118-RW-304	05/01/2018 10:10 am	DW	R0118 (NA)			
6	J5975	NAWC-050118-FRB-304	05/01/2018 10:05 am	DW	R0118 (NA)			
7	J5976	NAWC-050118-RW-098	05/01/2018 10:40 am	DW	R0118 (NA)			
8	J5977	NAWC-050118-FRB-098	05/01/2018 10:35 am	DW	R0118 (NA)			

Shipment: **SHP-180508-02**

Status: Approved

Description: WE04

Range: J6148-J6170

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6148	NAWC-050718-RW-316	05/07/2018 10:10 am	DW	R0118 (NA)			
2	J6149	NAWC-050718-FRB-316	05/07/2018 10:05 am	DW	R0118 (NA)			
3	J6150	NAWC-050718-RW-180	05/07/2018 10:40 am	DW	R0118 (NA)			
4	J6151	NAWC-050718-FRB-180	05/07/2018 10:35 am	DW	R0118 (NA)			
5	J6152	NAWC-050718-RW-275	05/07/2018 11:10 am	DW	R0118 (NA)			
6	J6153	NAWC-050718-FRB-275	05/07/2018 11:05 am	DW	R0118 (NA)			
7	J6154	NAWC-050718-RW-145	05/07/2018 12:40 pm	DW	R0118 (NA)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: **SHP-180508-02**

Status: Approved

Description: WE04

Range: J6148-J6170

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
8	J6155	NAWC-050718-FRB-145	05/07/2018 12:35 pm	DW	R0118 (NA)			
9	J6156	NAWC-050718-RW-357	05/07/2018 1:10 pm	DW	R0118 (NA)			
10	J6157	NAWC-050718-FRB-357	05/07/2018 1:05 pm	DW	R0118 (NA)			
11	J6158	NAWC-050718-RW-162	05/07/2018 1:40 pm	DW	R0118 (NA)			
12	J6159	NAWC-050718-FRB-162	05/07/2018 1:35 pm	DW	R0118 (NA)			
13	J6160	WGNA-050718-RW-0800	05/07/2018 2:10 pm	DW	R0118 (NA)			
14	J6161	WGNA-050718-FRB-0800	05/07/2018 2:05 pm	DW	R0118 (NA)			
15	J6162	WGNA-050718-RW-0335	05/07/2018 2:40 pm	DW	R0118 (NA)			
16	J6163	WGNA-050718-FRB-0335	05/07/2018 2:35 pm	DW	R0118 (NA)			
17	J6164	WGNA-050718-RW-3556	05/07/2018 3:10 pm	DW	R0118 (NA)			
18	J6165	WGNA-050718-FRB-3556	05/07/2018 3:05 pm	DW	R0118 (NA)			
19	J6166	NAWC-050718-RW-356	05/07/2018 3:40 pm	DW	R0118 (NA)			
20	J6167	NAWC-050718-FRB-356	05/07/2018 3:35 pm	DW	R0118 (NA)			
21	J6168	NAWC-050718-RW-289	05/07/2018 4:10 pm	DW	R0118 (NA)			
22	J6169	NAWC-050718-FRB-289	05/07/2018 4:05 pm	DW	R0118 (NA)			
23	J6170	WGNA-050718-DUP-35	05/07/2018 7:00 am	DW	R0118 (NA)			

Shipment: **SHP-180511-02**

Status: Approved

Description: WE04

Range: J6204-J6212

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6204	NAWC-051018-RW-303	05/10/2018 9:10 am	DW	R0118 (NA)			
2	J6205	NAWC-051018-FRB-303	05/10/2018 9:05 am	DW	R0118 (NA)			
3	J6206	WGNA-051018-RW-3220	05/10/2018 9:40 am	DW	R0118 (NA)			
4	J6207	WGNA-051018-FRB-3220	05/10/2018 9:35 am	DW	R0118 (NA)			
5	J6208	NAWC-051018-RW-177	05/10/2018 10:40 am	DW	R0118 (NA)			
6	J6209	NAWC-051018-FRB-177	05/10/2018 10:35 am	DW	R0118 (NA)			
7	J6210	WGNA-051018-RW-3295	05/10/2018 3:10 pm	DW	R0118 (NA)			
8	J6211	WGNA-051018-FRB-3295	05/10/2018 3:05 pm	DW	R0118 (NA)			
9	J6212	WGNA-051018-DUP-36	05/10/2018 7:00 am	DW	R0118 (NA)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: **SHP-180530-01**

Status: Approved

Description: WE04

Range: J6258-J6267

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6258	WGNA-052918-RW-3124	05/29/2018 9:40 am	DW	R0118 (NA)			
2	J6259	WGNA-052918-FRB-3124	05/29/2018 9:35 am	DW	R0118 (NA)			
3	J6260	WGNA-052918-RW-3493	05/29/2018 10:10 am	DW	R0118 (NA)			
4	J6261	WGNA-052918-FRB-3493	05/29/2018 10:05 am	DW	R0118 (NA)			
5	J6262	WGNA-052918-RW-3882	05/29/2018 10:25 am	DW	R0118 (NA)			
6	J6263	WGNA-052918-FRB-3882	05/29/2018 10:20 am	DW	R0118 (NA)			
7	J6264	WGNA-052918-RW-3978	05/29/2018 10:40 am	DW	R0118 (NA)			
8	J6265	WGNA-052918-FRB-3978	05/29/2018 10:35 am	DW	R0118 (NA)			
9	J6266	NAWC-052918-RW-161	05/29/2018 11:40 am	DW	R0118 (NA)			
10	J6267	NAWC-052918-FRB-161	05/29/2018 11:35 am	DW	R0118 (NA)			

Shipment: **SHP-180531-02**

Status: Approved

Description: WE04

Range: J6270-J6288

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6270	WGNA-053018-RW-3876	05/30/2018 8:10 am	DW	R0119 (NA)			
2	J6271	WGNA-053018-FRB-3876	05/30/2018 8:05 am	DW	R0119 (NA)			
3	J6272	WGNA-053018-DUP-37	05/30/2018 7:00 am	DW	R0119 (NA)			
4	J6273	NAWC-053018-RW-231	05/30/2018 8:40 am	DW	R0119 (NA)			
5	J6274	NAWC-053018-FRB-231	05/30/2018 8:35 am	DW	R0119 (NA)			
6	J6275	WGNA-053018-RW-3933	05/30/2018 11:10 am	DW	R0119 (NA)			
7	J6276	WGNA-053018-FRB-3933	05/30/2018 11:05 am	DW	R0119 (NA)			
8	J6277	NAWC-053018-RW-164	05/30/2018 2:10 pm	DW	R0119 (NA)			
9	J6278	NAWC-053018-FRB-164	05/30/2018 2:05 pm	DW	R0119 (NA)			
10	J6279	NAWC-053018-RW-292	05/30/2018 2:40 pm	DW	R0119 (NA)			
11	J6280	NAWC-053018-FRB-292	05/30/2018 2:35 pm	DW	R0119 (NA)			
12	J6281	NAWC-053018-RW-271	05/30/2018 3:10 pm	DW	R0119 (NA)			
13	J6282	NAWC-053018-FRB-271	05/30/2018 3:05 pm	DW	R0119 (NA)			
14	J6283	NAWC-053018-RW-270	05/30/2018 3:20 pm	DW	R0119 (NA)			
15	J6284	NAWC-053018-FRB-270	05/30/2018 3:15 pm	DW	R0119 (NA)			
16	J6285	NAWC-053018-RW-196	05/30/2018 3:40 pm	DW	R0119 (NA)			
17	J6286	NAWC-053018-FRB-196	05/30/2018 3:35 pm	DW	R0119 (NA)			
18	J6287	NAWC-053018-RW-172	05/30/2018 4:10 pm	DW	R0119 (NA)			
19	J6288	NAWC-053018-FRB-172	05/30/2018 4:05 pm	DW	R0119 (NA)			

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Shipment: **SHP-180601-02**

Status: Approved

Description: WE04

Range: J6290-J6300

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6290	NAWC-053118-RW-256	05/31/2018 8:10 am	DW	R0119 (NA)			
2	J6291	NAWC-053118-FRB-256	05/31/2018 8:05 am	DW	R0119 (NA)			
3	J6292	NAWC-053118-RW-126	05/31/2018 8:40 am	DW	R0119 (NA)			
4	J6293	NAWC-053118-FRB-126	05/31/2018 8:35 am	DW	R0119 (NA)			
5	J6294	WGNA-053118-DUP-38	05/31/2018 7:00 am	DW	R0119 (NA)			
6	J6295	WGNA-053118-RW-4850	05/31/2018 9:40 am	DW	R0119 (NA)			
7	J6296	WGNA-053118-FRB-4850	05/31/2018 9:35 am	DW	R0119 (NA)			
8	J6297	NAWC-053118-RW-311	05/31/2018 12:10 pm	DW	R0119 (NA)			
9	J6298	NAWC-053118-FRB-311	05/31/2018 12:05 pm	DW	R0119 (NA)			
10	J6299	NAWC-053118-RW-265	05/31/2018 4:10 pm	DW	R0119 (NA)			
11	J6300	NAWC-053118-FRB-265	05/31/2018 4:05 pm	DW	R0119 (NA)			

Shipment: **SHP-180605-07**

Status: Approved

Description: WE04

Range: J6582-J6591

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6582	NAWC-060408-RW-230	06/04/2018 8:10 am	DW	R0119 (NA)			
2	J6583	NAWC-060408-FRB-230	06/04/2018 8:05 am	DW	R0119 (NA)			
3	J6584	NAWC-060408-RW-309	06/04/2018 8:40 am	DW	R0119 (NA)			
4	J6585	NAWC-060408-FRB-309	06/04/2018 8:35 am	DW	R0119 (NA)			
5	J6586	NAWC-060408-RW-293	06/04/2018 9:40 am	DW	R0119 (NA)			
6	J6587	NAWC-060408-FRB-293	06/04/2018 9:35 am	DW	R0119 (NA)			
7	J6588	NAWC-060408-RW-038	06/04/2018 9:55 am	DW	R0119 (NA)			
8	J6589	NAWC-060408-FRB-038	06/04/2018 9:50 am	DW	R0119 (NA)			
9	J6590	NAWC-060408-RW-039	06/04/2018 10:10 am	DW	R0119 (NA)			
10	J6591	NAWC-060408-FRB-039	06/04/2018 10:05 am	DW	R0119 (NA)			

Shipment: **SHP-180608-03**

Status: Pending

Description: WE04

Range: J6637-J6643

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6637	WGNA-060718-RW-0488	06/07/2018 12:40 pm	DW	R0119 (NA)			
2	J6638	WGNA-060718-FRB-0488	06/07/2018 12:35 pm	DW	R0119 (NA)			
3	J6639	NAWC-060718-RW-175	06/07/2018 1:10 pm	DW	R0119 (NA)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: **SHP-180608-03**

Status: Pending

Description: WE04

Range: J6637-J6643

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
4	J6640	NAWC-060718-FRB-175	06/07/2018 1:05 pm	DW	R0119 (NA)			
5	J6641	WGNA-060718-DUP-39	06/07/2018 7:00 am	DW	R0119 (NA)			
6	J6642	WGNA-060718-RW-0626	06/07/2018 2:10 pm	DW	R0119 (NA)			
7	J6643	WGNA-060718-FRB-0626	06/07/2018 2:05 pm	DW	R0119 (NA)			

Shipment: **SHP-180613-02**

Status: Pending

Description: WE04

Range: J6737-J6745

Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	J6737	WGNA-061118-RW-3073	06/11/2018 11:10 am	DW	R0119 (NA)			
2	J6739	WGNA-061118-RW-0437	06/11/2018 11:40 am	DW	R0119 (NA)			
3	J6741	WGNA-061218-RW-3283	06/12/2018 9:10 am	DW	R0119 (NA)			
4	J6743	WGNA-061218-RW-3382	06/12/2018 9:40 am	DW	R0119 (NA)			
5	J6745	NAWC-061218-RW-276	06/12/2018 10:10 am	DW	R0119 (NA)			

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

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

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

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

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_371

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

Subtract Peaks:

None

Sum Peaks:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_371

ICAL Acceptance Criteria:

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

Continuing Calibration Verification Criteria:

CCV Name: Standard

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

Independent Calibration Verification:

ICC Name: Standard

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

Mass Discrimination Criteria:

None

Degredation Check Criteria:

None

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

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

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WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

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

BATTELLE

It can be done

ShpNo SHP-180530-01

Battelle Project No:

Sample Receipt Form

Approved: ☐ Authorized ☐

Project Number: 112G08005-WE04 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, May 30, 2018 10:30 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier **Tracking Number:** 7723 3007 0381

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	7723 3007 0381	Tape	Intact	Intact	Therm_2	1.7	10

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): 1.7 Temperature Blank used ☐ Yes ☑ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: Unknown

Storage Location: Custody: Refrigerator - R0119 (NA) **BDO IDs Assigned:** J6258 - J6267

Samples logged in by: Schumitz, Matt **Date/Time:** 05/30/2018 10:30 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

BATTELLE

It can be done

ShpNo SHP-180530-01

Battelle Project No:

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: 112G08005-WE04 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Wednesday, May 30, 2018 10:30 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J6258	WGNA-052918-RW-3124	05/29/18 9:40	05/30/18 13:03	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6259	WGNA-052918-FRB-3124	05/29/18 9:35	05/30/18 13:03	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6260	WGNA-052918-RW-3493	05/29/18 10:10	05/30/18 13:03	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6261	WGNA-052918-FRB-3493	05/29/18 10:05	05/30/18 13:04	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6262	WGNA-052918-RW-3882	05/29/18 10:25	05/30/18 13:04	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6263	WGNA-052918-FRB-3882	05/29/18 10:20	05/30/18 13:04	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6264	WGNA-052918-RW-3978	05/29/18 10:40	05/30/18 13:04	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6265	WGNA-052918-FRB-3978	05/29/18 10:35	05/30/18 13:05	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6266	NAWC-052918-RW-161	05/29/18 11:40	05/30/18 13:05	2	DW	1.7	NA	NA	NA	R0118 (NA)			
J6267	NAWC-052918-FRB-161	05/29/18 11:35	05/30/18 13:06	2	DW	1.7	NA	NA	NA	R0118 (NA)			

Total Samples: 10

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Client Contact Information
Andy Frebowitz
234 Mall Boulevard, Suite 260
King of Prussia, PA 19406
610-382-1170

Project Manager: Jonathan Thorn
Sampler Information (print name): Mary Kay Bond
Phone: 610-382-1169
Email: mary.bond@tetratech.com
Turnaround Time (TAT) Requested: 21 days

Project Name: WE04
Project No.: 112G08005-WE04

Normal ☑
Priority ☐
RUSH ☐

Time Zone: Eastern

Sampling Site: WE04

Site Information: NAS JRB Willow Grove/WGNA Warminster

COC #

Page# 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservativ: Trizma	Analysis: PFAS EPA 537 14 analytes	
WGNA-052918-RW-3124 J6258	5/29/2018	9:40	G	DW	2		X	
WGNA-052918-FRB-3124 J6259	5/29/2018	9:35	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3493 J6260	5/29/2018	10:10	G	DW	2		X	
WGNA-052918-FRB-3493 J6261	5/29/2018	10:05	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3882 J6262	5/29/2018	10:25	G	DW	2		X	
WGNA-052918-FRB-3882 J6263	5/29/2018	10:20	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3978 J6264	5/29/2018	10:40	G	DW	2		X	
WGNA-052918-FRB-3978 J6265	5/29/2018	10:35	G	DW	2		X	Field Reagent Blank
NAWC-052918-RW-161 J6266	5/29/2018	11:40	G	DW	2		X	
NAWC-052918-FRB-161 J6267	5/29/2018	11:35	G	DW	2		X	Field Reagent Blank

Receipt Temperature:(°C) 1.7°

Samples Intact: (Yes) - No

Samples on Ice: (Yes) - No

Receipt Comments:

Relinquished by (Print/Sign)	Company	Date/Time	Received by (Print/Sign)	Company	Date/Time
[signature]	Tetra Tech	05/29/2018 16:00	Matt Schrumitz [signature]	Battelle	5-30-18 10:30
Relinquished by (Print/Sign):	Company:	Date/Time:	Received by (Print/Sign):	Company:	Date/Time:
Relinquished by (Print/Sign):	Company:	Date/Time:	Received by (Print/Sign):	Company:	Date/Time:

Comments: FedEx Tracking # 7723 3007 0381

ORIGIN ID:KPDA (610) 382-1530
N. SOMA
TETRA TECH
234 MALL BLVD
SUITE 260
KING OF PRUSSIA, PA 19406
UNITED STATES US

SHIP DATE: 29MAY18
ACTWGT: 40.00 LB
CAD: 111283035/INET3980
DIMS: 24x16x18 IN

BILL SENDER

MOS 1030
1.7°
Therm 2

TO JONATHAN THORN
BATTELLE
141 LONGWATER DRIVE
SUITE 202
NORWELL MA 02061
(781) 681-5565
INV:
PO:
REF: 112G08005-WE04 LT.WS
DEPT:

552.D2/782B/DCA5

FedEx Express

E

J1811180126B1uv

WED - 30 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7723 3007 0381

EM XPUA

02061
MA-US BOS

BATTELLE

It can be done

ShpNo SHP-180531-02

Battelle Project No: 7920-WE04

Sample Receipt Form

Approved: ☐ Authorized ☐

Project Number: 112G08005-WE04 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Thursday, May 31, 2018 10:30 AM

No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier **Tracking Number:** 7723 4831 5079

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	7723 4831 5079	Custody Seals	Intact	Intact	Therm_2	1.3	19

Samples

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

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

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

Temperature upon receipt (°C): 1.3 Temperature Blank used ☑ Yes ☐ No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: ☐ Yes ☐ No ☑ Unknown

Initial pH 5-9?: ☐ Yes ☐ No ☑ NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: ☐ Yes ☐ No ☑ NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: ☐ Yes ☐ No ☑ NA
Individual sample deviations noted on sample log

Samples Containers:
Samples returned in PC-grade jars: ☐ Yes ☐ No ☑ Unknown /Lot No.: UnKnown

Storage Location: Custody: Refrigerator - R0119 (NA) **BDO IDs Assigned:** J6270 - J6288

Samples logged in by: Schumitz, Matt **Date/Time:** 05/31/2018 10:30 AM

Approved By: **Approved On:**

Authorized By: **Authorized On:**

BATTELLE

It can be done

ShpNo SHP-180531-02

Battelle Project No: 7920-WE04

Sample Receipt Form Details

Approved: ☐ Authorized ☐

Project Number: 112G08005-WE04 **Client:** Tetra Tech

Received by: Schumitz, Matt **Date/Time Received:** Thursday, May 31, 2018 10:30 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
J6270	WGNA-053018-RW-3876	05/30/18 8:10	05/31/18 11:32	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6271	WGNA-053018-FRB-3876	05/30/18 8:05	05/31/18 11:32	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6272	WGNA-053018-DUP-37	05/30/18 7:00	05/31/18 11:32	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6273	NAWC-053018-RW-231	05/30/18 8:40	05/31/18 11:33	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6274	NAWC-053018-FRB-231	05/30/18 8:35	05/31/18 11:33	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6275	WGNA-053018-RW-3933	05/30/18 11:10	05/31/18 11:34	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6276	WGNA-053018-FRB-3933	05/30/18 11:05	05/31/18 11:34	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6277	NAWC-053018-RW-164	05/30/18 14:10	05/31/18 11:35	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6278	NAWC-053018-FRB-164	05/30/18 14:05	05/31/18 11:35	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6279	NAWC-053018-RW-292	05/30/18 14:40	05/31/18 11:35	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6280	NAWC-053018-FRB-292	05/30/18 14:35	05/31/18 11:36	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6281	NAWC-053018-RW-271	05/30/18 15:10	05/31/18 11:36	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6282	NAWC-053018-FRB-271	05/30/18 15:05	05/31/18 11:37	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6283	NAWC-053018-RW-270	05/30/18 15:20	05/31/18 11:37	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6284	NAWC-053018-FRB-270	05/30/18 15:15	05/31/18 11:38	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6285	NAWC-053018-RW-196	05/30/18 15:40	05/31/18 11:38	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6286	NAWC-053018-FRB-196	05/30/18 15:35	05/31/18 11:38	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6287	NAWC-053018-RW-172	05/30/18 16:10	05/31/18 11:38	2	DW	1.3	NA	NA	NA	R0119 (NA)			
J6288	NAWC-053018-FRB-172	05/30/18 16:05	05/31/18 11:39	2	DW	1.3	NA	NA	NA	R0119 (NA)			

Total Samples: 19

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The Business of Innovation

Chain-of-Custody

Client Contact Information
Andy Frebowitz
234 Mall Boulevard, Suite 260
King of Prussia, PA 19406
610-382-1170

Project Manager: Jonathan Thorn
Sampler Information (print name): Mary Kay Bond
Phone: 610-382-1169
Email: mary.bond@tetratech.com
Turnaround Time (TAT) Requested: 21 days

Project Name: WE04
Project No.: 112G08005-WE04

Normal ☑
Priority ☐
RUSH ☐
Time Zone: Eastern

Sampling Site: WE04

Site Information: NAS JRB Willow Grove/WGNA Warminster

COC #

Page# 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservativ: Trizma	Analysis: PFAS EPA 537 14 analytes	
WGNA-053018-RW-3876 J6270	5/30/2018	8:10	G	DW	2		X	
WGNA-053018-FRB-3876 71	5/30/2018	8:05	G	DW	2		X	Field Reagent Blank
WGNA-053018-DUP-37 72	5/30/2018	7:00	G	DW	2		X	DUPLICATE
NAWC-053018-RW-231 73	5/30/2018	8:40	G	DW	2		X	
NAWC-053018-FRB-231 74	5/30/2018	8:35	G	DW	2		X	Field Reagent Blank
WGNA-053018-RW-3933 75	5/30/2018	11:10	G	DW	2		X	
WGNA-053018-FRB-3933 76	5/30/2018	11:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-164 77	5/30/2018	14:10	G	DW	2		X	
NAWC-053018-FRB-164 78	5/30/2018	14:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-292 79	5/30/2018	14:40	G	DW	2		X	
NAWC-053018-FRB-292 80	5/30/2018	14:35	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-271 81	5/30/2018	15:10	G	DW	2		X	
NAWC-053018-FRB-271 82	5/30/2018	15:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-270 83	5/30/2018	15:20	G	DW	2		X	
NAWC-053018-FRB-270 84	5/30/2018	15:15	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-196 85	5/30/2018	15:40	G	DW	2		X	
NAWC-053018-FRB-196 86	5/30/2018	15:35	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-172 87	5/30/2018	16:10	G	DW	2		X	
NAWC-053018-FRB-172 J6288	5/30/2018	16:05	G	DW	2		X	Field Reagent Blank

Receipt Temperature:(°C) 1.3

Samples Intact: Yes - No

Samples on Ice: Yes - No

Receipt Comments:

Relinquished by (Print/Sign):	Company:	Date/Time:	Received by (Print/Sign):	Company:	Date/Time:
Mary Kay Bond	Tetra Tech	05/30/2018 18:00	Matt Schumitz MS	Battelle	5-31-18 1030

Comments: FedEx Tracking # 7723 4831 5079

FedEx
TRK# 0201 7723 4831 5079

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PRIORITY OVERNIGHT

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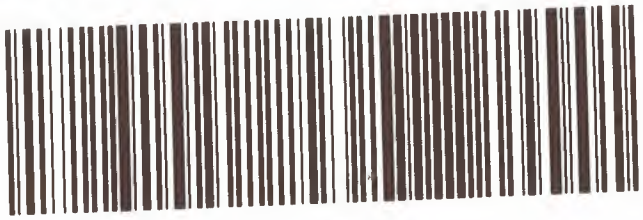
PRINT FEDEX 7497-435 EXP 01/19



#5129952 05/30 552J2/782B/DCA5

Therm. 2 10:30
MDS 1.30

Data Tables

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3124			
Battelle ID	J6258-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.59	0.21	0.48	2.40
PFHpA	3.13	0.33	0.96	2.40
PFOA	11.54	0.37	0.96	2.40
PFNA	1.42 J	0.36	0.96	2.40
PFDA	0.96 U	0.38	0.96	2.40
PFUnA	0.96 U	0.37	0.96	2.40
PFDoA	0.96 U	0.40	0.96	2.40
PFTrDA	0.96 U	0.40	0.96	2.40
PFTeDA	1.44 U	0.70	1.44	2.40
NMeFOSAA	0.96 U	0.40	0.96	2.40
NEtFOSAA	0.96 U	0.42	0.96	2.40
PFBS	3.32	0.20	0.48	2.40
PFHxS	5.70	0.33	0.96	2.40
PFOS	10.06	0.29	0.96	2.40
Surrogate Recoveries (%)				
13C2-PFHxA	107			
13C2-PFDA	97			
d5-EtFOSAA	104			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3493			
Battelle ID	J6260-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	7.38	0.20	0.45	2.27
PFHpA	4.29	0.31	0.91	2.27
PFOA	14.59	0.35	0.91	2.27
PFNA	2.23 J	0.34	0.91	2.27
PFDA	0.91 U	0.35	0.91	2.27
PFUnA	0.91 U	0.35	0.91	2.27
PFDoA	0.91 U	0.38	0.91	2.27
PFTrDA	0.91 U	0.38	0.91	2.27
PFTeDA	1.36 U	0.66	1.36	2.27
NMeFOSAA	0.91 U	0.38	0.91	2.27
NEtFOSAA	0.91 U	0.40	0.91	2.27
PFBS	8.41	0.19	0.45	2.27
PFHxS	9.19	0.31	0.91	2.27
PFOS	17.70	0.27	0.91	2.27
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	115			
d5-EtFOSAA	108			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3882			
Battelle ID	J6262-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.74	0.19	0.43	2.16
PFHpA	4.41	0.29	0.86	2.16
PFOA	8.47	0.33	0.86	2.16
PFNA	3.04	0.32	0.86	2.16
PFDA	0.86 U	0.34	0.86	2.16
PFUnA	0.86 U	0.33	0.86	2.16
PFDoA	0.86 U	0.36	0.86	2.16
PFTrDA	0.86 U	0.36	0.86	2.16
PFTeDA	1.29 U	0.63	1.29	2.16
NMeFOSAA	0.86 U	0.36	0.86	2.16
NEtFOSAA	0.86 U	0.38	0.86	2.16
PFBS	4.09	0.18	0.43	2.16
PFHxS	9.46	0.29	0.86	2.16
PFOS	25.23	0.26	0.86	2.16
Surrogate Recoveries (%)				
13C2-PFHxA	103			
13C2-PFDA	93			
d5-EtFOSAA	103			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3978			
Battelle ID	J6264-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.86	0.20	0.46	2.31
PFHpA	4.86	0.31	0.93	2.31
PFOA	11.26	0.35	0.93	2.31
PFNA	2.34	0.34	0.93	2.31
PFDA	0.69 J	0.36	0.93	2.31
PFUnA	0.93 U	0.35	0.93	2.31
PFDoA	0.93 U	0.39	0.93	2.31
PFTrDA	0.93 U	0.39	0.93	2.31
PFTeDA	1.39 U	0.68	1.39	2.31
NMeFOSAA	0.93 U	0.39	0.93	2.31
NEtFOSAA	0.93 U	0.41	0.93	2.31
PFBS	4.11	0.19	0.46	2.31
PFHxS	6.64	0.31	0.93	2.31
PFOS	14.01	0.28	0.93	2.31
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	103			
d5-EtFOSAA	91			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-052918-RW-161			
Battelle ID	J6266-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	11.56	0.19	0.43	2.16
PFHpA	6.13	0.29	0.86	2.16
PFOA	18.42	0.33	0.86	2.16
PFNA	3.39	0.32	0.86	2.16
PFDA	0.58 J	0.34	0.86	2.16
PFUnA	0.86 U	0.33	0.86	2.16
PFDoA	0.86 U	0.36	0.86	2.16
PFTrDA	0.86 U	0.36	0.86	2.16
PFTeDA	1.29 U	0.63	1.29	2.16
NMeFOSAA	0.86 U	0.36	0.86	2.16
NEtFOSAA	0.86 U	0.38	0.86	2.16
PFBS	7.62	0.18	0.43	2.16
PFHxS	13.47	0.29	0.86	2.16
PFOS	35.04	0.26	0.86	2.16
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	100			
d5-EtFOSAA	113			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3876			
Battelle ID	J6270-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.58	0.20	0.45	2.27
PFHpA	2.84	0.31	0.91	2.27
PFOA	10.65	0.35	0.91	2.27
PFNA	1.54 J	0.34	0.91	2.27
PFDA	0.91 U	0.35	0.91	2.27
PFUnA	0.91 U	0.35	0.91	2.27
PFDoA	0.91 U	0.38	0.91	2.27
PFTrDA	0.91 U	0.38	0.91	2.27
PFTeDA	1.36 U	0.66	1.36	2.27
NMeFOSAA	0.91 U	0.38	0.91	2.27
NEtFOSAA	0.91 U	0.40	0.91	2.27
PFBS	2.96	0.19	0.45	2.27
PFHxS	4.42	0.31	0.91	2.27
PFOS	9.86	0.27	0.91	2.27
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	101			
d5-EtFOSAA	111			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-DUP-37			
Battelle ID	J6272-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.56	0.20	0.45	2.27
PFHpA	3.03	0.31	0.91	2.27
PFOA	10.75	0.35	0.91	2.27
PFNA	1.78 J	0.34	0.91	2.27
PFDA	0.91 U	0.35	0.91	2.27
PFUnA	0.91 U	0.35	0.91	2.27
PFDoA	0.91 U	0.38	0.91	2.27
PFTrDA	0.91 U	0.38	0.91	2.27
PFTeDA	1.36 U	0.66	1.36	2.27
NMeFOSAA	0.91 U	0.38	0.91	2.27
NEtFOSAA	0.91 U	0.40	0.91	2.27
PFBS	2.96	0.19	0.45	2.27
PFHxS	4.84	0.31	0.91	2.27
PFOS	10.28	0.27	0.91	2.27

Surrogate Recoveries (%)

13C2-PFHxA	119
13C2-PFDA	110
d5-EtFOSAA	109

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-231				
Battelle ID	J6273-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.285				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	9.35		0.19	0.44	2.19
PFHpA	4.11		0.30	0.88	2.19
PFOA	10.51		0.33	0.88	2.19
PFNA	1.76	J	0.32	0.88	2.19
PFDA	0.88	U	0.34	0.88	2.19
PFUnA	0.88	U	0.33	0.88	2.19
PFDoA	0.88	U	0.37	0.88	2.19
PFTrDA	0.88	U	0.37	0.88	2.19
PFTeDA	1.32	U	0.64	1.32	2.19
NMeFOSAA	0.88	U	0.37	0.88	2.19
NEtFOSAA	0.88	U	0.39	0.88	2.19
PFBS	5.78		0.18	0.44	2.19
PFHxS	37.20	JD	5.96	17.54	43.86
PFOS	57.09	D	5.26	17.54	43.86
Surrogate Recoveries (%)					
13C2-PFHxA	107				
13C2-PFDA	97				
d5-EtFOSAA	88				

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3933			
Battelle ID	J6275-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	9.95	0.19	0.44	2.19
PFHpA	6.85	0.30	0.88	2.19
PFOA	18.92	0.33	0.88	2.19
PFNA	2.35	0.32	0.88	2.19
PFDA	0.88 U	0.34	0.88	2.19
PFUnA	0.88 U	0.33	0.88	2.19
PFDoA	0.88 U	0.37	0.88	2.19
PFTrDA	0.88 U	0.37	0.88	2.19
PFTeDA	1.32 U	0.64	1.32	2.19
NMeFOSAA	0.88 U	0.37	0.88	2.19
NEtFOSAA	0.88 U	0.39	0.88	2.19
PFBS	7.61	0.18	0.44	2.19
PFHxS	4.80	0.30	0.88	2.19
PFOS	19.86	0.26	0.88	2.19
Surrogate Recoveries (%)				
13C2-PFHxA	111			
13C2-PFDA	103			
d5-EtFOSAA	103			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-164			
Battelle ID	J6277-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.14	0.20	0.46	2.31
PFHpA	5.55	0.31	0.93	2.31
PFOA	18.79	0.35	0.93	2.31
PFNA	2.18 J	0.34	0.93	2.31
PFDA	0.93 U	0.36	0.93	2.31
PFUnA	0.93 U	0.35	0.93	2.31
PFDoA	0.93 U	0.39	0.93	2.31
PFTrDA	0.93 U	0.39	0.93	2.31
PFTeDA	1.39 U	0.68	1.39	2.31
NMeFOSAA	0.93 U	0.39	0.93	2.31
NEtFOSAA	0.93 U	0.41	0.93	2.31
PFBS	29.34	0.19	0.46	2.31
PFHxS	6.74	0.31	0.93	2.31
PFOS	14.52	0.28	0.93	2.31
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	105			
d5-EtFOSAA	126			

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-292			
Battelle ID	J6279-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	10.15	0.19	0.44	2.19
PFHpA	6.81	0.30	0.88	2.19
PFOA	24.37	0.33	0.88	2.19
PFNA	3.39	0.32	0.88	2.19
PFDA	0.46 J	0.34	0.88	2.19
PFUnA	0.88 U	0.33	0.88	2.19
PFDoA	0.88 U	0.37	0.88	2.19
PFTrDA	0.88 U	0.37	0.88	2.19
PFTeDA	1.32 U	0.64	1.32	2.19
NMeFOSAA	0.88 U	0.37	0.88	2.19
NEtFOSAA	0.88 U	0.39	0.88	2.19
PFBS	5.60	0.18	0.44	2.19
PFHxS	7.86	0.30	0.88	2.19
PFOS	20.09	0.26	0.88	2.19
Surrogate Recoveries (%)				
13C2-PFHxA	116			
13C2-PFDA	93			
d5-EtFOSAA	107			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-271			
Battelle ID	J6281-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.47	0.20	0.45	2.27
PFHpA	3.38	0.31	0.91	2.27
PFOA	12.38	0.35	0.91	2.27
PFNA	1.32 J	0.34	0.91	2.27
PFDA	0.91 U	0.35	0.91	2.27
PFUnA	0.91 U	0.35	0.91	2.27
PFDoA	0.91 U	0.38	0.91	2.27
PFTrDA	0.91 U	0.38	0.91	2.27
PFTeDA	1.36 U	0.66	1.36	2.27
NMeFOSAA	0.91 U	0.38	0.91	2.27
NEtFOSAA	0.91 U	0.40	0.91	2.27
PFBS	3.10	0.19	0.45	2.27
PFHxS	5.44	0.31	0.91	2.27
PFOS	10.03	0.27	0.91	2.27
Surrogate Recoveries (%)				
13C2-PFHxA	106			
13C2-PFDA	103			
d5-EtFOSAA	107			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-270			
Battelle ID	J6283-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.51	0.20	0.45	2.27
PFHpA	3.35	0.31	0.91	2.27
PFOA	10.97	0.35	0.91	2.27
PFNA	1.80 J	0.34	0.91	2.27
PFDA	0.91 U	0.35	0.91	2.27
PFUnA	0.91 U	0.35	0.91	2.27
PFDoA	0.91 U	0.38	0.91	2.27
PFTrDA	0.91 U	0.38	0.91	2.27
PFTeDA	1.36 U	0.66	1.36	2.27
NMeFOSAA	0.91 U	0.38	0.91	2.27
NEtFOSAA	0.91 U	0.40	0.91	2.27
PFBS	6.24	0.19	0.45	2.27
PFHxS	4.45	0.31	0.91	2.27
PFOS	12.57	0.27	0.91	2.27
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	99			
d5-EtFOSAA	113			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-196			
Battelle ID	J6285-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	13.18	0.20	0.45	2.27
PFHpA	6.70	0.31	0.91	2.27
PFOA	15.77	0.35	0.91	2.27
PFNA	2.27 J	0.34	0.91	2.27
PFDA	0.69 J	0.35	0.91	2.27
PFUnA	0.91 U	0.35	0.91	2.27
PFDoA	0.91 U	0.38	0.91	2.27
PFTrDA	0.91 U	0.38	0.91	2.27
PFTeDA	1.36 U	0.66	1.36	2.27
NMeFOSAA	0.91 U	0.38	0.91	2.27
NEtFOSAA	0.91 U	0.40	0.91	2.27
PFBS	7.55	0.19	0.45	2.27
PFHxS	2.31	0.31	0.91	2.27
PFOS	12.20	0.27	0.91	2.27
Surrogate Recoveries (%)				
13C2-PFHxA	108			
13C2-PFDA	97			
d5-EtFOSAA	108			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-172			
Battelle ID	J6287-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.90	0.20	0.46	2.31
PFHpA	3.31	0.31	0.93	2.31
PFOA	10.26	0.35	0.93	2.31
PFNA	1.08 J	0.34	0.93	2.31
PFDA	0.93 U	0.36	0.93	2.31
PFUnA	0.93 U	0.35	0.93	2.31
PFDoA	0.93 U	0.39	0.93	2.31
PFTrDA	0.93 U	0.39	0.93	2.31
PFTeDA	1.39 U	0.68	1.39	2.31
NMeFOSAA	0.93 U	0.39	0.93	2.31
NEtFOSAA	0.93 U	0.41	0.93	2.31
PFBS	2.83	0.19	0.46	2.31
PFHxS	3.67	0.31	0.93	2.31
PFOS	8.12	0.28	0.93	2.31
Surrogate Recoveries (%)				
13C2-PFHxA	115			
13C2-PFDA	109			
d5-EtFOSAA	120			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Procedural Blank			
Battelle ID	CQ870PB-FS			
Sample Type	PB			
Collection Date	06/01/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.45 J	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDoA	1.00 U	0.42	1.00	2.50
PFTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	96
d5-EtFOSAA	109

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Laboratory Control Sample					
Battelle ID	CQ871LCS-FS					
Sample Type	LCS					
Collection Date	06/01/2018					
Extraction Date	06/01/2018					
Analysis Date	06/12/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L				Control Limits	
Units	ng/L	Target	Recovery	Qual	Lower	Upper
PFHxA	29.82	30.00	99		70	130
PFHpA	28.21	30.00	94		70	130
PFOA	27.75	30.00	93		70	130
PFNA	28.01	30.00	93		70	130
PFDA	26.56	30.00	89		70	130
PFUnA	27.19	30.00	91		70	130
PFDoA	27.67	30.00	92		70	130
PFTrDA	29.69	30.00	99		70	130
PFTeDA	38.21	30.00	127		70	130
NMeFOSAA	31.27	30.00	104		70	130
NEtFOSAA	32.32	30.00	108		70	130
PFBS	25.39	26.55	96		70	130
PFHxS	26.33	28.35	93		70	130
PFOS	25.47	28.65	89		70	130

Surrogate Recoveries (%)

13C2-PFHxA	108
13C2-PFDA	103
d5-EtFOSAA	107

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

Norwell Operations
141 Longwater Drive, Suite 202
Norwell, Massachusetts 02061
Telephone: 781-681-5400

July 13th, 2018

This data package has been revised to include the following updates to the reporting format:

- Use of LOD values for non-detected values (in place of the MDL value that was used in the original report).
- Use of sample specific MDL, LOD, and LOQ values (adjusted for dilution and sample size variations as compared to the MDL, LOD, and LOQ studies)

In addition to non-detect ("U" qualified) data changing to use the sample specific LOD value (not included in the table below), the information in the following table changed from the original report to the new report. The reason for these changes is the variation in sample size for individual samples when using sample specific values. This table includes information on all SDG updated and resubmitted on 7/13/2018.

SDG	Lab Sample ID	Client ID	Analyte	New Result	New Qual	Old Result	Old Qual
18-0299	J5972-FS	WGNA-050118-RW-3178	PFHpA	2.25		2.25	J
18-0313	J6148-FS	NAWC-050718-RW-316	PFNA	2.26		2.26	J
18-0313	J6150-FS	NAWC-050718-RW-180	PFDA	0.37	J	0.39	U
18-0323	J6209-FS	NAWC-051018-FRB-177	PFOA	0.38	J	0.38	U
18-0343	J6264-FS	WGNA-052918-RW-3978	PFNA	2.34		2.34	J
18-0343	J6273-FS	NAWC-053018-RW-231	PFHxS	37.20	JD	37.20	D
18-0343	J6275-FS	WGNA-053018-RW-3933	PFNA	2.35		2.35	J
18-0343	J6285-FS	NAWC-053018-RW-196	PFHxS	2.31		2.31	J
18-0360	J6583-FS	NAWC-060418-FRB-230	PFHxS	0.33	J	1.00	U
18-0360	J6643-FS	WGNA-060718-FRB-0626	PFOS	2.48	B	2.48	J

The original data tables have been moved to the unused data section of this complete data package. For SDG 18-0313, the original MQO report and case narrative were moved to the unused data section of the full data package.

QA/QC Summary
Batch 18-0343

Project:	CTO-WE04 Naval Air Station Joint Reserve Base Willow Grove
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	DW
Data Set:	DP-18-0135
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
5/29/2018	5/30/2018	1.7
5/30/2018	5/31/2018	1.3

Corrective Actions	None
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	Field samples associated with these FRB samples are extracted in SDG 18-0359.

	METHOD SUMMARIES
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a weak ion exchange solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	None.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500. The confirmation ion ratio was above 50% RPD for the selected samples, however, the detected concentrations were below the LOQ or below the detection limits with the following exceptions: WGNA-053018-RW-3876 (J6270) – PFHpA and PFOA WGNA-053018-DUP-37 (J6272) – PFHpA and PFOA

Holding Times	Extraction Date(s)	Analysis Date(s)
	6/1/2018	6/12 and 14/2018

QA/QC Summary
Batch 18-0343

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ 1/3 the MRL	No exceedances noted.
	No comments.
Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted.
	No comments.

Matrix Spike (MS) / Duplicate (MSD)	A MS/MSD were prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference was calculated to measure precision.
70-130% of true value, RPD ≤ 30%	No exceedances noted.
	MS/MSD samples were not processed with this batch of field samples.

Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted.
	No comments.

Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICal high and low points RPD ≤20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted.
	No comments.

QA/QC Summary
Batch 18-0343

Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadradic curve fitting.
R^2 >0.99 Target and SIS compounds +/- 30% of true value, Low point 50-150% of true value	No exceedances noted.
	No comments.
Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
Target and SIS compounds +/- 30% of true value	No exceedances noted.
	No comments.

Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
Target and SIS compounds +/- 30% of true value Low point 50-150% of true value	No exceedances noted.
	No comments.

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project Number: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135
Test Code: Master_371

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	0	None
Matrix Spike / Matrix Spike Duplicate Recovery	NA	None
Matrix Spike / Matrix Spike Duplicate Precision	NA	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

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	Naval Air Station Joint Reserve Base Wi	**Data Set Number:**	DP-18-0135
Project Number:	100117920-WE04	**Prep Batch Number:**	18-0343
Entered By:	Denise Schumitz	**Entered On:**	06/15/2018
Test Code (Matrix Type):	Master_371(L)		

Samples that were manually integrated are noted on the quant reports with the comment (TRUE). DMS 6/15/2018

Sample J6264 did not meet the criteria for the internal standard d3-MeFOSAA. This sample was re-aliquoted, run and passes. All analytes for this sample being quantified from d3-MeFOSAA are being reported from 18-0343_D. DMS 6/15/2018

JV64 is not being used in the calibration curve for all analytes in method 18-0343. There is no impact on the data once this point is removed from the calibration. DMS 6/15/2018

JV65 is not being used in the calibration curve for PFHxA and PFOS in method 18-0343. There is no impact on the data. DMS 6/15/2018

JV72 is not being used in the calibration curve for NMeFOSAA, NEtFOSAA, and d5-EtFOSAA in method 18-0343_D. There is no impact on the data once this point is removed from the calibration.
DMS 6/15/2018

JV65, in method 18-0343, has an ion ratio of >50% for PFHpA and NEtFOSAA.
DMS 6/15/2018

CQ870PB, in method 18-0343, has an ion ratio of >50% for PFBS, PFOA,PFDA, NMeFOSAA and NEtFOSAA.
DMS 6/15/2018

J6258, in method 18-0343, has an ion ratio of >50% for NEtFOSAA.
DMS 6/15/2018

J6260, in method 18-0343, has an ion ratio of >50% for PFDoA, PFTrDA, and NMeFOSAA.
DMS 6/15/2018

J6262, in method 18-0343, has an ion ratio of >50% for PFDoA, PFTrDA, and PFTeDA.
DMS 6/15/2018

J6264, in method 18-0343, has an ion ratio of >50% for PFTrDA and PFTeDA.
DMS 6/15/2018

J6266, in method 18-0343, has an ion ratio of >50% for PFTrDA and PFTeDA.
DMS 6/15/2018

J6270, in method 18-0343, has an ion ratio of >50% for PFHpA, PFOA, PFDoA, PFTrDA, and PFTeDA.
DMS 6/15/2018

J6272, in method 18-0343, has an ion ratio of >50% for PFHpA, PFOA, PFDA, PFDoA, PFTrDA, and PFTeDA.
DMS 6/15/2018

J6275, in method 18-0343, has an ion ratio of >50% for PFTrDA and PFTeDA.
DMS 6/15/2018

J6273, J6277, J6279, J6281, J6283, J6285, and J6287 in method 18-0343, have an ion ratio of >50% for PFDoA, PFTrDA and PFTeDA.
DMS 6/15/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.06.18 09:44:21 -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:	J6273-FS-D(3)
Client Sample ID:	NAWC-050318-RW-231
Sample Size:	0.285
Units:	L
Dilution Factor:	20.000
PIV (L):	0.001
Target Analyte:	PFHxS
MRM Transition:	399.0 / 80.0
Data file:	06142018.wiff
Result table:	18-0343_D
Area:	228,605.27
IS Name:	13C4-PFOS
IS Area:	128,628.34
IS Amount (ng/L):	287
y-intercept:	0.000814311
slope:	0.96173

$$\text{Concentration} = \frac{[(228605.27/128628.34) - 0.00081431}{0.96173} * 287 * 0.001 * 20 / 0.285$$

ng/L = 37.20

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135

	CQ870PB-FS (Procedural Blank)	CQ871LCS-FS (Laboratory Control Sample)	J6258-FS (WGNA-052918-RW-3124)	J6260-FS (WGNA-052918-RW-3493)	J6262-FS (WGNA-052918-RW-3882)	J6264-FS (WGNA-052918-RW-3978)
PFHxA	-	L	L	L	L	L
PFHpA	-	L	L	L	L	L
PFOA	-	L	L	L	L	L
PFNA	-	L	L	L	L	L
PFDA	-	L	-	-	-	L
PFUnA	-	L	-	-	-	-
PFDoA	-	L	-	-	-	-
PFTrDA	-	L	-	-	-	-
PFTeDA	-	L	-	-	-	-
NMeFOSAA	-	L	-	-	-	-
NEtFOSAA	-	L	-	-	-	-
PFBS	-	L	L	L	L	L
PFHxS	-	L	L	L	L	L
PFOS	-	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: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135

	J6266-FS (NAWC-052918-RW-161)	J6270-FS (WGNA-053018-RW-3876)	J6272-FS (WGNA-053018-DUP-37)	J6273-FS (NAWC-053018-RW-231)	J6275-FS (WGNA-053018-RW-3933)	J6277-FS (NAWC-053018-RW-164)	J6279-FS (NAWC-053018-RW-292)	J6281-FS (NAWC-053018-RW-271)
PFHxA	L	L	L	L	L	L	L	L
PFHpA	L	L	L	L	L	L	L	L
PFOA	L	L	L	L	L	L	L	L
PFNA	L	L	L	L	L	L	L	L
PFDA	L	-	-	-	-	-	L	-
PFUnA	-	-	-	-	-	-	-	-
PFDoA	-	-	-	-	-	-	-	-
PFTrDA	-	-	-	-	-	-	-	-
PFTeDA	-	-	-	-	-	-	-	-
NMeFOSAA	-	-	-	-	-	-	-	-
NEtFOSAA	-	-	-	-	-	-	-	-
PFBS	L	L	L	L	L	L	L	L
PFHxS	L	L	L	L	L	L	L	L
PFOS	L/Br	L/Br	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: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135

	J6283-FS (NAWC-053018-RW-270)	J6285-FS (NAWC-053018-RW-196)	J6287-FS (NAWC-053018-RW-172)
PFHxA	L	L	L
PFHpA	L	L	L
PFOA	L	L	L
PFNA	L	L	L
PFDA	-	-	-
PFUnA	-	-	-
PFDoA	-	-	-
PFTrDA	-	-	-
PFTeDA	-	-	-
NMeFOSAA	-	-	-
NEtFOSAA	-	-	-
PFBS	L	L	L
PFHxS	L	L	L
PFOS	L/Br	L/Br	L/Br

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

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C4-PFOS	175,225.42	-	
JV66	L3	6/12/18 16:05	13C4-PFOS	156,308.21	-	
JV67	L4	6/12/18 16:14	13C4-PFOS	144,107.35	-	
JV68	L5	6/12/18 16:23	13C4-PFOS	172,723.18	-	
JV69	L6	6/12/18 16:32	13C4-PFOS	171,696.69	-	
JV70	L7	6/12/18 16:40	13C4-PFOS	157,911.70	-	
JV71	L8	6/12/18 16:49	13C4-PFOS	143,877.70	-	
JV72	L9	6/12/18 16:58	13C4-PFOS	178,415.29	1.8	PASS

Average	Lower	Upper
162,533.19	81,266.60	243,799.79

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV65	L2	6/12/18 15:56	13C4-PFOS	175,225.42	81,266.60	243,799.79		120,187.68	240,375.37	
JV66	L3	6/12/18 16:05	13C4-PFOS	156,308.21	81,266.60	243,799.79		120,187.68	240,375.37	
JV67	L4	6/12/18 16:14	13C4-PFOS	144,107.35	81,266.60	243,799.79		120,187.68	240,375.37	
JV68	L5	6/12/18 16:23	13C4-PFOS	172,723.18	81,266.60	243,799.79		120,187.68	240,375.37	
JV69	L6	6/12/18 16:32	13C4-PFOS	171,696.69	81,266.60	243,799.79		120,187.68	240,375.37	
JV70	L7	6/12/18 16:40	13C4-PFOS	157,911.70	81,266.60	243,799.79		120,187.68	240,375.37	
JV71	L8	6/12/18 16:49	13C4-PFOS	143,877.70	81,266.60	243,799.79		120,187.68	240,375.37	
JV72	L9	6/12/18 16:58	13C4-PFOS	178,415.29	81,266.60	243,799.79		120,187.68	240,375.37	
JV63 ICC	ICC	6/12/18 17:07	13C4-PFOS	144,565.71	81,266.60	243,799.79		120,187.68	240,375.37	
CQ870PB-FS(0)	Procedural Blank	6/12/18 17:16	13C4-PFOS	155,430.77	81,266.60	243,799.79		120,187.68	240,375.37	
CQ871LCS-FS(0)	Laboratory Control Sample	6/12/18 17:25	13C4-PFOS	146,577.61	81,266.60	243,799.79		120,187.68	240,375.37	
J6258-FS(0)	WGNA-052918-RW-3124	6/12/18 17:34	13C4-PFOS	157,775.26	81,266.60	243,799.79		120,187.68	240,375.37	
J6260-FS(0)	WGNA-052918-RW-3493	6/12/18 17:43	13C4-PFOS	161,208.59	81,266.60	243,799.79		120,187.68	240,375.37	
J6262-FS(0)	WGNA-052918-RW-3882	6/12/18 17:52	13C4-PFOS	183,824.83	81,266.60	243,799.79		120,187.68	240,375.37	
J6264-FS(0)	WGNA-052918-RW-3978	6/12/18 18:01	13C4-PFOS	122,165.48	81,266.60	243,799.79		120,187.68	240,375.37	
J6266-FS(0)	NAWC-052918-RW-161	6/12/18 18:10	13C4-PFOS	129,333.17	81,266.60	243,799.79		120,187.68	240,375.37	
J6270-FS(0)	WGNA-053018-RW-3876	6/12/18 18:19	13C4-PFOS	157,613.34	81,266.60	243,799.79		120,187.68	240,375.37	
JV69 CCV	CCV	6/12/18 18:27	13C4-PFOS	164,027.66	81,266.60	243,799.79		120,187.68	240,375.37	
J6272-FS(0)	WGNA-053018-DUP-37	6/12/18 18:36	13C4-PFOS	134,976.88	81,266.60	243,799.79		114,819.36	229,638.72	
J6273-FS(0)	NAWC-053018-RW-231	6/12/18 18:45	13C4-PFOS	135,894.71	81,266.60	243,799.79		114,819.36	229,638.72	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C4-PFOS	175,225.42	-	
JV66	L3	6/12/18 16:05	13C4-PFOS	156,308.21	-	
JV67	L4	6/12/18 16:14	13C4-PFOS	144,107.35	-	
JV68	L5	6/12/18 16:23	13C4-PFOS	172,723.18	-	
JV69	L6	6/12/18 16:32	13C4-PFOS	171,696.69	-	
JV70	L7	6/12/18 16:40	13C4-PFOS	157,911.70	-	
JV71	L8	6/12/18 16:49	13C4-PFOS	143,877.70	-	
JV72	L9	6/12/18 16:58	13C4-PFOS	178,415.29	1.8	PASS

Average	Lower	Upper
162,533.19	81,266.60	243,799.79

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6275-FS(0)	WGNA-053018-RW-3933	6/12/18 18:54	13C4-PFOS	166,359.15	81,266.60	243,799.79		114,819.36	229,638.72	
J6277-FS(0)	NAWC-053018-RW-164	6/12/18 19:03	13C4-PFOS	139,897.42	81,266.60	243,799.79		114,819.36	229,638.72	
J6279-FS(0)	NAWC-053018-RW-292	6/12/18 19:12	13C4-PFOS	155,414.60	81,266.60	243,799.79		114,819.36	229,638.72	
J6281-FS(0)	NAWC-053018-RW-271	6/12/18 19:21	13C4-PFOS	152,042.85	81,266.60	243,799.79		114,819.36	229,638.72	
J6283-FS(0)	NAWC-053018-RW-270	6/12/18 19:30	13C4-PFOS	144,534.07	81,266.60	243,799.79		114,819.36	229,638.72	
J6285-FS(0)	NAWC-053018-RW-196	6/12/18 19:39	13C4-PFOS	151,326.78	81,266.60	243,799.79		114,819.36	229,638.72	
J6287-FS(0)	NAWC-053018-RW-172	6/12/18 19:48	13C4-PFOS	161,065.81	81,266.60	243,799.79		114,819.36	229,638.72	
JV70 CCV	CCV	6/12/18 19:57	13C4-PFOS	156,969.18	81,266.60	243,799.79		114,819.36	229,638.72	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C2-PFOA	64,554.53	-	
JV66	L3	6/12/18 16:05	13C2-PFOA	54,463.23	-	
JV67	L4	6/12/18 16:14	13C2-PFOA	54,513.09	-	
JV68	L5	6/12/18 16:23	13C2-PFOA	57,342.63	-	
JV69	L6	6/12/18 16:32	13C2-PFOA	59,704.88	-	
JV70	L7	6/12/18 16:40	13C2-PFOA	55,898.24	-	
JV71	L8	6/12/18 16:49	13C2-PFOA	54,881.78	-	
JV72	L9	6/12/18 16:58	13C2-PFOA	68,255.79	5.6	PASS

Average	Lower	Upper
58,701.77	29,350.89	88,052.66

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV65	L2	6/12/18 15:56	13C2-PFOA	64,554.53	29,350.89	88,052.66		41,793.42	83,586.83	
JV66	L3	6/12/18 16:05	13C2-PFOA	54,463.23	29,350.89	88,052.66		41,793.42	83,586.83	
JV67	L4	6/12/18 16:14	13C2-PFOA	54,513.09	29,350.89	88,052.66		41,793.42	83,586.83	
JV68	L5	6/12/18 16:23	13C2-PFOA	57,342.63	29,350.89	88,052.66		41,793.42	83,586.83	
JV69	L6	6/12/18 16:32	13C2-PFOA	59,704.88	29,350.89	88,052.66		41,793.42	83,586.83	
JV70	L7	6/12/18 16:40	13C2-PFOA	55,898.24	29,350.89	88,052.66		41,793.42	83,586.83	
JV71	L8	6/12/18 16:49	13C2-PFOA	54,881.78	29,350.89	88,052.66		41,793.42	83,586.83	
JV72	L9	6/12/18 16:58	13C2-PFOA	68,255.79	29,350.89	88,052.66		41,793.42	83,586.83	
JV63 ICC	ICC	6/12/18 17:07	13C2-PFOA	51,704.19	29,350.89	88,052.66		41,793.42	83,586.83	
CQ870PB-FS(0)	Procedural Blank	6/12/18 17:16	13C2-PFOA	55,526.05	29,350.89	88,052.66		41,793.42	83,586.83	
CQ871LCS-FS(0)	Laboratory Control Sample	6/12/18 17:25	13C2-PFOA	55,354.18	29,350.89	88,052.66		41,793.42	83,586.83	
J6258-FS(0)	WGNA-052918-RW-3124	6/12/18 17:34	13C2-PFOA	54,433.08	29,350.89	88,052.66		41,793.42	83,586.83	
J6260-FS(0)	WGNA-052918-RW-3493	6/12/18 17:43	13C2-PFOA	52,441.71	29,350.89	88,052.66		41,793.42	83,586.83	
J6262-FS(0)	WGNA-052918-RW-3882	6/12/18 17:52	13C2-PFOA	66,948.59	29,350.89	88,052.66		41,793.42	83,586.83	
J6264-FS(0)	WGNA-052918-RW-3978	6/12/18 18:01	13C2-PFOA	42,085.38	29,350.89	88,052.66		41,793.42	83,586.83	
J6266-FS(0)	NAWC-052918-RW-161	6/12/18 18:10	13C2-PFOA	46,988.17	29,350.89	88,052.66		41,793.42	83,586.83	
J6270-FS(0)	WGNA-053018-RW-3876	6/12/18 18:19	13C2-PFOA	53,326.49	29,350.89	88,052.66		41,793.42	83,586.83	
JV69 CCV	CCV	6/12/18 18:27	13C2-PFOA	59,011.92	29,350.89	88,052.66		41,793.42	83,586.83	
J6272-FS(0)	WGNA-053018-DUP-37	6/12/18 18:36	13C2-PFOA	46,385.06	29,350.89	88,052.66		41,308.34	82,616.69	
J6273-FS(0)	NAWC-053018-RW-231	6/12/18 18:45	13C2-PFOA	52,187.27	29,350.89	88,052.66		41,308.34	82,616.69	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C2-PFOA	64,554.53	-	
JV66	L3	6/12/18 16:05	13C2-PFOA	54,463.23	-	
JV67	L4	6/12/18 16:14	13C2-PFOA	54,513.09	-	
JV68	L5	6/12/18 16:23	13C2-PFOA	57,342.63	-	
JV69	L6	6/12/18 16:32	13C2-PFOA	59,704.88	-	
JV70	L7	6/12/18 16:40	13C2-PFOA	55,898.24	-	
JV71	L8	6/12/18 16:49	13C2-PFOA	54,881.78	-	
JV72	L9	6/12/18 16:58	13C2-PFOA	68,255.79	5.6	PASS

Average	Lower	Upper
58,701.77	29,350.89	88,052.66

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6275-FS(0)	WGNA-053018-RW-3933	6/12/18 18:54	13C2-PFOA	55,544.96	29,350.89	88,052.66		41,308.34	82,616.69	
J6277-FS(0)	NAWC-053018-RW-164	6/12/18 19:03	13C2-PFOA	48,439.85	29,350.89	88,052.66		41,308.34	82,616.69	
J6279-FS(0)	NAWC-053018-RW-292	6/12/18 19:12	13C2-PFOA	53,372.20	29,350.89	88,052.66		41,308.34	82,616.69	
J6281-FS(0)	NAWC-053018-RW-271	6/12/18 19:21	13C2-PFOA	52,163.07	29,350.89	88,052.66		41,308.34	82,616.69	
J6283-FS(0)	NAWC-053018-RW-270	6/12/18 19:30	13C2-PFOA	50,529.43	29,350.89	88,052.66		41,308.34	82,616.69	
J6285-FS(0)	NAWC-053018-RW-196	6/12/18 19:39	13C2-PFOA	51,863.51	29,350.89	88,052.66		41,308.34	82,616.69	
J6287-FS(0)	NAWC-053018-RW-172	6/12/18 19:48	13C2-PFOA	54,098.71	29,350.89	88,052.66		41,308.34	82,616.69	
JV70 CCV	CCV	6/12/18 19:57	13C2-PFOA	56,830.73	29,350.89	88,052.66		41,308.34	82,616.69	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	d3-MeFOSAA	30,047.71	-	
JV66	L3	6/12/18 16:05	d3-MeFOSAA	29,451.11	-	
JV67	L4	6/12/18 16:14	d3-MeFOSAA	28,401.10	-	
JV68	L5	6/12/18 16:23	d3-MeFOSAA	29,501.89	-	
JV69	L6	6/12/18 16:32	d3-MeFOSAA	26,489.77	-	
JV70	L7	6/12/18 16:40	d3-MeFOSAA	28,765.47	-	
JV71	L8	6/12/18 16:49	d3-MeFOSAA	25,759.72	-	
JV72	L9	6/12/18 16:58	d3-MeFOSAA	34,157.92	12.8	PASS

Average	Lower	Upper
29,071.84	14,535.92	43,607.76

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV65	L2	6/12/18 15:56	d3-MeFOSAA	30,047.71	14,535.92	43,607.76		18,542.84	37,085.68	
JV66	L3	6/12/18 16:05	d3-MeFOSAA	29,451.11	14,535.92	43,607.76		18,542.84	37,085.68	
JV67	L4	6/12/18 16:14	d3-MeFOSAA	28,401.10	14,535.92	43,607.76		18,542.84	37,085.68	
JV68	L5	6/12/18 16:23	d3-MeFOSAA	29,501.89	14,535.92	43,607.76		18,542.84	37,085.68	
JV69	L6	6/12/18 16:32	d3-MeFOSAA	26,489.77	14,535.92	43,607.76		18,542.84	37,085.68	
JV70	L7	6/12/18 16:40	d3-MeFOSAA	28,765.47	14,535.92	43,607.76		18,542.84	37,085.68	
JV71	L8	6/12/18 16:49	d3-MeFOSAA	25,759.72	14,535.92	43,607.76		18,542.84	37,085.68	
JV72	L9	6/12/18 16:58	d3-MeFOSAA	34,157.92	14,535.92	43,607.76		18,542.84	37,085.68	
JV63 ICC	ICC	6/12/18 17:07	d3-MeFOSAA	24,696.95	14,535.92	43,607.76		18,542.84	37,085.68	
CQ870PB-FS(0)	Procedural Blank	6/12/18 17:16	d3-MeFOSAA	24,513.53	14,535.92	43,607.76		18,542.84	37,085.68	
CQ871LCS-FS(0)	Laboratory Control Sample	6/12/18 17:25	d3-MeFOSAA	23,938.40	14,535.92	43,607.76		18,542.84	37,085.68	
J6258-FS(0)	WGNA-052918-RW-3124	6/12/18 17:34	d3-MeFOSAA	24,921.35	14,535.92	43,607.76		18,542.84	37,085.68	
J6260-FS(0)	WGNA-052918-RW-3493	6/12/18 17:43	d3-MeFOSAA	25,292.77	14,535.92	43,607.76		18,542.84	37,085.68	
J6262-FS(0)	WGNA-052918-RW-3882	6/12/18 17:52	d3-MeFOSAA	27,867.86	14,535.92	43,607.76		18,542.84	37,085.68	
J6264-FS(0)	WGNA-052918-RW-3978	6/12/18 18:01	d3-MeFOSAA	16,633.31	14,535.92	43,607.76		18,542.84	37,085.68	N 1
J6266-FS(0)	NAWC-052918-RW-161	6/12/18 18:10	d3-MeFOSAA	19,968.15	14,535.92	43,607.76		18,542.84	37,085.68	
J6270-FS(0)	WGNA-053018-RW-3876	6/12/18 18:19	d3-MeFOSAA	23,622.47	14,535.92	43,607.76		18,542.84	37,085.68	
JV69 CCV	CCV	6/12/18 18:27	d3-MeFOSAA	28,673.97	14,535.92	43,607.76		18,542.84	37,085.68	
J6272-FS(0)	WGNA-053018-DUP-37	6/12/18 18:36	d3-MeFOSAA	20,387.57	14,535.92	43,607.76		20,071.78	40,143.56	
J6273-FS(0)	NAWC-053018-RW-231	6/12/18 18:45	d3-MeFOSAA	23,179.84	14,535.92	43,607.76		20,071.78	40,143.56	

1 - sample rerun and reported with dilution method, see miscellaneous documentation for details. JRT 6/21/2018

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	d3-MeFOSAA	30,047.71	-	
JV66	L3	6/12/18 16:05	d3-MeFOSAA	29,451.11	-	
JV67	L4	6/12/18 16:14	d3-MeFOSAA	28,401.10	-	
JV68	L5	6/12/18 16:23	d3-MeFOSAA	29,501.89	-	
JV69	L6	6/12/18 16:32	d3-MeFOSAA	26,489.77	-	
JV70	L7	6/12/18 16:40	d3-MeFOSAA	28,765.47	-	
JV71	L8	6/12/18 16:49	d3-MeFOSAA	25,759.72	-	
JV72	L9	6/12/18 16:58	d3-MeFOSAA	34,157.92	12.8	PASS

Average	Lower	Upper
29,071.84	14,535.92	43,607.76

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6275-FS(0)	WGNA-053018-RW-3933	6/12/18 18:54	d3-MeFOSAA	24,444.25	14,535.92	43,607.76		20,071.78	40,143.56	
J6277-FS(0)	NAWC-053018-RW-164	6/12/18 19:03	d3-MeFOSAA	20,180.76	14,535.92	43,607.76		20,071.78	40,143.56	
J6279-FS(0)	NAWC-053018-RW-292	6/12/18 19:12	d3-MeFOSAA	22,574.43	14,535.92	43,607.76		20,071.78	40,143.56	
J6281-FS(0)	NAWC-053018-RW-271	6/12/18 19:21	d3-MeFOSAA	23,039.11	14,535.92	43,607.76		20,071.78	40,143.56	
J6283-FS(0)	NAWC-053018-RW-270	6/12/18 19:30	d3-MeFOSAA	21,960.54	14,535.92	43,607.76		20,071.78	40,143.56	
J6285-FS(0)	NAWC-053018-RW-196	6/12/18 19:39	d3-MeFOSAA	21,907.00	14,535.92	43,607.76		20,071.78	40,143.56	
J6287-FS(0)	NAWC-053018-RW-172	6/12/18 19:48	d3-MeFOSAA	24,066.54	14,535.92	43,607.76		20,071.78	40,143.56	
JV70 CCV	CCV	6/12/18 19:57	d3-MeFOSAA	26,847.56	14,535.92	43,607.76		20,071.78	40,143.56	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/14/18 17:08	13C4-PFOS	171,472.33	-	
JV66	L3	6/14/18 17:17	13C4-PFOS	175,183.49	-	
JV67	L4	6/14/18 17:26	13C4-PFOS	183,218.28	-	
JV68	L5	6/14/18 17:35	13C4-PFOS	184,815.34	-	
JV69	L6	6/14/18 17:44	13C4-PFOS	190,902.07	-	
JV70	L7	6/14/18 17:53	13C4-PFOS	158,687.91	-	
JV71	L8	6/14/18 18:02	13C4-PFOS	174,160.49	-	
JV72	L9	6/14/18 18:11	13C4-PFOS	186,617.72	8.5	PASS

Average	Lower	Upper
178,132.20	89,066.10	267,198.30

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV64	L1	6/14/18 16:59	13C4-PFOS	173,918.05	89,066.10	267,198.30		122,628.44	245,256.89	
JV65	L2	6/14/18 17:08	13C4-PFOS	171,472.33	89,066.10	267,198.30		122,628.44	245,256.89	
JV66	L3	6/14/18 17:17	13C4-PFOS	175,183.49	89,066.10	267,198.30		122,628.44	245,256.89	
JV67	L4	6/14/18 17:26	13C4-PFOS	183,218.28	89,066.10	267,198.30		122,628.44	245,256.89	
JV68	L5	6/14/18 17:35	13C4-PFOS	184,815.34	89,066.10	267,198.30		122,628.44	245,256.89	
JV69	L6	6/14/18 17:44	13C4-PFOS	190,902.07	89,066.10	267,198.30		122,628.44	245,256.89	
JV70	L7	6/14/18 17:53	13C4-PFOS	158,687.91	89,066.10	267,198.30		122,628.44	245,256.89	
JV71	L8	6/14/18 18:02	13C4-PFOS	174,160.49	89,066.10	267,198.30		122,628.44	245,256.89	
JV72	L9	6/14/18 18:11	13C4-PFOS	186,617.72	89,066.10	267,198.30		122,628.44	245,256.89	
JV63 ICC	ICC	6/14/18 18:20	13C4-PFOS	181,871.52	89,066.10	267,198.30		122,628.44	245,256.89	
J6264-FS(0)	WGNA-052918-RW-3978	6/14/18 19:22	13C4-PFOS	123,093.54	89,066.10	267,198.30		122,628.44	245,256.89	
J6273-FS-D(3)	NAWC-050318-RW-231	6/14/18 20:16	13C4-PFOS	128,628.34	89,066.10	267,198.30		122,628.44	245,256.89	
JV70 CCV	CCV	6/14/18 21:36	13C4-PFOS	185,911.85	89,066.10	267,198.30		122,628.44	245,256.89	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV64	L1	6/14/18 16:59	d3-MeFOSAA	27,400.65	-	
JV65	L2	6/14/18 17:08	d3-MeFOSAA	26,560.24	-	
JV66	L3	6/14/18 17:17	d3-MeFOSAA	26,965.18	-	
JV67	L4	6/14/18 17:26	d3-MeFOSAA	26,904.87	-	
JV68	L5	6/14/18 17:35	d3-MeFOSAA	29,945.65	-	
JV69	L6	6/14/18 17:44	d3-MeFOSAA	31,231.68	-	
JV70	L7	6/14/18 17:53	d3-MeFOSAA	27,896.75	-	
JV71	L8	6/14/18 18:02	d3-MeFOSAA	29,364.62	6.9	PASS

Average	Lower	Upper
28,283.71	14,141.86	42,425.57

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV64	L1	6/14/18 16:59	d3-MeFOSAA	27,400.65	14,141.86	42,425.57		18,875.63	37,751.25	
JV65	L2	6/14/18 17:08	d3-MeFOSAA	26,560.24	14,141.86	42,425.57		18,875.63	37,751.25	
JV66	L3	6/14/18 17:17	d3-MeFOSAA	26,965.18	14,141.86	42,425.57		18,875.63	37,751.25	
JV67	L4	6/14/18 17:26	d3-MeFOSAA	26,904.87	14,141.86	42,425.57		18,875.63	37,751.25	
JV68	L5	6/14/18 17:35	d3-MeFOSAA	29,945.65	14,141.86	42,425.57		18,875.63	37,751.25	
JV69	L6	6/14/18 17:44	d3-MeFOSAA	31,231.68	14,141.86	42,425.57		18,875.63	37,751.25	
JV70	L7	6/14/18 17:53	d3-MeFOSAA	27,896.75	14,141.86	42,425.57		18,875.63	37,751.25	
JV71	L8	6/14/18 18:02	d3-MeFOSAA	29,364.62	14,141.86	42,425.57		18,875.63	37,751.25	
JV72	L9	6/14/18 18:11	d3-MeFOSAA	33,539.90	14,141.86	42,425.57		18,875.63	37,751.25	
JV63 ICC	ICC	6/14/18 18:20	d3-MeFOSAA	29,716.93	14,141.86	42,425.57		18,875.63	37,751.25	
J6264-FS(0)	WGNA-052918-RW-3978	6/14/18 19:22	d3-MeFOSAA	19,049.25	14,141.86	42,425.57		18,875.63	37,751.25	
J6273-FS-D(3)	NAWC-050318-RW-231	6/14/18 20:16	d3-MeFOSAA	21,272.16	14,141.86	42,425.57		18,875.63	37,751.25	
JV70 CCV	CCV	6/14/18 21:36	d3-MeFOSAA	29,545.42	14,141.86	42,425.57		18,875.63	37,751.25	

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Summary Asymmetry Report

Created with Analyst Reporter
Printed: 15/06/2018 10:49:03 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 4:40:56 PM	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.54	1.16	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.83	1.31	0.8 – 1.5

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Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 15/06/2018 10:50:12 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 4:40:56 PM	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.54	25	>10
PFBS_2	298.9 / 99.0	1.53	37	>10
PFHxA_1	313.0 / 269.0	1.83	24	>10
PFHxA_2	313.0 / 119.0	1.83	32	>10
PFHpA_1	363.0 / 319.0	2.20	28	>10
PFHpA_2	363.0 / 169.0	2.20	31	>10
PFHxS_1	399.0 / 80.0	2.22	28	>10
PFHxS_2	399.0 / 99.0	2.22	28	>10
PFOA_1	413.0 / 369.0	2.59	31	>10
PFOA_2	413.0 / 169.0	2.58	36	>10
PFNA_1	463.0 / 419.0	2.96	31	>10
PFNA_2	463.0 / 219.0	2.96	27	>10
PFOS_1	499.0 / 80.0	2.96	29	>10
PFOS_2	499.0 / 99.0	2.96	25	>10
PFDA_1	513.0 / 469.0	3.32	28	>10
PFDA_2	513.0 / 219.0	3.32	23	>10
PFUnA_1	563.0 / 519.0	3.64	32	>10
PFUnA_2	563.0 / 269.0	3.64	27	>10
PFDoA_1	613.0 / 569.0	3.93	32	>10
PFDoA_2	613.0 / 319.0	3.93	35	>10
PFTrDA_1	663.0 / 619.0	4.18	37	>10
PFTrDA_2	663.0 / 169.0	4.18	41	>10
PFTeDA_1	713.0 / 669.0	4.40	56	>10
PFTeDA_2	713.0 / 169.0	4.40	47	>10
NMeFOSAA_1	570.0 / 419.0	3.47	43	>10
NMeFOSAA_2	570.0 / 512.0	3.47	43	>10
NEtFOSAA_1	584.0 / 419.0	3.63	33	>10
NEtFOSAA_2	584.0 / 483.0	3.62	37	>10
13C2-PFHxA	315.0 / 270.0	1.82	34	>10
13C2-PFDA	515.0 / 470.0	3.31	33	>10
d5-EtFOSAA	589.0 / 419.0	3.62	26	>10

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Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 15/06/2018 10:50:48 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 5:53:22 PM	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFOS_1	499.0 / 80.0	2.93	26	>10
PFOS_2	499.0 / 99.0	2.93	27	>10
NMeFOSAA_1	570.0 / 419.0	3.44	40	>10
NMeFOSAA_2	570.0 / 512.0	3.44	38	>10
NEtFOSAA_1	584.0 / 419.0	3.60	37	>10
NEtFOSAA_2	584.0 / 483.0	3.59	46	>10
d5-EtFOSAA	589.0 / 419.0	3.59	33	>10

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Precision and Bias at the LOQ for PFAS in Drinking Water

Analyte	CAS No.	Average (ng/L)	ST DEV	3 Sigma	n
PFHxA	307-24-4	10.85	1.18	3.54	10
PFHpA	375-85-9	11.32	1.25	3.75	10
PFOA	335-67-1	11.36	1.21	3.63	10
PFNA	375-95-1	11.19	1.18	3.54	10
PFDA	335-76-2	11.20	1.25	3.75	10
PFUnA	2058-94-8	11.01	1.52	4.56	10
PFDoA	307-55-1	10.77	1.77	5.31	10
PFTrDA	72629-94-8	10.72	1.69	5.07	10
PFTeDA	376-06-7	11.83	1.43	4.29	10
NMeFOSAA	2355-31-9	10.84	0.95	2.85	10
NEtFOSAA	2991-50-6	10.16	1.00	3.00	10
PFBS	375-73-5	9.01	1.35	4.05	10
PFHxS	355-46-4	10.58	1.28	3.84	10
PFOS	1763-23-1	9.81	1.25	3.75	10

BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

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

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

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

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ID 626 04/18

Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFBS	375-73-5	Target	298.9.0 / 80.0	298.9.0 / 99.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
13C2-PFHxA	NA	SIS	315.0 / 270.0	NA
13C2-PFDA	NA	SIS	515.0 / 470.0	NA
d5-EtFOSAA	NA	SIS	589.0 / 419.0	NA
$^{13}C_2$-PFOA	NA	IS	415.0 / 270.0	NA
$^{13}C_4$-PFOS	NA	IS	503.0 / 80.0	NA
d3-MeFOSAA	NA	IS	573.0 / 419.0	NA

Drinking Water Calibration to Sample Equivalents

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

QTRAP 5500
Preventive Maintenance Checklist

Preventive Maintenance Date:	22-Feb-2017

Request ID:	3683
Company Name:	Battelle Memorial Institute
Instrument ID:	X60666
Instrument Model:	QTRAP 5500
Instrument Serial Number:	AU23051004

☑ **PASS** ☐ **FAIL**

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

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

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

Comments:_____

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

Approved By :_____ **Date:** _____

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PRE PM PPG PERFORMANCE EVALUATION:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.5	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.9	Read Only
☑ CAD Medium	2.4	Read Only
☑ CAD High	3.4	Read Only
☑ CAD 12	3.4	2.4 to 4.5 x10^{-5} Torr

☑ Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification

☑ No degradation or Sensitivity drop

☑ Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification

☑ No degradation or Sensitivity drop

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

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

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

☑ Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: :__19.51%__ (Read Only)

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

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

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

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

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PREVENTIVE MAINTENANCE CHECKLIST:

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

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

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

☑Pump down overnight if possible. ☐ N/A

☑Perform Maintenance on Turbo V source.

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

POST PM PPG PERFORMANCE TESTS:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.8	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	2.1	Read Only
☑ CAD Medium	2.6	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2^{e}6	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0^{e}6	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4^{e}7	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	0.7656	0.6 to 0.8

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

Mass	Q3 Intensity		Q3 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2^{e}6	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0^{e}6	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4^{e}7	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8^{e}7	0.7118	0.6 to 0.8

☑ Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.
Transmission Efficiency: 16.93% (≥ 10.0%)

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.31 e7	≥1.0^{e}7	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	≥4.0^{e}7	0.6740	0.6 to 0.8

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

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10	1.70 e7	≥8.0^{e}6	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	≥4.0^{e}7	0.7292	0.6 to 0.8

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

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

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

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05	8.08 e6	≥7.2 ^{e}6	0.1302	<0.35
ER 922.010	0.05	3.89 e7	≥2.8 ^{e}6	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	≥2.4 ^{e}7	0.3740	<0.65
ER 922.010	0.05	2.37 e8	≥6.8 ^{e}7	0.5407	<0.65

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

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05	1.05 e8	≥4.4 ^{e}7	0.1840	<0.35
ER 601.978	0.05	7.74 e7	≥5.6 ^{e}7	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	≥1.2 ^{e}8	0.4382	<0.65
ER 601.978	0.05	2.55 e8	≥1.6 ^{e}8	0.6205	<0.65

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

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

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

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000	3.2 e7	Contains only 397.2	N/A	N/A
☐ 236 OR ☑ 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10e6

REVIEW:

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

END OF PREVENTIVE MAINTENANCE CHECKLIST

Document history:

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

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Standard Solution Prep Form II

Approved: ☐

Standard Laboratory ID Number: JV35

Description: PFAS - 537.1 Internal Standard Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-01	EPA-537IS	Neat	~2.666666	12/13/22	---	---	1000 uL	1	10	~0.3000

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

Balance ID: _____

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

Approved By: _____ **Date:** _____

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☐

Standard Laboratory ID Number: JV35

Description: PFAS - 537.1 Internal Standard Stock

Stock Id: 180425-01

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

Approved By: _____ **Date:** _____

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☐

Standard Laboratory ID Number: JV37

Description: PFAS - 537.1 Surrogate Standard Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-02	EPA-537SS	Neat	~2.000000	11/08/22	---	---	1000 uL	1	10	~0.2000

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

Balance ID: _____

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

Approved By: _____ **Date:** _____

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☐

Standard Laboratory ID Number: JV37

Description: PFAS - 537.1 Surrogate Standard Stock

Stock Id: 180425-02

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

Approved By: _____ **Date:** _____

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV41

Description: PFAS - 537.1 Second Source LCS/MS Solution

Assigned Lab ID (from receipt log)	Chemical Name:.	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-04	EPA-537PDS-L (second source)	Neat	~2.000000	03/05/23	---	---	500 uL	1	20	~0.0500

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

Balance ID: _____

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

Approved By: Thorn, Jonathan **Date:** 5/3/2018 8:26:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV41

Description: PFAS - 537.1 Second Source LCS/MS Solution

Stock Id: 180425-04

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

Final Concentrations:

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
180425-04	Pipette	B1100330B

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

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

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

Approved By: Thorn, Jonathan **Date:** 5/3/2018 8:26:00 AM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV42

Description: PFAS - 537.1 High ICAL Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-03	EPA-537PDS (calibration)	Neat	~2.000000	03/05/23	---	---	250 uL	1	10	~0.0500

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

Balance ID:

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV42

Description: PFAS - 537.1 High ICAL Stock

Stock Id: 180425-03

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

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

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV43

Description: PFAS - 537.1 Low ICAL Stock

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
180425-03	EPA-537PDS (calibration)	Neat	~2.000000	03/05/23	---	---	250 uL	1	100	~0.0050

Solution Prepared By: Schultz, Stephanie	**Date Prepared:** 5/2/2018	**Expiration Date:**	5/2/2019
Solution Volume 40 mL X 4 Vials	**Refrigerator/Freezer No:** LC Laboratory: Refrigerator - R0107		

Balance ID: _____

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV43

Description: PFAS - 537.1 Low ICAL Stock

Stock Id: 180425-03

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

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

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV59

Description: PFAS - 537.1 Internal Standard Solution

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

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

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

Balance ID:

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

Approved By: Thorn, Jonathan **Date:** 5/3/2018 8:27:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV59

Description: PFAS - 537.1 Internal Standard Solution

Stock Id: JV35

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	500	0.10	---	---	1	25	0.00200
13C4-PFOS	500	0.29	---	---	1	25	0.00574
d3-MeFOSAA	500	0.40	---	---	1	25	0.00800

Final Concentrations:

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV35	Pipette	I0400533B

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

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

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

Approved By: Thorn, Jonathan **Date:** 5/3/2018 8:27:00 AM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV60

Description: PFAS - 537.1 Surrogate Solution

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

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

Balance ID:

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

Approved By: Thorn, Jonathan **Date:** 5/3/2018 8:27:00 AM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV60

Description: PFAS - 537.1 Surrogate Solution

Stock Id: JV37

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

Final Concentrations:

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV37	Pipette	I0400533B

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

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

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

Approved By: Thorn, Jonathan **Date:** 5/3/2018 8:27:00 AM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **JV61**

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

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

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

Balance ID: _____

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV61

Description: PFAS - 537.1 Internal Standard Calibration Stock Solution

Stock Id: JV35

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV62

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

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

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

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

Balance ID:

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV62

Description: PFAS - 537.1 Surrogate Calibration Stock Solution

Stock Id: JV37

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

Final Concentrations:

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

Syringes/Pipettes:

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

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

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

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

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV63

Description: PFAS - 537.1 ICC

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV41	PFAS - 537.1 Second Source LCS/MS Solution	Solution	~0	05/02/19	---	---	200 uL	1	10	~0.0000
JV59	PFAS - 537.1 Internal Standard Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV60	PFAS - 537.1 Surrogate Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID:

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV63

Description: PFAS - 537.1 ICC

Stock Id: JV41

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

Stock Id: JV59

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	50	0.00	---	---	1	10	0.00001
13C4-PFOS	50	0.01	---	---	1	10	0.00003
d3-MeFOSAA	50	0.01	---	---	1	10	0.00004

Stock Id: JV60

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	50	0.00	---	---	1	10	0.00001
13C2-PFHxA	50	0.00	---	---	1	10	0.00001
d5-EtFOSAA	50	0.01	---	---	1	10	0.00004

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.00001
13C2-PFHxA	.00001
13C2-PFOA	.00001
13C4-PFOS	.00003
d3-MeFOSAA	.00004
d5-EtFOSAA	.00004

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

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

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV63

Description: PFAS - 537.1 ICC

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV41	Pipette	G0792979B
JV59	Pipette	I0793912B
JV60	Pipette	I0793912B

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

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

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

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

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It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV64

Description: PFAS - 537.1 ICAL 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)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID: _____

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV64

Description: PFAS - 537.1 ICAL L1

Stock Id: JV43

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	50	0.01	---	---	1	10	0.00003
N-methylperfluoro-1-octanesulfonamidoacetic acid	50	0.01	---	---	1	10	0.00003
Perfluoro-1-butanesulfonate	50	0.00	---	---	1	10	0.00002
Perfluoro-1-hexanesulfonate	50	0.00	---	---	1	10	0.00002
Perfluoro-1-octanesulfonate	50	0.00	---	---	1	10	0.00002
Perfluoro-n-decanoic Acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-dodecanoic acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-heptanoic Acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-hexanoic acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-nonanoic Acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-octanoic Acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-tetradecanoic acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-tridecanoic acid	50	0.01	---	---	1	10	0.00003
Perfluoro-n-undecanoic acid	50	0.01	---	---	1	10	0.00003

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **JV64**

Description: PFAS - 537.1 ICAL L1

N-ethylperfluoro-octanesulfonamidoacetic acid	.00003
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00003
Perfluoro-1-butanesulfonate	.00002
Perfluoro-1-hexanesulfonate	.00002
Perfluoro-1-octanesulfonate	.00002
Perfluoro-n-decanoic Acid	.00003
Perfluoro-n-dodecanoic acid	.00003
Perfluoro-n-heptanoic Acid	.00003
Perfluoro-n-hexanoic acid	.00003
Perfluoro-n-nonanoic Acid	.00003
Perfluoro-n-octanoic Acid	.00003
Perfluoro-n-tetradecanoic acid	.00003
Perfluoro-n-tridecanoic acid	.00003
Perfluoro-n-undecanoic acid	.00003

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV43	Pipette	I0793912B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

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It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **JV65**

Description: PFAS - 537.1 ICAL 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)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	100 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID: _____

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV65

Description: PFAS - 537.1 ICAL L2

Stock Id: JV43

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
N-ethylperfluoro-octanesulfonamidoacetic acid	100	0.01	---	---	1	10	0.00005
N-methylperfluoro-1-octanesulfonamidoacetic acid	100	0.01	---	---	1	10	0.00005
Perfluoro-1-butanesulfonate	100	0.00	---	---	1	10	0.00004
Perfluoro-1-hexanesulfonate	100	0.00	---	---	1	10	0.00005
Perfluoro-1-octanesulfonate	100	0.00	---	---	1	10	0.00005
Perfluoro-n-decanoic Acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-dodecanoic acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-heptanoic Acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-hexanoic acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-nonanoic Acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-octanoic Acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-tetradecanoic acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-tridecanoic acid	100	0.01	---	---	1	10	0.00005
Perfluoro-n-undecanoic acid	100	0.01	---	---	1	10	0.00005

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

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It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **JV65**

Description: PFAS - 537.1 ICAL L2

N-ethylperfluoro-octanesulfonamidoacetic acid	.00005
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00005
Perfluoro-1-butanesulfonate	.00004
Perfluoro-1-hexanesulfonate	.00005
Perfluoro-1-octanesulfonate	.00005
Perfluoro-n-decanoic Acid	.00005
Perfluoro-n-dodecanoic acid	.00005
Perfluoro-n-heptanoic Acid	.00005
Perfluoro-n-hexanoic acid	.00005
Perfluoro-n-nonanoic Acid	.00005
Perfluoro-n-octanoic Acid	.00005
Perfluoro-n-tetradecanoic acid	.00005
Perfluoro-n-tridecanoic acid	.00005
Perfluoro-n-undecanoic acid	.00005

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV43	Pipette	I0793912B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

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It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: **JV66**

Description: PFAS - 537.1 ICAL L3

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	200 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID:

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

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It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV66

Description: PFAS - 537.1 ICAL L3

Stock Id: JV43

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

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It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV66

Description: PFAS - 537.1 ICAL L3

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV43	Pipette	G0792979B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV67

Description: PFAS - 537.1 ICAL L4

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	500 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID:

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV67

Description: PFAS - 537.1 ICAL L4

Stock Id: JV43

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV67

Description: PFAS - 537.1 ICAL L4

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV43	Pipette	I0400533B
JV61	Pipette	D1075429B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV68

Description: PFAS - 537.1 ICAL L5

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV43	PFAS - 537.1 Low ICAL Stock	Solution	~0	05/02/19	---	---	1000 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID:

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV68

Description: PFAS - 537.1 ICAL L5

Stock Id: JV43

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **JV68**

Description: PFAS - 537.1 ICAL L5

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV43	Pipette	I0400533B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV69

Description: PFAS - 537.1 ICAL L6

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV42	PFAS - 537.1 High ICAL Stock	Solution	~0	05/02/19	---	---	200 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID: _____

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV69

Description: PFAS - 537.1 ICAL L6

Stock Id: JV42

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: **JV69**

Description: PFAS - 537.1 ICAL L6

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV42	Pipette	G0792979B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV70

Description: PFAS - 537.1 ICAL L7

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV42	PFAS - 537.1 High ICAL Stock	Solution	~0	05/02/19	---	---	500 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID: _____

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV70

Description: PFAS - 537.1 ICAL L7

Stock Id: JV42

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV70

Description: PFAS - 537.1 ICAL L7

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV42	Pipette	I0400533B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV71

Description: PFAS - 537.1 ICAL L8

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV42	PFAS - 537.1 High ICAL Stock	Solution	~0	05/02/19	---	---	1000 uL	1	10	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	50 uL	1	10	~0.0000

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

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

Balance ID:

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV71

Description: PFAS - 537.1 ICAL L8

Stock Id: JV42

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV71

Description: PFAS - 537.1 ICAL L8

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV42	Pipette	I0400533B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

Approved By: Schumitz, Denise **Date:** 5/3/2018 3:22:00 PM

BATTELLE

It can be done

Standard Solution Prep Form II

Approved: ☑

Standard Laboratory ID Number: JV72

Description: PFAS - 537.1 ICAL L9

Assigned Lab ID (from receipt log)	Chemical Name:	Source	Stock (ug/mL)	Expir. Date	Purity (%)	Density (g/mL)	Amount Taken	Conv. Fact.	Final Vol. (mL)	Std. Conc. (ug/mL)
JV42	PFAS - 537.1 High ICAL Stock	Solution	~0	05/02/19	---	---	1000 uL	1	5	~0.0000
JV61	PFAS - 537.1 Internal Standard Calibration Stock Solution	Solution	~0	05/02/19	---	---	25 uL	1	5	~0.0000
JV62	PFAS - 537.1 Surrogate Calibration Stock Solution	Solution	~0	05/02/19	---	---	25 uL	1	5	~0.0000

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

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

Balance ID: _____

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV72

Description: PFAS - 537.1 ICAL L9

Stock Id: JV42

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

Stock Id: JV61

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

Stock Id: JV62

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

Final Concentrations:

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

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

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

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

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

BATTELLE

It can be done

Standard Solution Concentrations

Approved: ☑

Standard Laboratory ID Number: JV72

Description: PFAS - 537.1 ICAL L9

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

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
JV42	Pipette	I0400533B
JV61	Pipette	I0793912B
JV62	Pipette	I0793912B

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

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

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

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

BATTELLE
It can be done

BDO Id: 180425-01

Reagent Receipt Report

Approved: ☐ **Authorized** ☐

Name: EPA-537IS
Vendor: Wellington Laboratories
Catalogue No: EPA-537IS
Type: Solution
Lot No: 537IS1217
Quantity: 1 ea mL
% Moisture:
Description: EPA-537IS

Received: 4/25/2018
Custodian: Schumitz, Matt
Expires: 12/13/2022
Consumed:
Stored In: AqChem Laboratory - R0124

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

Total Analytes: 3

Notes:

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-537IS

Internal Standard
Primary Dilution Standard

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

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HAZARDS:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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. A 1226

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

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

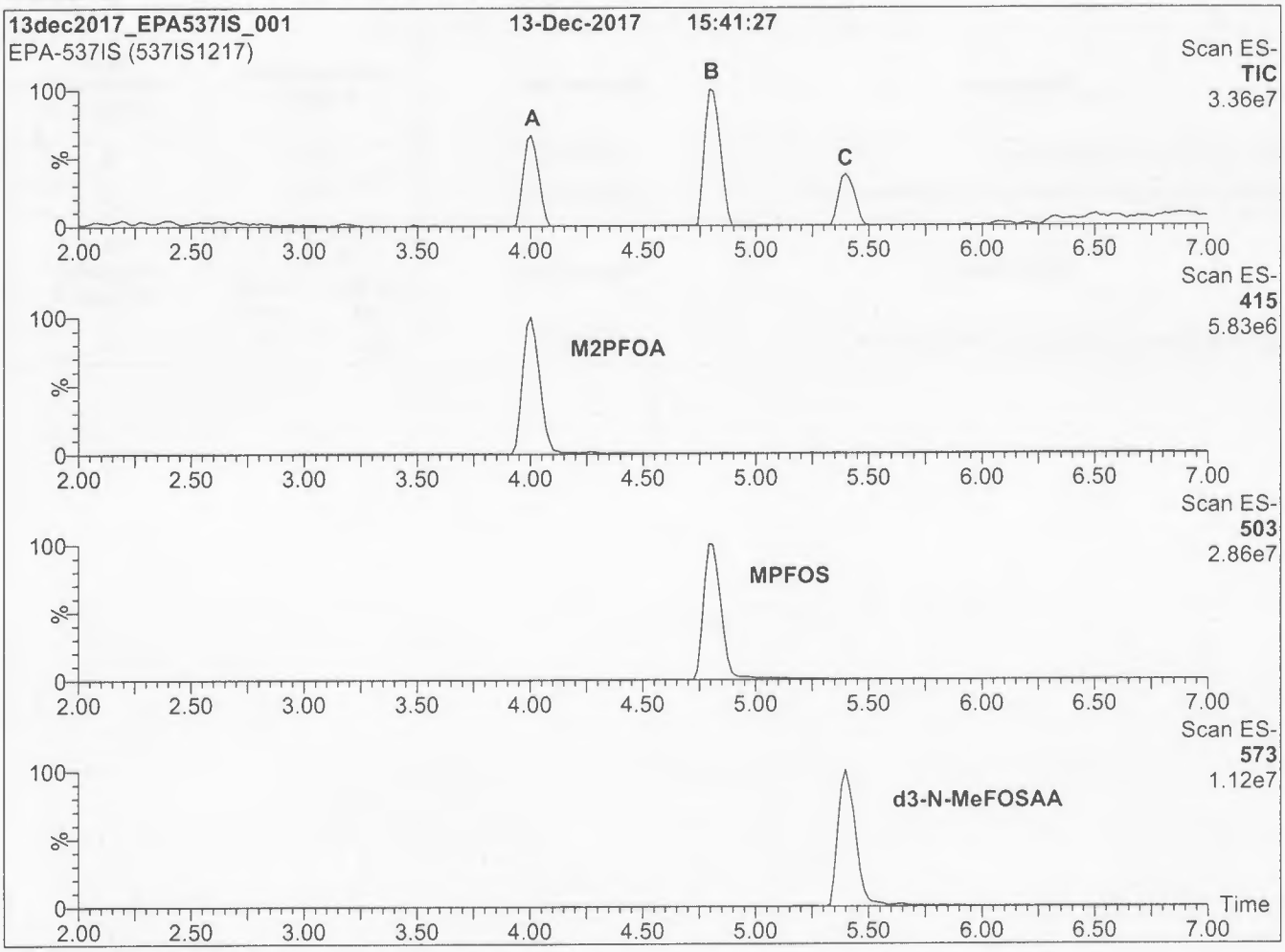
Table A: **EPA-537IS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

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

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

B.G. Chittim, General Manager

Figure 1: **EPA-537IS; LC/MS Data (Total Ion Current Chromatogram)**



Conditions for Figure 1:

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

Chromatographic Conditions

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

Mobile phase: Gradient
Start: 40% (80:20 MeOH:ACN) / 60% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min
and hold for 2 min before returning
to initial conditions in 0.5 min.
Time: 10 min

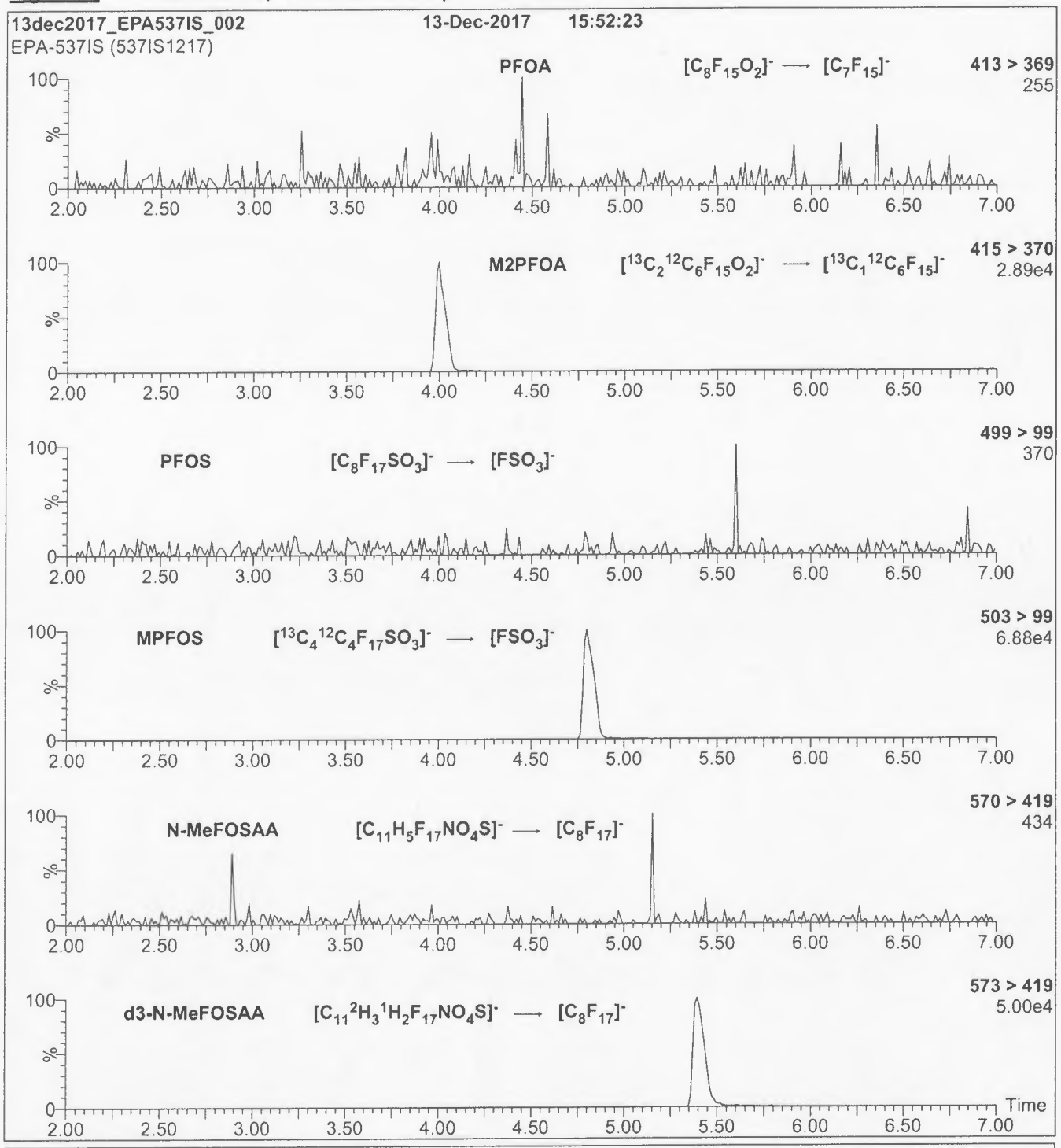
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (EPA-537IS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.28e-3

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

BATTELLE
It can be done

BDO Id: 180425-02

Reagent Receipt Report

Approved: ☑ **Authorized** ☐

Name: EPA-537SS
Vendor: Wellington Laboratories
Catalogue No: EPA-537SS
Type: Solution
Lot No: 537SS1117
Quantity: 1 ea ml
% Moisture:
Description: EPA-537SS

Received: 4/25/2018
Custodian: Schumitz, Matt
Expires: 11/8/2022
Consumed:
Stored In: AgChem Laboratory - R0124

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

Total Analytes: 3

Notes:

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-537SS

Surrogate Primary Dilution Standard

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

DESCRIPTION:

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

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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INTENDED USE:

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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 17034 REFERENCE MATERIAL PRODUCER

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

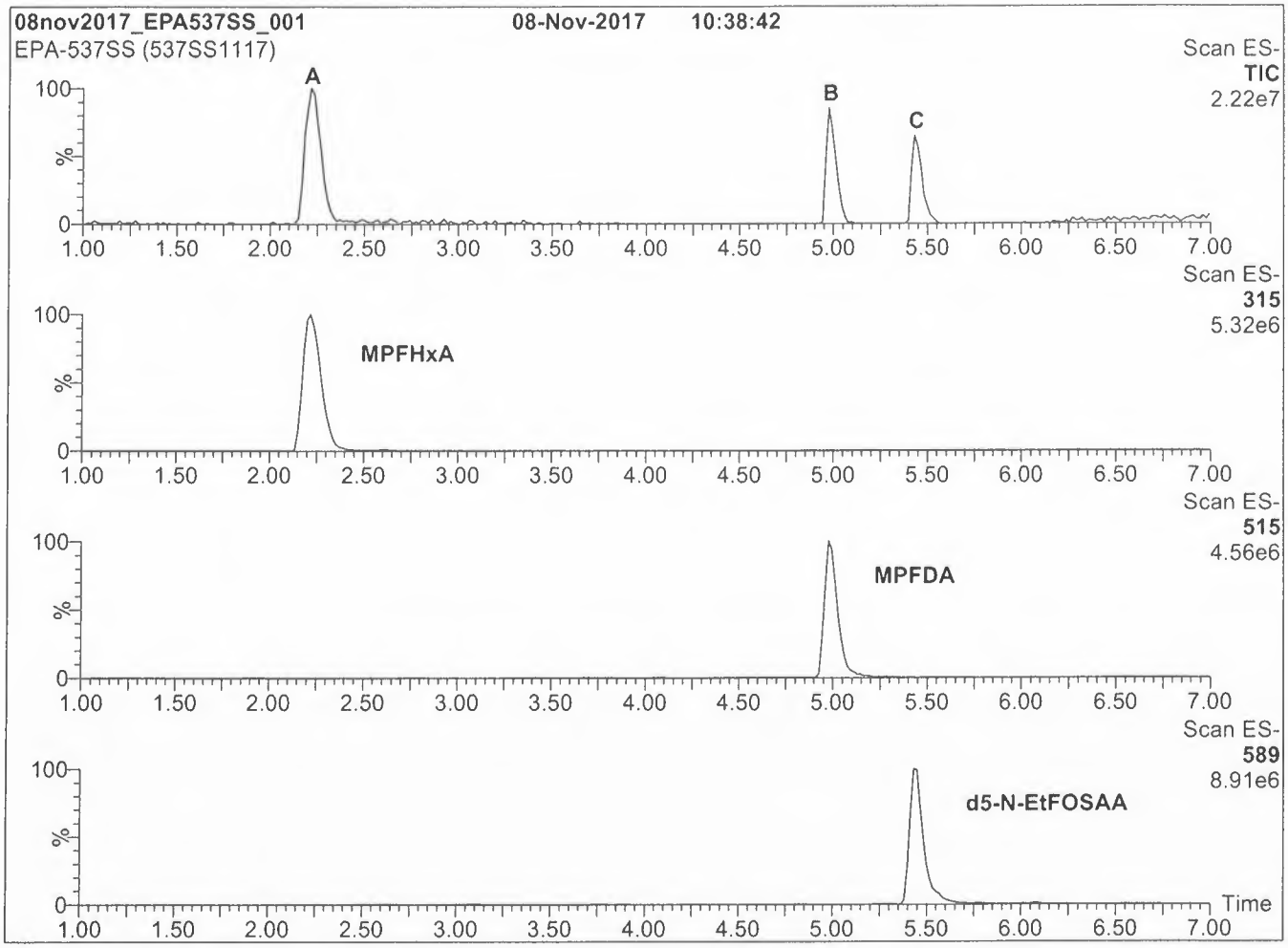
Table A: **EPA-537SS; Components and Concentrations (ng/ml; ± 5% in Methanol / Water (<1%))**

Compound	Abbreviation	Concentration (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid	MPFHxA	1000	A
Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid	MPFDA	1000	B
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	4000	C

Certified By: _____ **Date:** 11/13/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: EPA-537SS; LC/MS Data (Total Ion Current Chromatogram)



Conditions for Figure 1:

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

Chromatographic Conditions

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

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

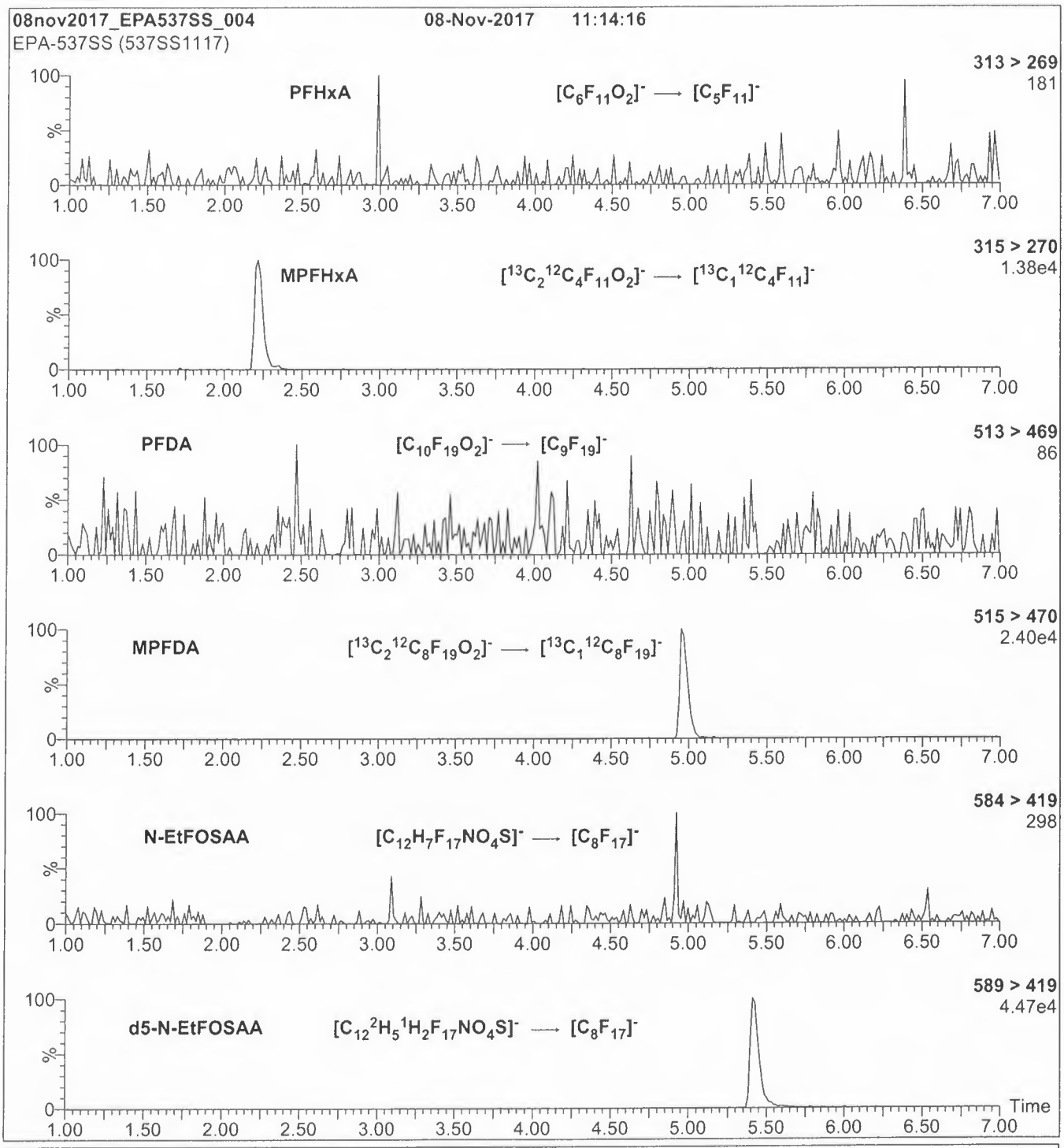
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (EPA-537SS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.50e-3

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

BATTELLE
It can be done

BDO Id: 180425-03

Reagent Receipt Report

Approved: ☑ **Authorized** ☐

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

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

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

Total Analytes: 14

Notes:

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

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-537PDS

Native PFAS Primary Dilution Standard Solution/Mixture

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

for calibration
JNT 5/2/2018

DESCRIPTION:

EPA-537PDS is a solution/mixture of nine native linear perfluoroalkylcarboxylic acids (C_6-C_{14}), three native perfluoroalkylsulfonates (C_4 linear; C_6 and C_8 linear and branched), and two native perfluorooctanesulfonamidoacetic acids (linear and branched). The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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 ISO 17034 REFERENCE MATERIAL PRODUCER

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

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

Compound	Abbreviation	Concentration * (ng/ml)	Peak Assignment in Figure 1
Perfluoro-n-hexanoic acid ✓	PFHxA	2000	B
Perfluoro-n-heptanoic acid ✓	PFHpA	2000	C
Perfluoro-n-octanoic acid ✓	PFOA	2000	F
Perfluoro-n-nonanoic acid ✓	PFNA	2000	G
Perfluoro-n-decanoic acid ✓	PFDA	2000	J
Perfluoro-n-undecanoic acid ✓	PFUdA	2000	O
Perfluoro-n-dodecanoic acid ✓	PFDoA	2000	P
Perfluoro-n-tridecanoic acid ✓	PFTrDA	2000	Q
Perfluoro-n-tetradecanoic acid ✓	PFTeDA	2000	R
N-methylperfluorooctanesulfonamidoacetic acid [a] ✓	N-MeFOSAA: linear isomer ✓	1520	L
	N-MeFOSAA: ∑ branched isomers	480	K
N-ethylperfluorooctanesulfonamidoacetic acid [b] ✓	N-EtFOSAA: linear isomer ✓	1550	N
	N-EtFOSAA: ∑ branched isomers	450	M

Compound	Abbreviation	Concentration * (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Potassium perfluoro-1-butanesulfonate ✓	L-PFBS ✓	2000	1770	A
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	1620	1480	E
	PFHxSK: ∑ branched isomers	378	344	D
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	1580	1460	I
	PFOSK: ∑ branched isomers	422	391	H

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Table B: **N-MeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

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

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

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

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)_2CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

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

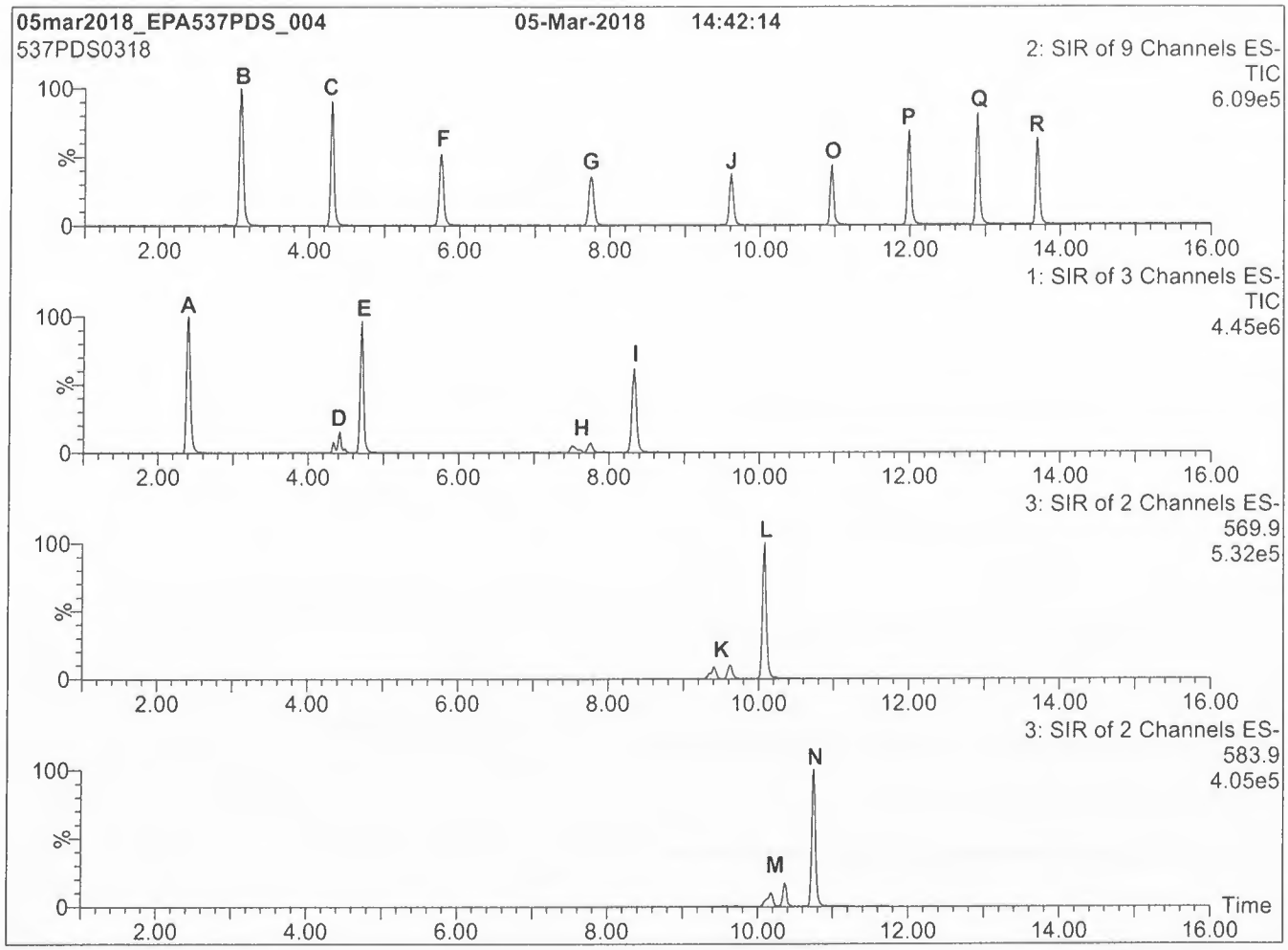
Table E: **PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)_2CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)_2CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

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

Certified By: _____ **Date:** 04/02/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: EPA-537PDS; LC/MS Data (SIR)



Conditions for Figure 1:

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

Chromatographic Conditions

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

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

Flow: 300 µl/min

MS Parameters

Experiment: SIR

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

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

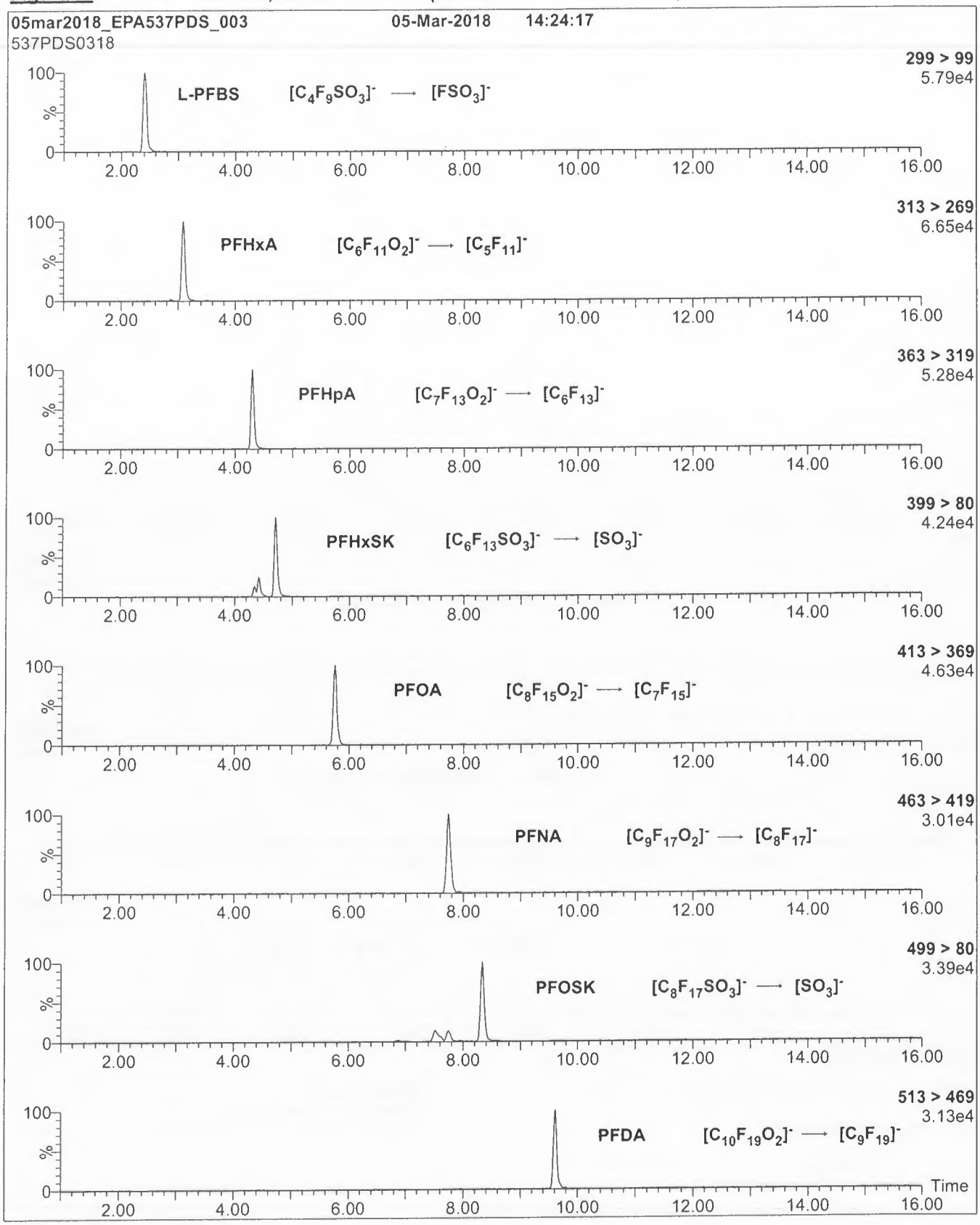
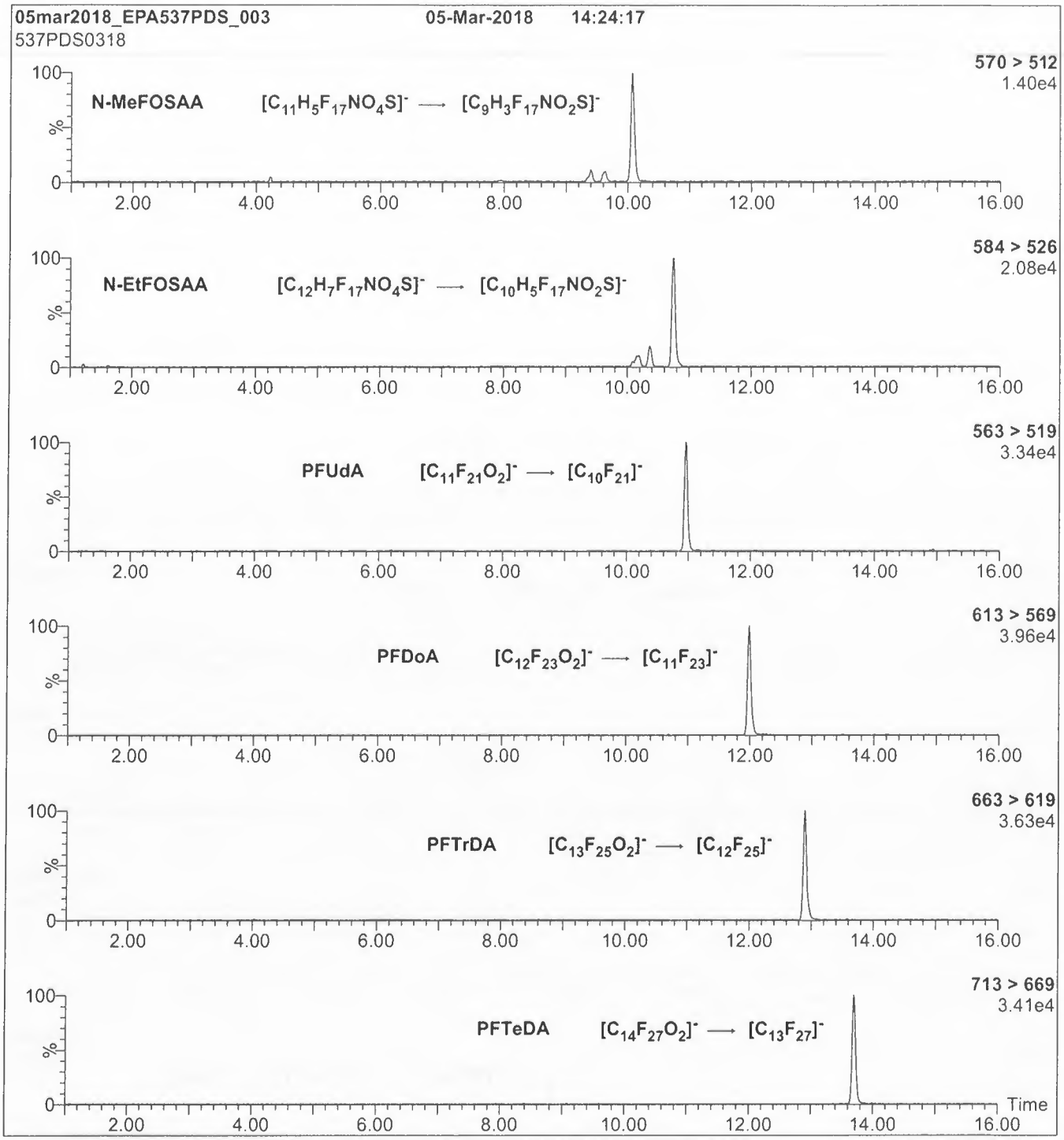


Figure 2: EPA-537PDS; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (EPA-537PDS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.10e-3

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

BATTELLE
It can be done

BDO Id: 180425-04

Reagent Receipt Report

Approved: ☐ **Authorized** ☐

Name: EPA-537PDS-L (second source)
Vendor: Wellington Laboratories
Catalogue No: EPA-537PDS-L
Type: Solution
Lot No: 537PDSL0318
Quantity: 1 ea ml **% Moisture:**
Description: EPA-537PDS-L

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

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	2.0000	100.00	--	--	☐			
N-methylperfluoro-1-octanesulfonami	2355-31-9	2.0000	100.00	--	--	☐			
Perfluoro-1-butanesulfonic Acid	375-73-5	2.0000	100.00	--	--	☐			1
Perfluoro-n-decanoic Acid	335-76-2	2.0000	100.00	--	--	☐			
Perfluoro-n-dodecanoic acid	307-55-1	2.0000	100.00	--	--	☐			
Perfluoro-n-heptanoic Acid	375-85-9	2.0000	100.00	--	--	☐			
Perfluoro-n-hexanoic acid	307-24-4	2.0000	100.00	--	--	☐			
Perfluoro-n-octanoic Acid	335-67-1	2.0000	100.00	--	--	☐			
Perfluorononanoic Acid	375-95-1	2.0000	100.00	--	--	☐			
Perfluoro-n-tetradecanoic acid	376-06-7	2.0000	100.00	--	--	☐			
Perfluoro-n-tridecanoic acid	72629-94-8	2.0000	100.00	--	--	☐			
Perfluoro-n-undecanoic acid	2058-94-8	2.0000	100.00	--	--	☐			
Sodium perfluoro-1-hexanesulfonate	82382-12-5	1.8900	100.00	--	--	☐			2
Sodium perfluoro-1-octanesulfonate	4021-47-0	1.9100	100.00	--	--	☐			3

Total Analytes: 14

Notes:

	Analyte:	Comment:
1	Perfluoro-1-butanesulfonic Acid	2000 ng/ml as the salt, 1770 ng/ml as the anion
2	Sodium perfluoro-1-hexanesulfonate	2000 ng/ml as the salt, 1890 ng/ml as the anion
3	Sodium perfluoro-1-octanesulfonate	2000 ng/ml as the salt, 1910 ng/ml as the anion

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-537PDS-L

Native PFAS Linear Primary Dilution Standard Solution/Mixture

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

DESCRIPTION:

EPA-537PDS-L is a solution/mixture of native linear perfluoroalkylcarboxylic acids (C_6-C_{14}), native linear perfluoroalkylsulfonates (C_4, C_6, and C_8), and native linear perfluorooctanesulfonamidoacetic acids. The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

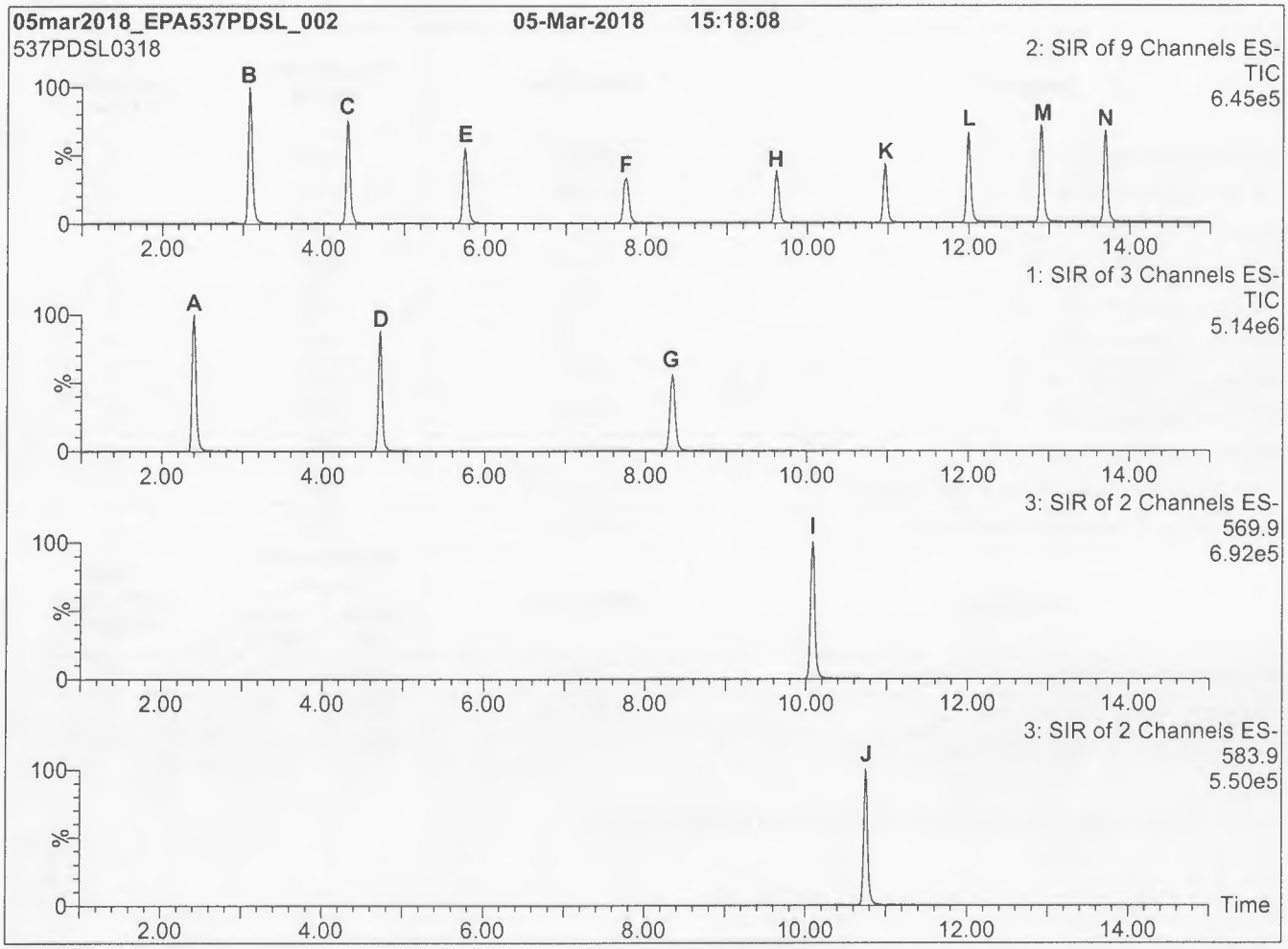
Compound	Abbreviation	Concentration * (ng/ml)		Peak Assignment in Figure 1
Perfluoro-n-hexanoic acid ✓	PFHxA	2000		B
Perfluoro-n-heptanoic acid ✓	PFHpA	2000		C
Perfluoro-n-octanoic acid ✓	PFOA	2000		E
Perfluoro-n-nonanoic acid ✓	PFNA	2000		F
Perfluoro-n-decanoic acid ✓	PFDA	2000		H
Perfluoro-n-undecanoic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

* Concentrations have been rounded to three significant figures.

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

B.G. Chittim, General Manager

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



Conditions for Figure 1:

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

Chromatographic Conditions

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

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

Flow: 300 µl/min

MS Parameters

Experiment: SIR

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

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

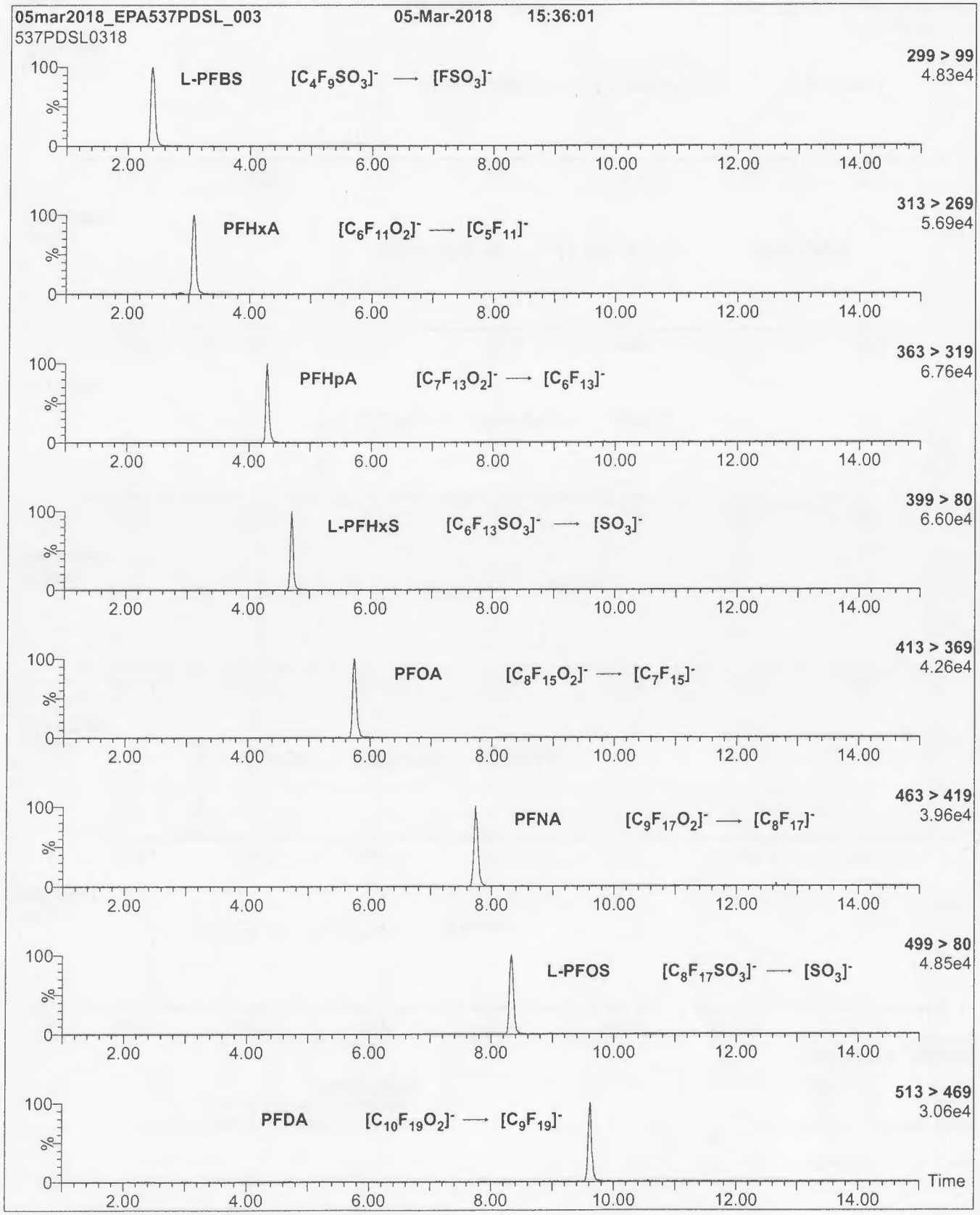
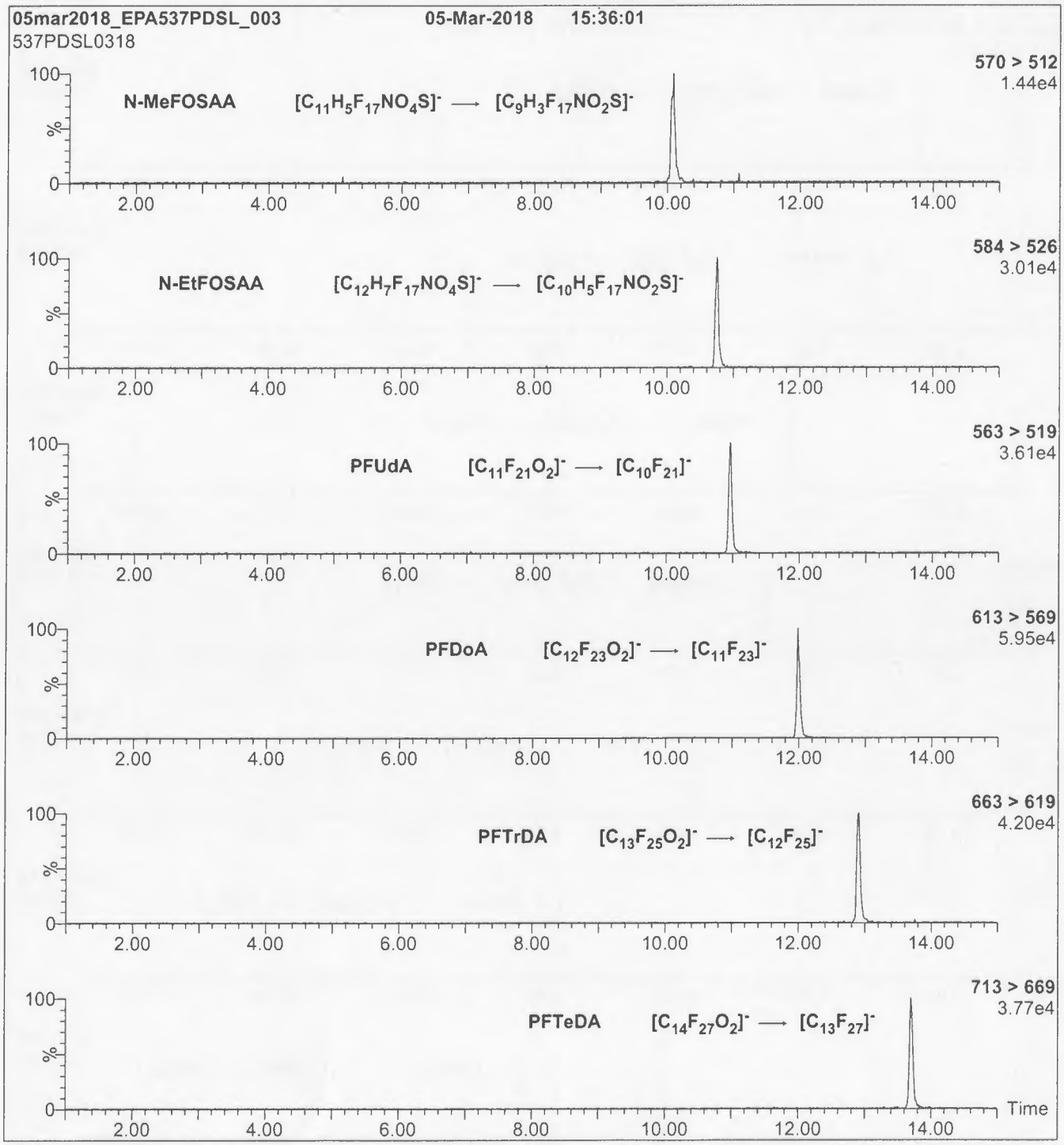


Figure 2: EPA-537PDS-L; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

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

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.17e-3

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

Sample Preparation

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It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	**Project No.(s)**
Naval Air Station Joint Reserve Base Willow Grove, PA	100117920-WE04

18-0343

WE04 PFAS Analysis

DW

SOP Numbers (see workplan for modifications)

VOASOP No. 5-371

This Batch Contains The Following Samples:		
CQ870PB-FS	J6266-FS	J6279-FS
CQ871LCS-FS	J6270-FS	J6281-FS
J6258-FS	J6272-FS	J6283-FS
J6260-FS	J6273-FS	J6285-FS
J6262-FS	J6275-FS	J6287-FS
J6264-FS	J6277-FS	

Laboratory Preparation Records

COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	06/11/2018	DMS

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BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)	**Project No.(s)**
Naval Air Station Joint Reserve Base Willow Grove, PA	100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Sample ID	Description
CQ870PB-FS	Procedural Blank
CQ871LCS-FS	Laboratory Control Sample
J6258-FS	WGNA-052918-RW-3124
J6260-FS	WGNA-052918-RW-3493
J6262-FS	WGNA-052918-RW-3882
J6264-FS	WGNA-052918-RW-3978
J6266-FS	NAWC-052918-RW-161
J6270-FS	WGNA-053018-RW-3876
J6272-FS	WGNA-053018-DUP-37
J6273-FS	NAWC-053018-RW-231
J6275-FS	WGNA-053018-RW-3933
J6277-FS	NAWC-053018-RW-164
J6279-FS	NAWC-053018-RW-292
J6281-FS	NAWC-053018-RW-271
J6283-FS	NAWC-053018-RW-270
J6285-FS	NAWC-053018-RW-196
J6287-FS	NAWC-053018-RW-172

Samples Assigned By: Stephanie Schultz Date : June 11, 2018

Comments:

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE CUSTODY LOG

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

Requested On/By:	06/01/2018 SAS	**Purpose:**	Sample Preparation
Relinquished On/By:	06/01/2018 SAS	**Last Activity:**	Transfer

Accepted On/By:	06/01/2018 SAS	**Returned On/To:**	
Stored In Facility:	Sample Preparation	**Returned To Facility:**	
Stored Until	06/01/2018		
Stored Comment:	NA	**Returned Comment:**	NA

No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	J6258	1	C	Consumed	NA
2	J6260	1	C	Consumed	NA
3	J6262	1	C	Consumed	NA
4	J6264	1	C	Consumed	NA
5	J6266	1	C	Consumed	NA
6	J6270	1	C	Consumed	NA
7	J6272	1	C	Consumed	NA
8	J6273	1	C	Consumed	NA
9	J6275	1	C	Consumed	NA
10	J6277	1	C	Consumed	NA
11	J6279	1	C	Consumed	NA
12	J6281	1	C	Consumed	NA
13	J6283	1	C	Consumed	NA
14	J6285	1	C	Consumed	NA
15	J6287	1	C	Consumed	NA

Total Samples 15 * "C" = Consumed Container

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It can be done

BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CQ870PB-FS	Procedural Blank	250.0	NA	--	06/01/18 SAS
CQ871LCS-FS	Laboratory Control Sample	250.0	NA	--	06/01/18 SAS
J6258-FS	WGNA-052918-RW-3124	260.0	1	C	06/04/18 SAS
J6260-FS	WGNA-052918-RW-3493	275.0	1	C	06/04/18 SAS
J6262-FS	WGNA-052918-RW-3882	290.0	1	C	06/04/18 SAS
J6264-FS	WGNA-052918-RW-3978	270.0	1	C	06/04/18 SAS
J6266-FS	NAWC-052918-RW-161	290.0	1	C	06/04/18 SAS
J6270-FS	WGNA-053018-RW-3876	275.0	1	C	06/04/18 SAS
J6272-FS	WGNA-053018-DUP-37	275.0	1	C	06/04/18 SAS
J6273-FS	NAWC-053018-RW-231	285.0	1	C	06/04/18 SAS
J6275-FS	WGNA-053018-RW-3933	285.0	1	C	06/04/18 SAS
J6277-FS	NAWC-053018-RW-164	270.0	1	C	06/04/18 SAS
J6279-FS	NAWC-053018-RW-292	285.0	1	C	06/04/18 SAS
J6281-FS	NAWC-053018-RW-271	275.0	1	C	06/04/18 SAS
J6283-FS	NAWC-053018-RW-270	275.0	1	C	06/04/18 SAS
J6285-FS	NAWC-053018-RW-196	275.0	1	C	06/04/18 SAS
J6287-FS	NAWC-053018-RW-172	270.0	1	C	06/04/18 SAS

Comments:

Sample ID:	Comments:
CQ870PB-FS	1.24g Trizma(180502-01) weighed on BAL-009
CQ871LCS-FS	1.27g Trizma(180502-01) weighed on BAL-009

Samples Assigned By Stephanie Schultz Date : June 11, 2018

* - "C" = Sample is Consumed

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BATTELLE - NORWELL OPERATIONS
SURROGATE SPIKE FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
CQ870PB-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
CQ871LCS-FS	JV41	LCS/MS	1	150	06/01/18 SAS	JCT	NA
CQ871LCS-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6258-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6260-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6262-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6264-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6266-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6270-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6272-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6273-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6275-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6277-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6279-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6281-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6283-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6285-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA
J6287-FS	JV60	SIS	1	50	06/01/18 SAS	JCT	NA

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JV41	Pipette	B1100287B
JV60	Pipette	D1075429B

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BATTELLE - NORWELL OPERATIONS
SAMPLE EXTRACTION FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
CQ870PB-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
CQ871LCS-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6258-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6260-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6262-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6264-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6266-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6270-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6272-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6273-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6275-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6277-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6279-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6281-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6283-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6285-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA
J6287-FS	06/01/18 SAS	NA	NA	NA	NA	NA	NA	NA

Solvents/Reagent Preparations:

Name	ID	Expires	Lot No	Procedure	Comments
Pre-packed SPE Column	RP-180601-5	06/01/18	S214-0071/S18-002403	Pre-packed SPE Column	

Solvents/Reagents:

Name	Lot No	Comments
Methanol (180409-02)	177965	

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BATTELLE - NORWELL OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

(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
CQ870PB-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
CQ871LCS-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6258-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6260-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6262-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6264-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6266-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6270-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6272-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6273-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6273-FS-D(3)	952	48	JV59	50.5	1	1000	20.000	06/14/18 DMS	SAS
J6275-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6277-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6279-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6281-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6283-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6285-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6287-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR

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

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

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BATTELLE - NORWELL OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

(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

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
JV59	Pipette	I0793912B

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

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

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PREPARATION EXTRACT SPLIT FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
CQ870PB-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
CQ871LCS-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6258-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6260-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6262-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6264-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6266-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6270-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6272-FS	0	--	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6273-FS	0	C	6/1/2018 9:59:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6273-FS	2	--	6/14/2018 11:13:00 AM	J6273-FS	0	1000	950	1.053	1.053	06/14/18 DMS
J6273-FS-D	3	--	6/14/2018 11:13:00 AM	J6273-FS	0	1000	50	20.000	20.000	06/14/18 DMS
J6275-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6277-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 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 - NORWELL OPERATIONS
PREPARATION EXTRACT SPLIT FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
J6279-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6281-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6283-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6285-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 SAS
J6287-FS	0	--	6/1/2018 11:20:00 AM	NA		NA	NA	1.000	1.000	06/01/18 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
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Jun 11 2018 10:28AM SAS	**Received On/By:**	Jun 11 2018 3:43PM 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	CQ870PB-FS(0)	1000	1	Intact	NA
2	CQ871LCS-FS(0)	1000	1	Intact	NA
3	J6258-FS(0)	1000	1	Intact	NA
4	J6260-FS(0)	1000	1	Intact	NA
5	J6262-FS(0)	1000	1	Intact	NA
6	J6264-FS(0)	1000	1	Intact	NA
7	J6266-FS(0)	1000	1	Intact	NA
8	J6270-FS(0)	1000	1	Intact	NA
9	J6272-FS(0)	1000	1	Intact	NA
10	J6273-FS(0)	1000	1	Intact	NA
11	J6275-FS(0)	1000	1	Intact	NA
12	J6277-FS(0)	1000	1	Intact	NA
13	J6279-FS(0)	1000	1	Intact	NA
14	J6281-FS(0)	1000	1	Intact	NA
15	J6283-FS(0)	1000	1	Intact	NA
16	J6285-FS(0)	1000	1	Intact	NA
17	J6287-FS(0)	1000	1	Intact	NA

Total Extracts: 17

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

Purpose:	LC-MS/MS TRANSFER	**Last Activity:**	Prep->Inst
Relinquished On/By:	Jun 14 2018 11:15AM DMS	**Received On/By:**	Jun 14 2018 2:22PM 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	J6273-FS(2)	1000	1.053	Intact	NA
2	J6273-FS-D(3)	1000	20	Intact	NA

Total Extracts: 2

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title(s)	**Project No.(s)**
Naval Air Station Joint Reserve Base Willow Grove, PA	100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Entered By:	On:

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

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title(s)	**Project No.(s)**
Naval Air Station Joint Reserve Base Willow Grove, PA	100117920-WE04

18-0343

WE04 PFAS Analysis

DW

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

BATTELLE
It can be done

BATTELLE - NORWELL OPERATIONS
SAMPLE SPECIFIC COMMENTS

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Sample ID:	Comment:	Date/Initials:
CQ870PB-FS	Sample extraction for CQ870PB-FS through J6273-FS began at 9:59am	06/01/18 SAS
CQ870PB-FS	Sample extraction ended at 10:22am	06/01/18 SAS
CQ871LCS-FS	Sample extraction ended at 10:21am	06/01/18 SAS
J6258-FS	Sample extraction ended at 10:22am	06/01/18 SAS
J6260-FS	Sample extraction ended at 10:25am	06/01/18 SAS
J6262-FS	Sample extraction ended at 10:27am	06/01/18 SAS
J6264-FS	Sample extraction ended at 10:28am	06/01/18 SAS
J6266-FS	Sample extraction ended at 10:29am	06/01/18 SAS
J6270-FS	Sample extraction ended at 10:25am	06/01/18 SAS
J6272-FS	Sample extraction ended at 10:27am	06/01/18 SAS
J6273-FS	Sample extraction ended at 10:27am	06/01/18 SAS
J6275-FS	Sample extraction for samples J6275-FS through J6287-FS began at 11:20am	06/01/18 SAS
J6275-FS	Sample extraction ended at 11:50am	06/01/18 SAS
J6277-FS	Sample extraction ended at 11:50am	06/01/18 SAS
J6279-FS	Sample extraction ended at 11:50am	06/01/18 SAS
J6281-FS	Sample extraction ended at 11:49am	06/01/18 SAS
J6283-FS	Sample extraction ended at 11:52am	06/01/18 SAS
J6285-FS	Sample extraction ended at 11:50am	06/01/18 SAS
J6287-FS	Sample extraction ended at 11:51am	06/01/18 SAS

Analytical Calibrations

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Sequence Report

Created with Analyst Reporter
Printed: 15/06/2018 10:18:19 AM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		6/12/2018 3:38:26 PM	5-0371.dam	5500_06122018.wiff
2	JV64	L1	6/12/2018 3:47:21 PM	5-0371.dam	5500_06122018.wiff
3	JV65	L2	6/12/2018 3:56:17 PM	5-0371.dam	5500_06122018.wiff
4	JV66	L3	6/12/2018 4:05:13 PM	5-0371.dam	5500_06122018.wiff
5	JV67	L4	6/12/2018 4:14:09 PM	5-0371.dam	5500_06122018.wiff
6	JV68	L5	6/12/2018 4:23:04 PM	5-0371.dam	5500_06122018.wiff
7	JV69	L6	6/12/2018 4:32:01 PM	5-0371.dam	5500_06122018.wiff
8	JV70	L7	6/12/2018 4:40:56 PM	5-0371.dam	5500_06122018.wiff
9	JV71	L8	6/12/2018 4:49:51 PM	5-0371.dam	5500_06122018.wiff
10	JV72	L9	6/12/2018 4:58:44 PM	5-0371.dam	5500_06122018.wiff
11	JV63 ICC	ICC	6/12/2018 5:07:40 PM	5-0371.dam	5500_06122018.wiff
12	CQ870PB-FS(0)	Procedural Blank	6/12/2018 5:16:36 PM	5-0371.dam	5500_06122018.wiff
13	CQ871LCS-FS(0)	Laboratory Control Sample	6/12/2018 5:25:31 PM	5-0371.dam	5500_06122018.wiff
14	J6258-FS(0)	WGNA-052918-RW-3124	6/12/2018 5:34:27 PM	5-0371.dam	5500_06122018.wiff
15	J6260-FS(0)	WGNA-052918-RW-3493	6/12/2018 5:43:21 PM	5-0371.dam	5500_06122018.wiff
16	J6262-FS(0)	WGNA-052918-RW-3882	6/12/2018 5:52:16 PM	5-0371.dam	5500_06122018.wiff
17	J6264-FS(0)	WGNA-052918-RW-3978	6/12/2018 6:01:12 PM	5-0371.dam	5500_06122018.wiff
18	J6266-FS(0)	NAWC-052918-RW-161	6/12/2018 6:10:07 PM	5-0371.dam	5500_06122018.wiff
19	J6270-FS(0)	WGNA-053018-RW-3876	6/12/2018 6:19:01 PM	5-0371.dam	5500_06122018.wiff
20	JV69 CCV	CCV	6/12/2018 6:27:56 PM	5-0371.dam	5500_06122018.wiff
21	J6272-FS(0)	WGNA-053018-DUP-37	6/12/2018 6:36:51 PM	5-0371.dam	5500_06122018.wiff
22	J6273-FS(0)	NAWC-053018-RW-231	6/12/2018 6:45:47 PM	5-0371.dam	5500_06122018.wiff
23	J6275-FS(0)	WGNA-053018-RW-3933	6/12/2018 6:54:42 PM	5-0371.dam	5500_06122018.wiff
24	J6277-FS(0)	NAWC-053018-RW-164	6/12/2018 7:03:37 PM	5-0371.dam	5500_06122018.wiff
25	J6279-FS(0)	NAWC-053018-RW-292	6/12/2018 7:12:32 PM	5-0371.dam	5500_06122018.wiff
26	J6281-FS(0)	NAWC-053018-RW-271	6/12/2018 7:21:26 PM	5-0371.dam	5500_06122018.wiff
27	J6283-FS(0)	NAWC-053018-RW-	6/12/2018 7:30:21	5-0371.dam	5500_06122018.wiff

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Sequence Report

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Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
		270	PM		
28	J6285-FS(0)	NAWC-053018-RW-196	6/12/2018 7:39:16 PM	5-0371.dam	5500_06122018.wiff
29	J6287-FS(0)	NAWC-053018-RW-172	6/12/2018 7:48:13 PM	5-0371.dam	5500_06122018.wiff
30	JV70 CCV	CCV	6/12/2018 7:57:07 PM	5-0371.dam	5500_06122018.wiff

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Sequence Report

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Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		6/14/2018 4:50:52 PM	5-0371.dam	06142018.wiff
2	JV64	L1	6/14/2018 4:59:48 PM	5-0371.dam	06142018.wiff
3	JV65	L2	6/14/2018 5:08:44 PM	5-0371.dam	06142018.wiff
4	JV66	L3	6/14/2018 5:17:40 PM	5-0371.dam	06142018.wiff
5	JV67	L4	6/14/2018 5:26:35 PM	5-0371.dam	06142018.wiff
6	JV68	L5	6/14/2018 5:35:30 PM	5-0371.dam	06142018.wiff
7	JV69	L6	6/14/2018 5:44:26 PM	5-0371.dam	06142018.wiff
8	JV70	L7	6/14/2018 5:53:22 PM	5-0371.dam	06142018.wiff
9	JV71	L8	6/14/2018 6:02:19 PM	5-0371.dam	06142018.wiff
10	JV72	L9	6/14/2018 6:11:15 PM	5-0371.dam	06142018.wiff
11	JV63 ICC	ICC	6/14/2018 6:20:10 PM	5-0371.dam	06142018.wiff
12	MeOH		6/14/2018 6:29:05 PM	5-0371.dam	06142018.wiff
18	J6264-FS(0)	WGNA-052918-RW-3978	6/14/2018 7:22:36 PM	5-0371.dam	06142018.wiff
31	J6273-FS-D(3)	NAWC-050318-RW-231	6/14/2018 8:16:14 PM	5-0371.dam	06142018.wiff
8	JV70 CCV	CCV	6/14/2018 9:36:35 PM	5-0371.dam	06142018.wiff

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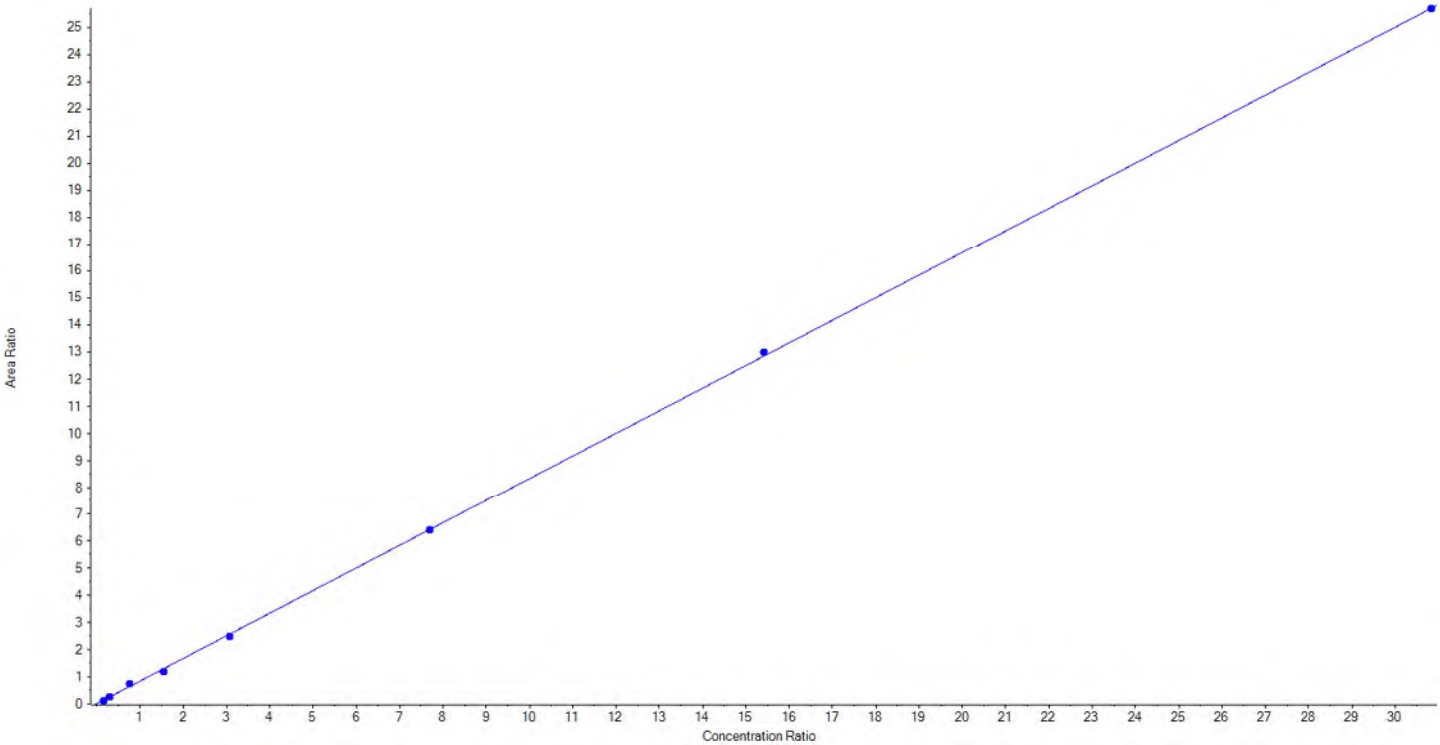
Calibration Summary Report

Analyte Name	PFBS_1	**Data File**	5500_06122018.wiff
MRM Transition	298.9 / 80.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.83341 x + 0.00340 (r = 0.99975) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.15	N/A	N/A
3	JV65	L2	True	44.30	43.213844	97.6
4	JV66	L3	True	88.60	89.988738	101.6
5	JV67	L4	True	221.50	247.673064	111.8
6	JV68	L5	True	443.00	403.940540	91.2
7	JV69	L6	True	885.00	859.283953	97.1
8	JV70	L7	True	2212.50	2207.781220	99.8
9	JV71	L8	True	4425.00	4470.852431	101.0
10	JV72	L9	True	8850.00	8847.166208	100.0



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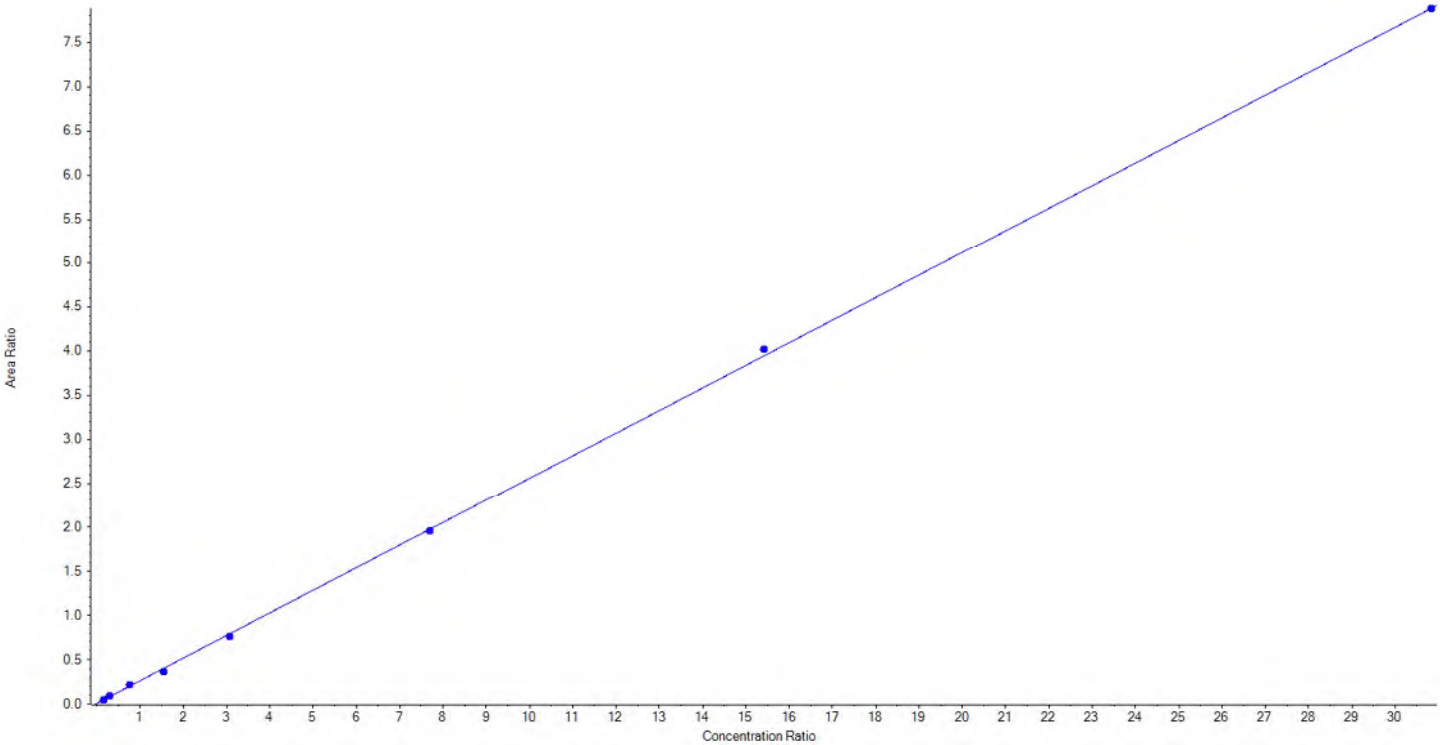
Calibration Summary Report

Analyte Name	PFBS_2	**Data File**	5500_06122018.wiff
MRM Transition	298.9 / 99.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.25546 x + 0.00523 (r = 0.99971) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.15	N/A	N/A
3	JV65	L2	True	44.30	45.544704	102.8
4	JV66	L3	True	88.60	90.777650	102.5
5	JV67	L4	True	221.50	239.032605	107.9
6	JV68	L5	True	443.00	401.078422	90.5
7	JV69	L6	True	885.00	842.792276	95.2
8	JV70	L7	True	2212.50	2194.855139	99.2
9	JV71	L8	True	4425.00	4507.631063	101.9
10	JV72	L9	True	8850.00	8848.188142	100.0



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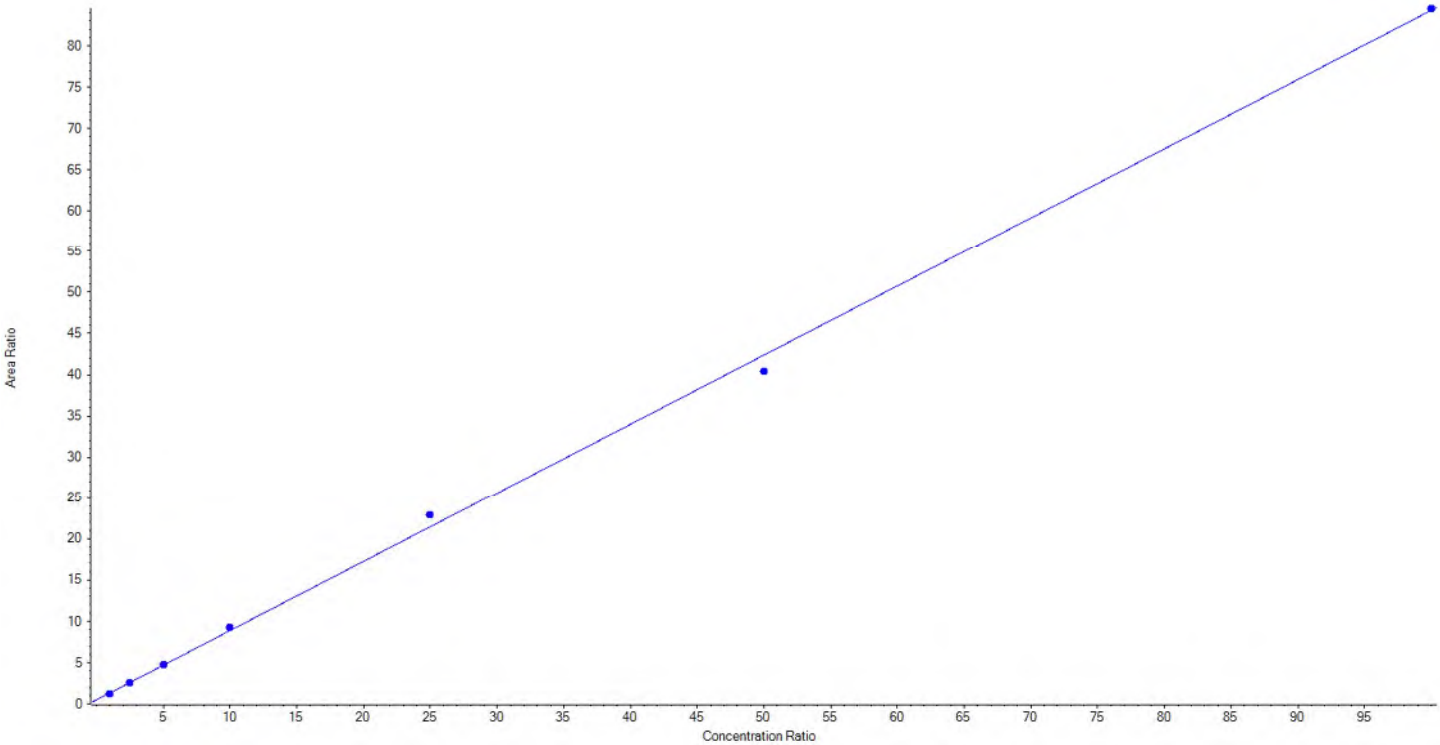
Calibration Summary Report

Analyte Name	PFHxA_1	**Data File**	5500_06122018.wiff
MRM Transition	313.0 / 269.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.83805 x + 0.49545 (r = 0.99927) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	False	50.00	N/A	N/A
4	JV66	L3	True	100.00	93.424536	93.4
5	JV67	L4	True	250.00	248.896045	99.6
6	JV68	L5	True	500.00	502.164583	100.4
7	JV69	L6	True	1000.00	1042.105925	104.2
8	JV70	L7	True	2500.00	2668.171989	106.7
9	JV71	L8	True	5000.00	4769.428796	95.4
10	JV72	L9	True	10000.00	10025.808125	100.3



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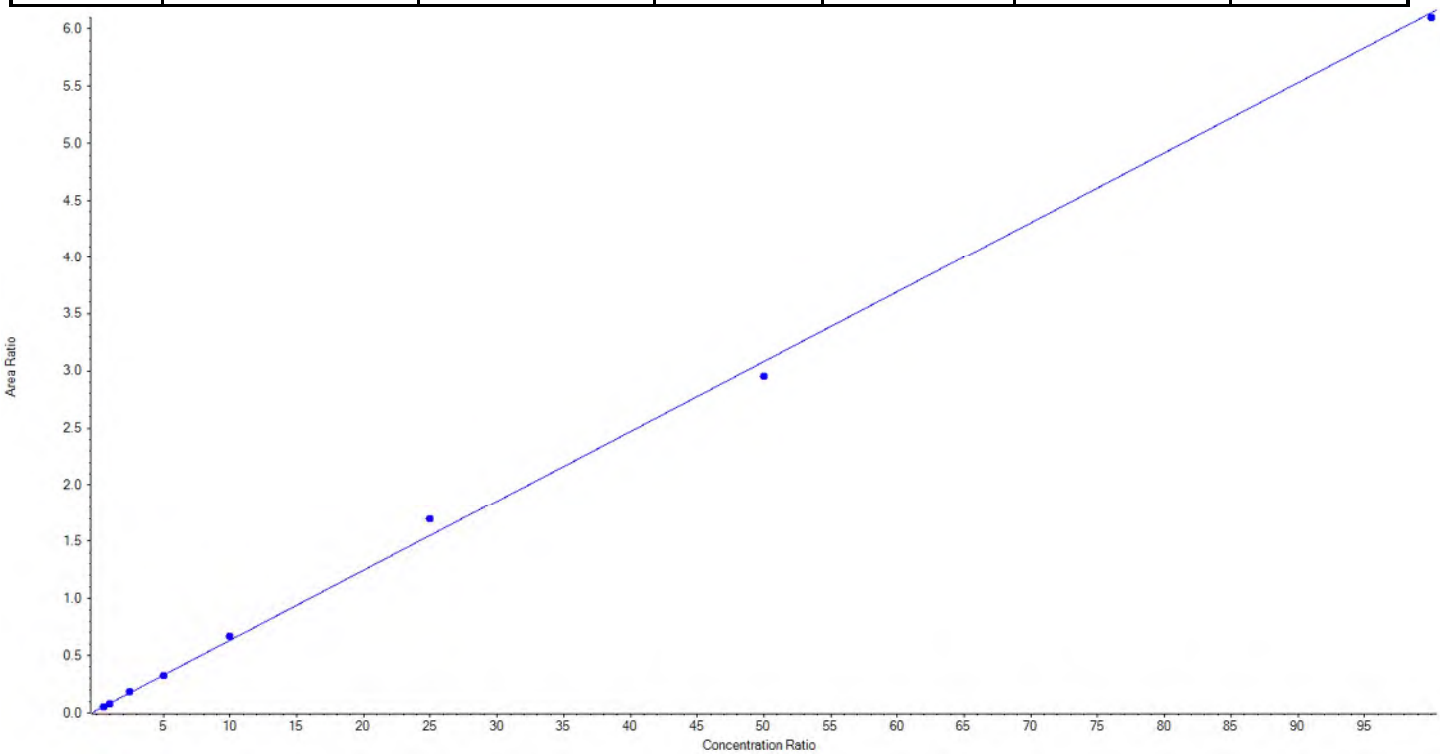
Calibration Summary Report

Analyte Name	PFHxA_2	**Data File**	5500_06122018.wiff
MRM Transition	313.0 / 119.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.06120 x + 0.02261 (r = 0.99897) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	49.540681	99.1
4	JV66	L3	True	100.00	87.486557	87.5
5	JV67	L4	True	250.00	263.369148	105.4
6	JV68	L5	True	500.00	490.613382	98.1
7	JV69	L6	True	1000.00	1055.712476	105.6
8	JV70	L7	True	2500.00	2732.015423	109.3
9	JV71	L8	True	5000.00	4789.725663	95.8
10	JV72	L9	True	10000.00	9931.536669	99.3



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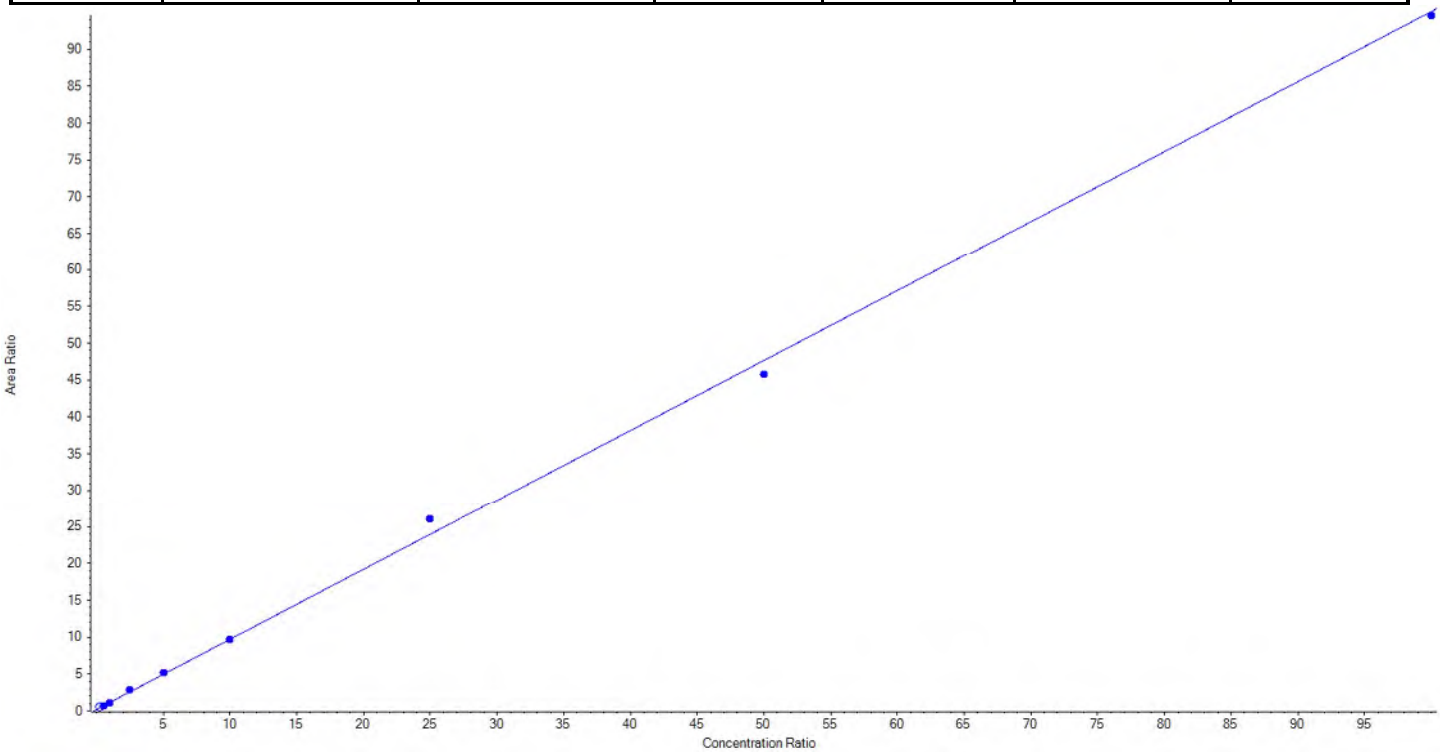
Calibration Summary Report

Analyte Name	PFHpA_1	**Data File**	5500_06122018.wiff
MRM Transition	363.0 / 319.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.94912 x + 0.20808 (r = 0.99907) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	29.060439	116.2
3	JV65	L2	True	50.00	42.712949	85.4
4	JV66	L3	True	100.00	95.603273	95.6
5	JV67	L4	True	250.00	273.571001	109.4
6	JV68	L5	True	500.00	530.187129	106.0
7	JV69	L6	True	1000.00	992.178774	99.2
8	JV70	L7	True	2500.00	2720.096808	108.8
9	JV71	L8	True	5000.00	4802.675276	96.1
10	JV72	L9	True	10000.00	9942.974789	99.4



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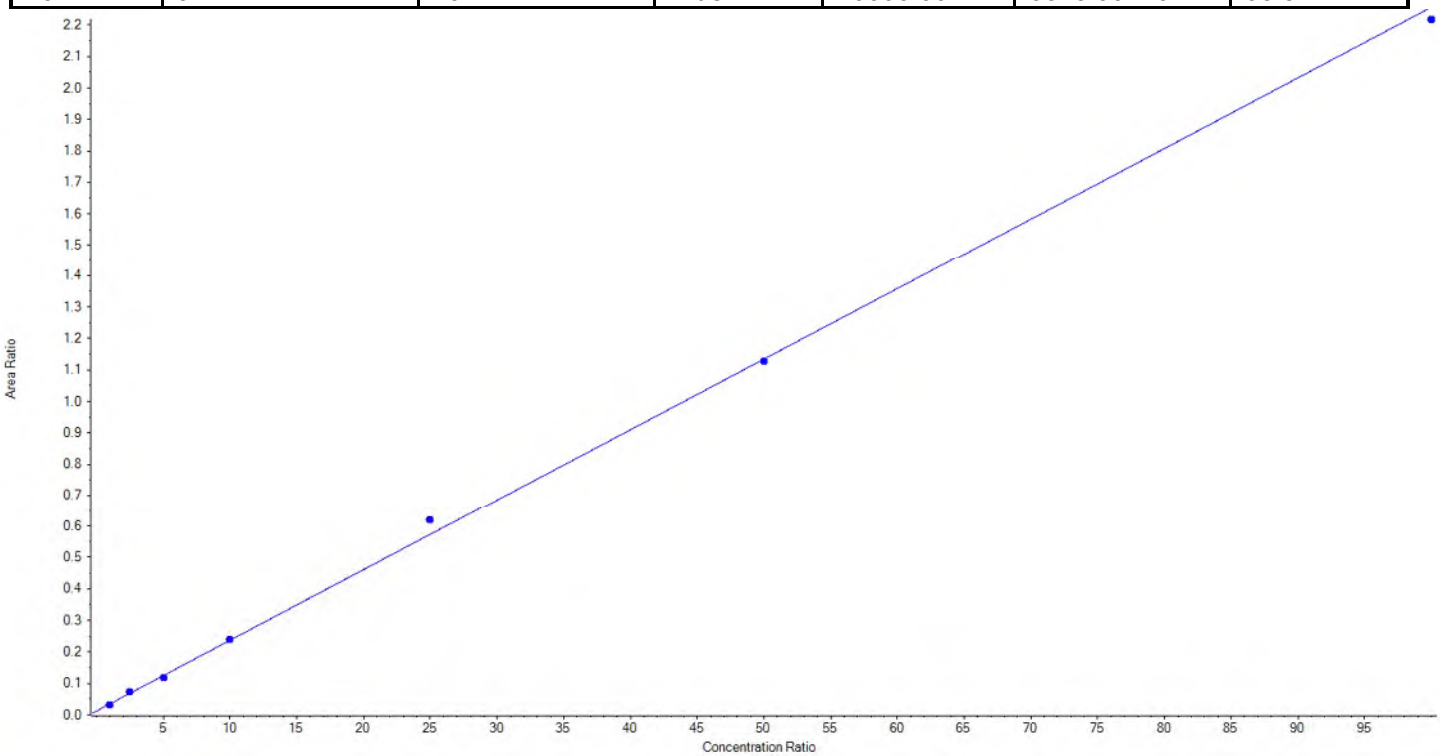
Calibration Summary Report

Analyte Name	PFHpA_2	**Data File**	5500_06122018.wiff
MRM Transition	363.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.02243 x + 0.01260 (r = 0.99918) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	False	50.00	N/A	N/A
4	JV66	L3	True	100.00	86.912658	86.9
5	JV67	L4	True	250.00	277.726029	111.1
6	JV68	L5	True	500.00	474.792061	95.0
7	JV69	L6	True	1000.00	1011.164660	101.1
8	JV70	L7	True	2500.00	2709.693669	108.4
9	JV71	L8	True	5000.00	4963.719656	99.3
10	JV72	L9	True	10000.00	9825.991267	98.3



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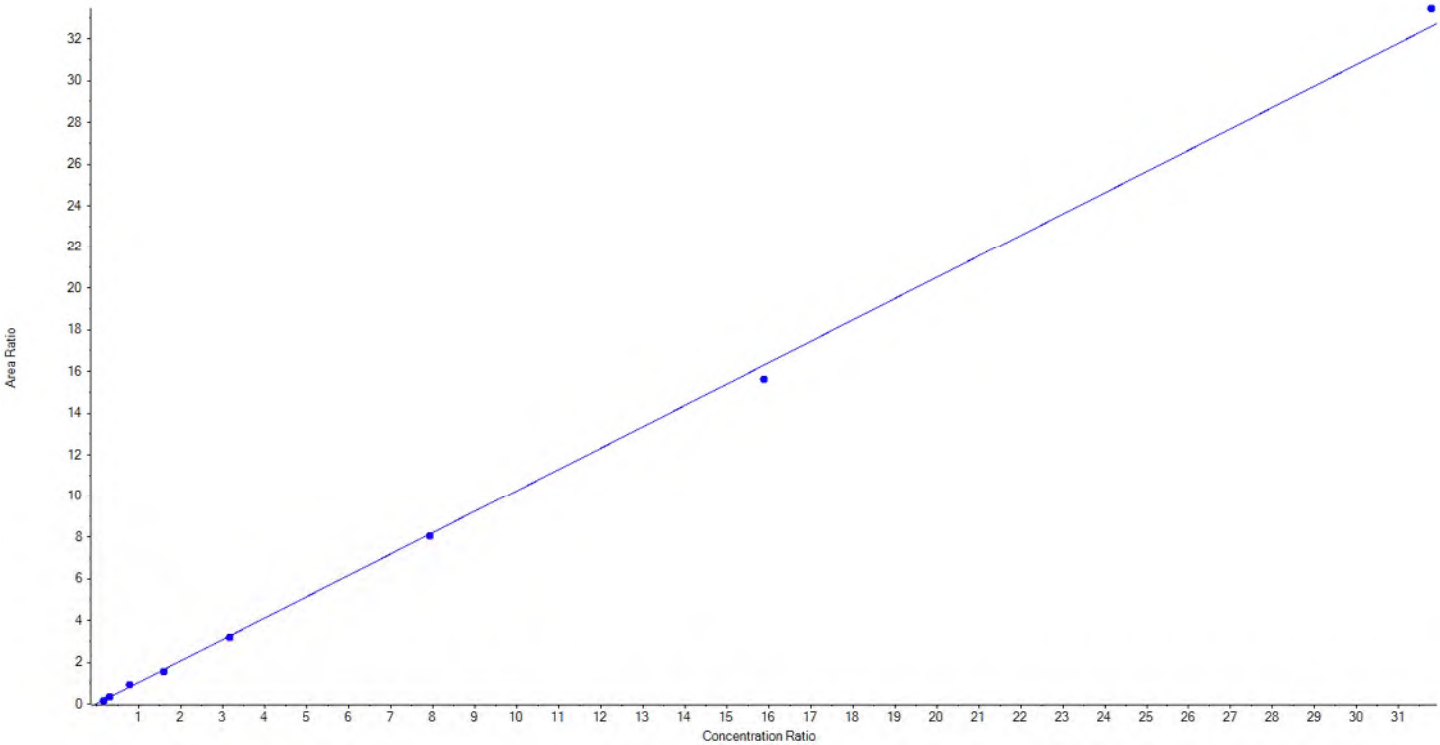
Calibration Summary Report

Analyte Name	PFHxS_1	**Data File**	5500_06122018.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.02546 x + 0.00270 (r = 0.99932) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.80	N/A	N/A
3	JV65	L2	True	45.60	46.187690	101.3
4	JV66	L3	True	91.20	87.480349	95.9
5	JV67	L4	True	228.00	260.566228	114.3
6	JV68	L5	True	456.00	427.831245	93.8
7	JV69	L6	True	912.00	887.810797	97.4
8	JV70	L7	True	2280.00	2255.837318	98.9
9	JV71	L8	True	4560.00	4366.609379	95.8
10	JV72	L9	True	9120.00	9360.476993	102.6



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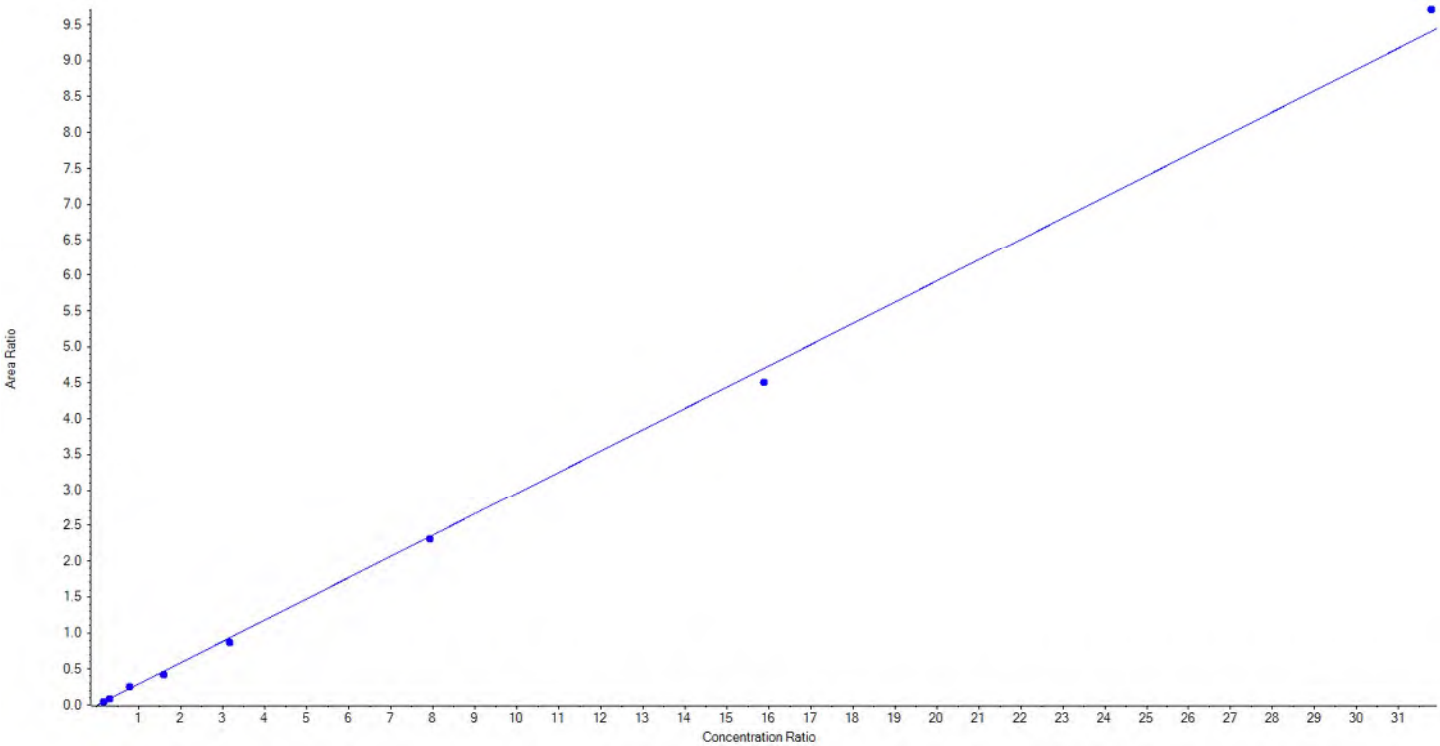
Calibration Summary Report

Analyte Name	PFHxS_2	**Data File**	5500_06122018.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.29618 x + -0.00713 (r = 0.99913) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.80	N/A	N/A
3	JV65	L2	True	45.60	49.529878	108.6
4	JV66	L3	True	91.20	88.910765	97.5
5	JV67	L4	True	228.00	253.133590	111.0
6	JV68	L5	True	456.00	418.795290	91.8
7	JV69	L6	True	912.00	853.057542	93.5
8	JV70	L7	True	2280.00	2244.055800	98.4
9	JV71	L8	True	4560.00	4369.582780	95.8
10	JV72	L9	True	9120.00	9415.734356	103.2



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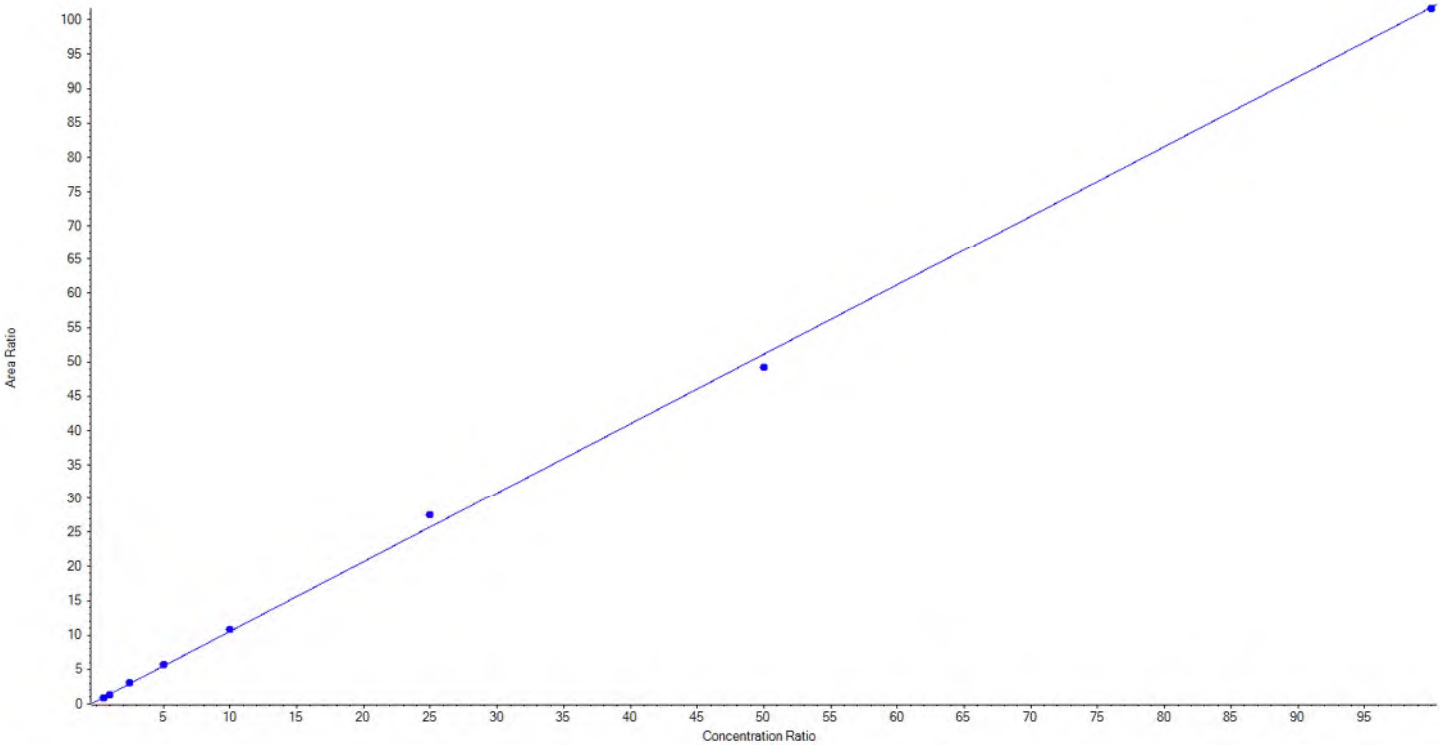
Calibration Summary Report

Analyte Name	PFOA_1	**Data File**	5500_06122018.wiff
MRM Transition	413.0 / 369.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.01411 x + 0.42321 (r = 0.99934) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	50.338209	100.7
4	JV66	L3	True	100.00	84.707195	84.7
5	JV67	L4	True	250.00	265.523841	106.2
6	JV68	L5	True	500.00	515.478392	103.1
7	JV69	L6	True	1000.00	1026.033578	102.6
8	JV70	L7	True	2500.00	2669.074700	106.8
9	JV71	L8	True	5000.00	4805.638526	96.1
10	JV72	L9	True	10000.00	9983.205560	99.8



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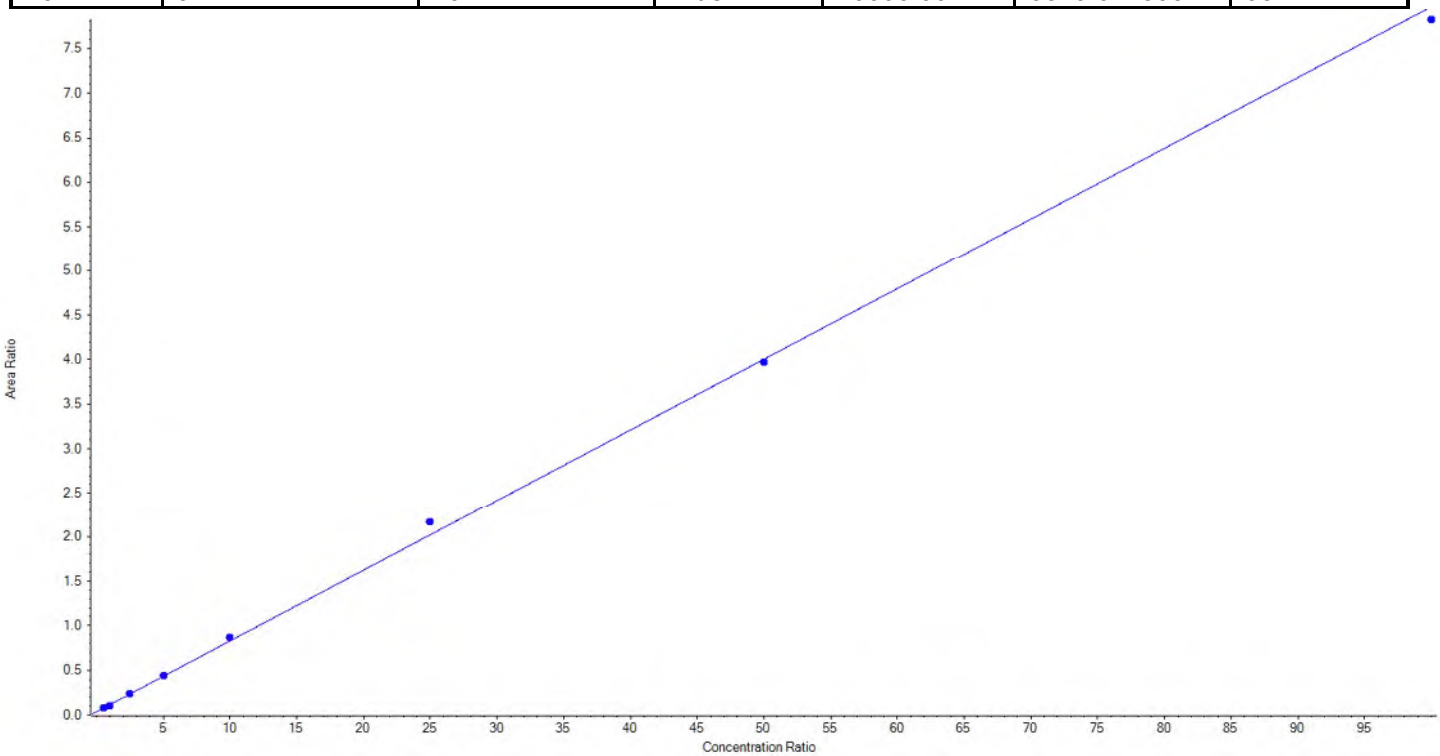
Calibration Summary Report

Analyte Name	PFOA_2	**Data File**	5500_06122018.wiff
MRM Transition	413.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.07932 x + 0.03574 (r = 0.99937) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	52.109683	104.2
4	JV66	L3	True	100.00	84.079239	84.1
5	JV67	L4	True	250.00	252.081302	100.8
6	JV68	L5	True	500.00	504.406238	100.9
7	JV69	L6	True	1000.00	1055.853791	105.6
8	JV70	L7	True	2500.00	2678.463894	107.1
9	JV71	L8	True	5000.00	4953.363354	99.1
10	JV72	L9	True	10000.00	9819.642500	98.2



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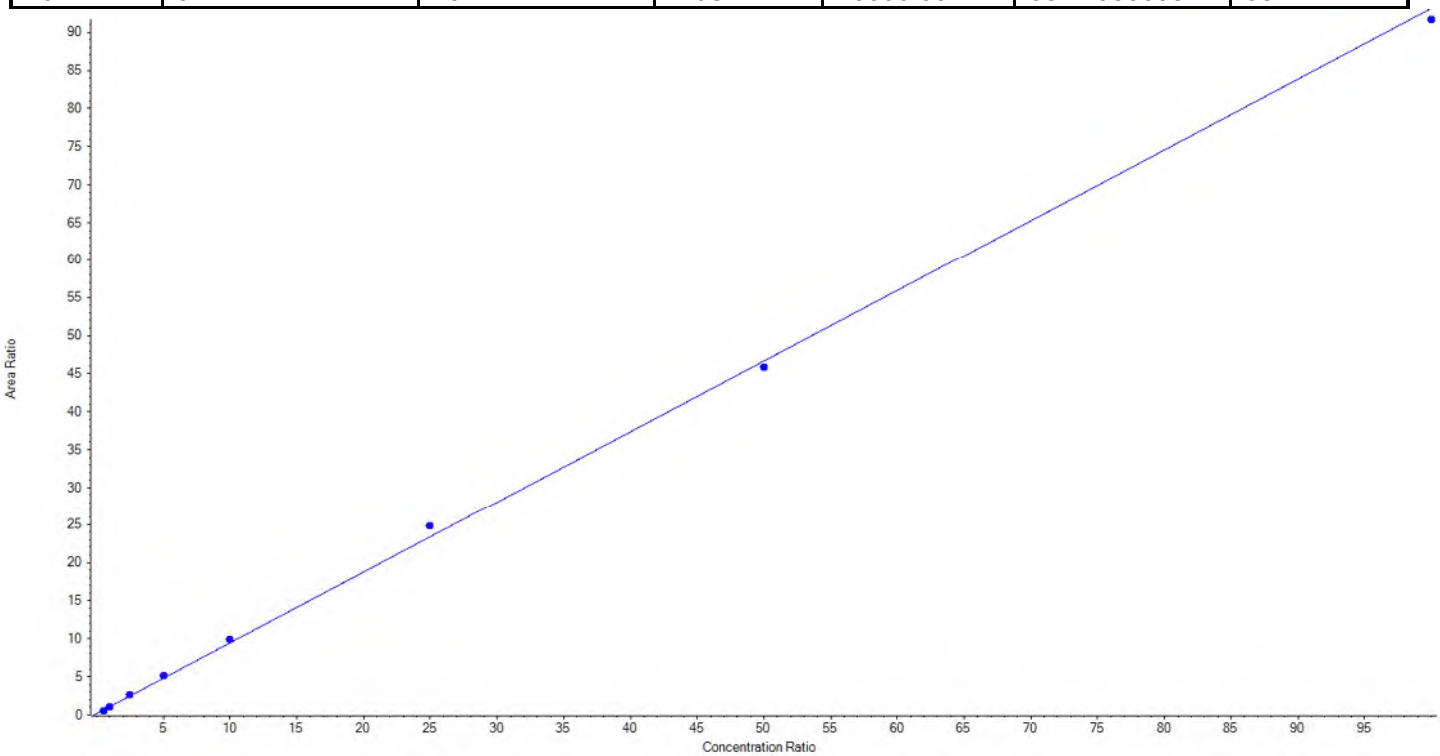
Calibration Summary Report

Analyte Name	PFNA_1	**Data File**	5500_06122018.wiff
MRM Transition	463.0 / 419.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.92987 x + 0.16135 (r = 0.99939) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	39.449837	78.9
4	JV66	L3	True	100.00	100.138720	100.1
5	JV67	L4	True	250.00	264.651374	105.9
6	JV68	L5	True	500.00	534.761281	107.0
7	JV69	L6	True	1000.00	1054.207944	105.4
8	JV70	L7	True	2500.00	2650.586292	106.0
9	JV71	L8	True	5000.00	4914.250945	98.3
10	JV72	L9	True	10000.00	9841.953608	98.4



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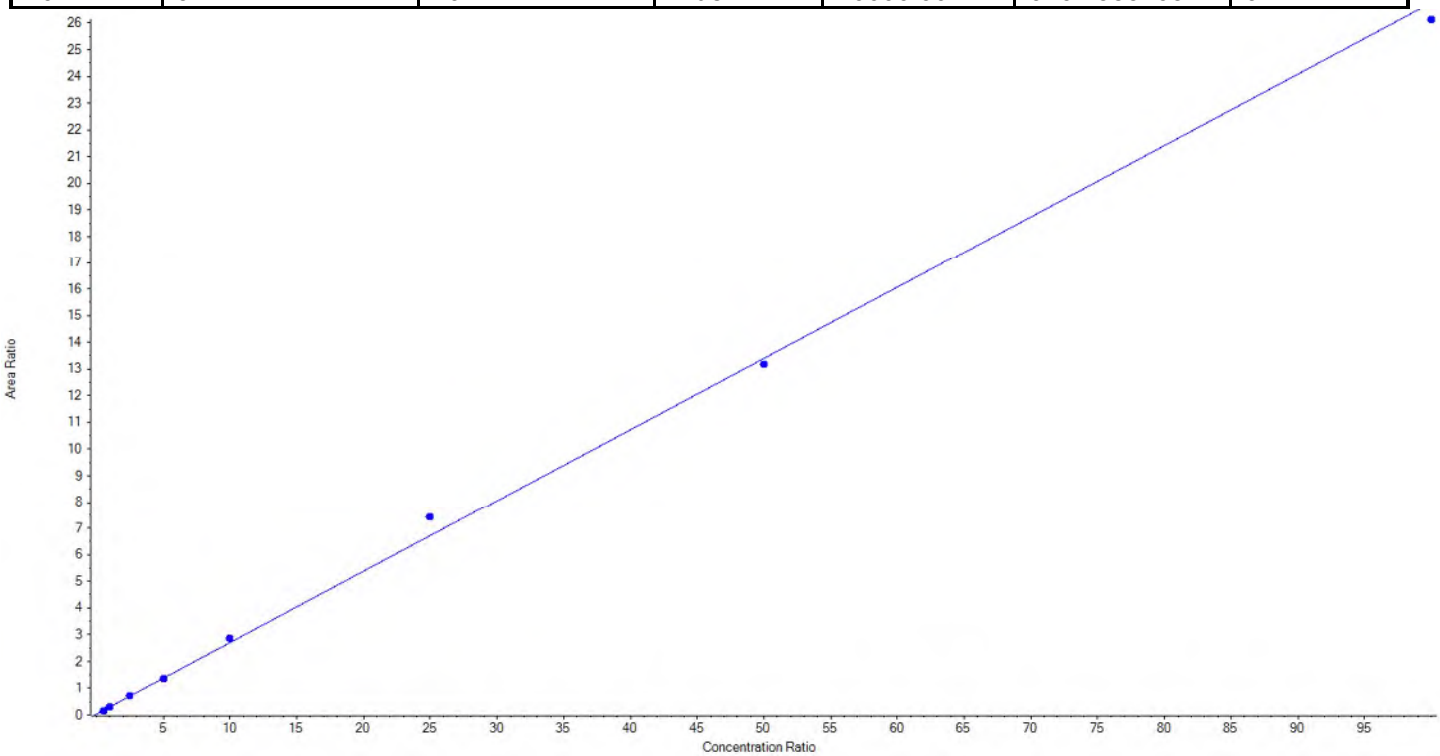
Calibration Summary Report

Analyte Name	PFNA_2	**Data File**	5500_06122018.wiff
MRM Transition	463.0 / 219.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.26726 x + 0.03412 (r = 0.99888) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	42.777773	85.6
4	JV66	L3	True	100.00	102.807845	102.8
5	JV67	L4	True	250.00	248.524822	99.4
6	JV68	L5	True	500.00	501.019505	100.2
7	JV69	L6	True	1000.00	1052.266180	105.2
8	JV70	L7	True	2500.00	2769.495936	110.8
9	JV71	L8	True	5000.00	4918.524474	98.4
10	JV72	L9	True	10000.00	9764.583465	97.7



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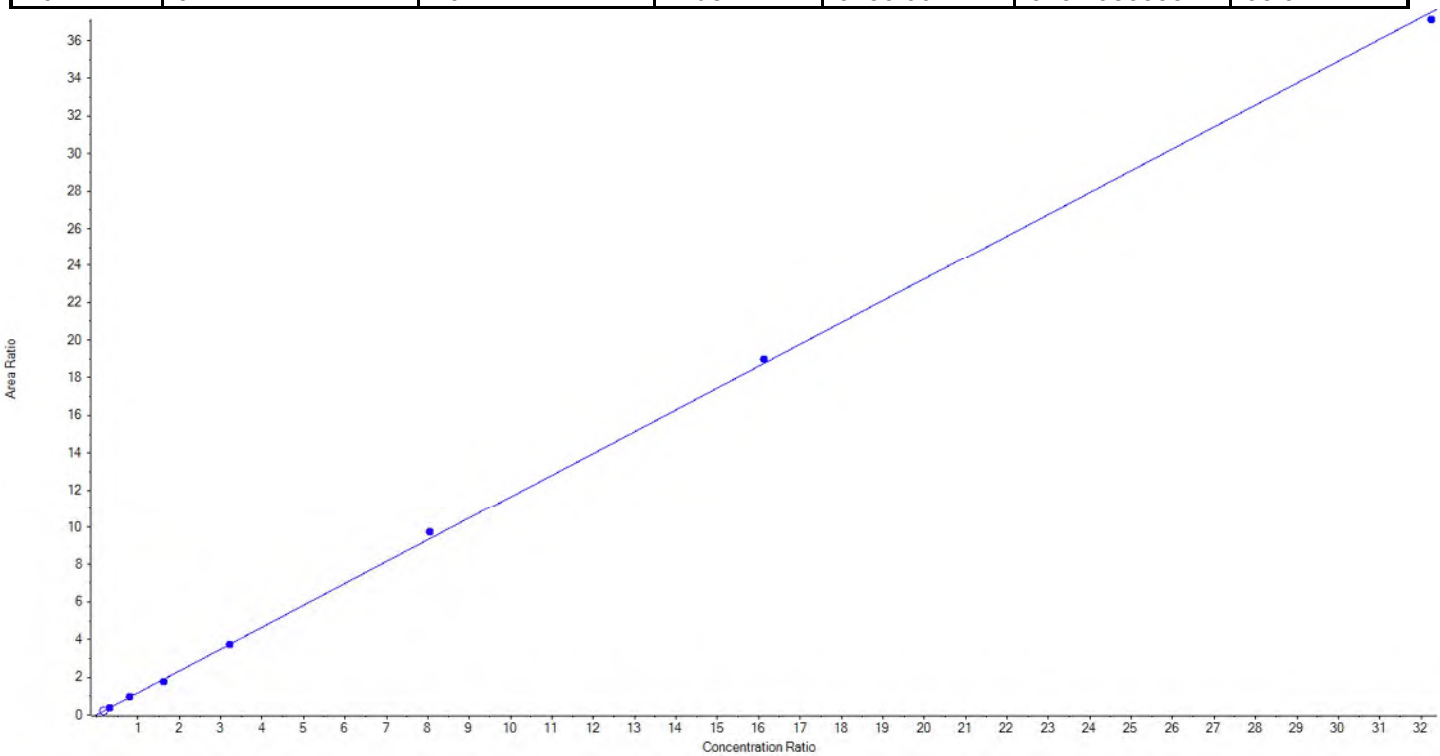
Calibration Summary Report

Analyte Name	PFOS_1	**Data File**	5500_06122018.wiff
MRM Transition	499.0 / 80.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.16304 x + 0.00952 (r = 0.99976) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	23.15	N/A	N/A
3	JV65	L2	False	46.30	48.187813	104.1
4	JV66	L3	True	92.60	95.378162	103.0
5	JV67	L4	True	231.50	234.863467	101.5
6	JV68	L5	True	463.00	428.486526	92.6
7	JV69	L6	True	925.60	920.372302	99.4
8	JV70	L7	True	2314.00	2396.428880	103.6
9	JV71	L8	True	4628.00	4677.185328	101.1
10	JV72	L9	True	9256.00	9157.985335	98.9



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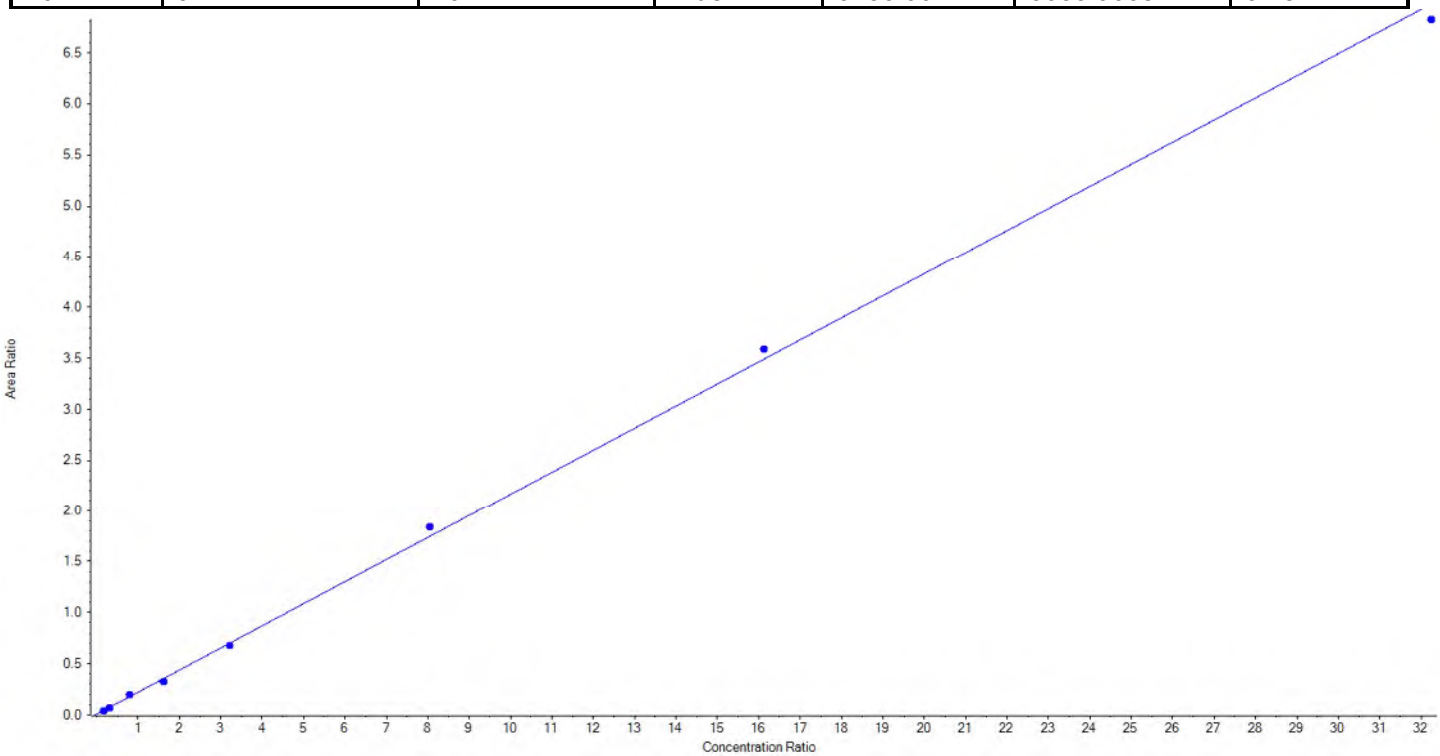
Calibration Summary Report

Analyte Name	PFOS_2	**Data File**	5500_06122018.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.21614 x + 0.00561 (r = 0.99933) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	23.15	N/A	N/A
3	JV65	L2	True	46.30	48.850325	105.5
4	JV66	L3	True	92.60	84.477615	91.2
5	JV67	L4	True	231.50	252.027708	108.9
6	JV68	L5	True	463.00	423.495829	91.5
7	JV69	L6	True	925.60	896.469482	96.9
8	JV70	L7	True	2314.00	2440.469794	105.5
9	JV71	L8	True	4628.00	4757.248377	102.8
10	JV72	L9	True	9256.00	9053.960872	97.8



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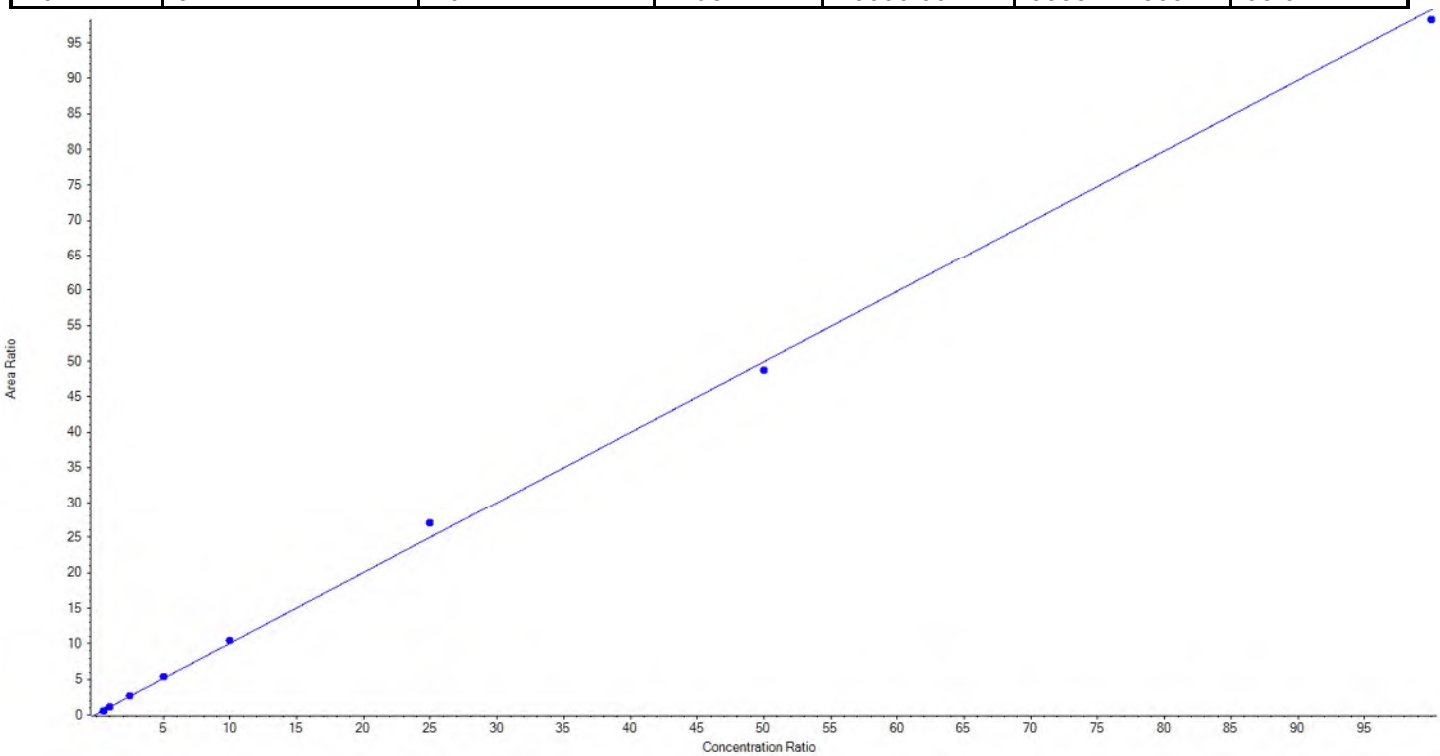
Calibration Summary Report

Analyte Name	PFDA_1	**Data File**	5500_06122018.wiff
MRM Transition	513.0 / 469.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.99557 x + 0.13515 (r = 0.99929) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	44.435832	88.9
4	JV66	L3	True	100.00	93.145766	93.2
5	JV67	L4	True	250.00	261.832997	104.7
6	JV68	L5	True	500.00	525.405873	105.1
7	JV69	L6	True	1000.00	1041.326506	104.1
8	JV70	L7	True	2500.00	2697.013223	107.9
9	JV71	L8	True	5000.00	4878.661940	97.6
10	JV72	L9	True	10000.00	9858.177863	98.6



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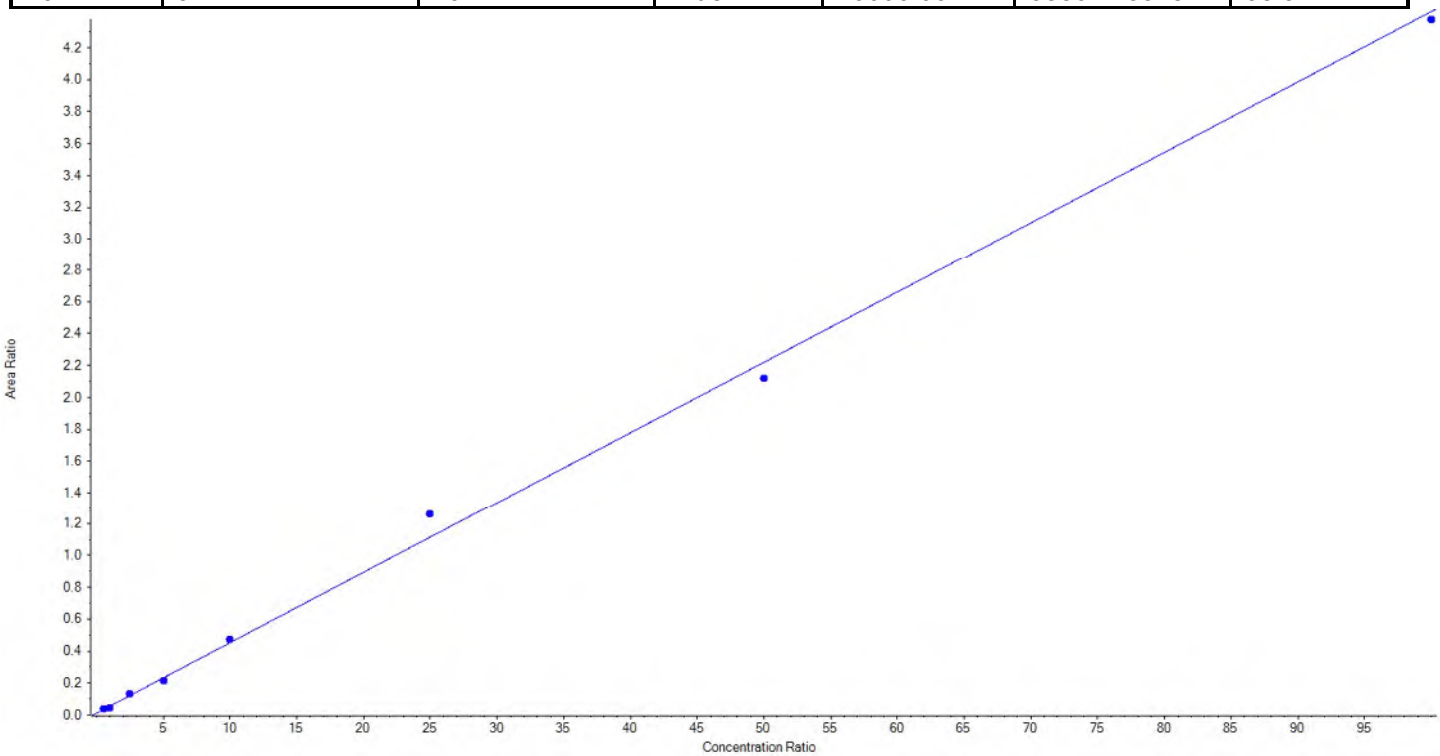
Calibration Summary Report

Analyte Name	PFDA_2	**Data File**	5500_06122018.wiff
MRM Transition	513.0 / 219.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04416 x + 0.01106 (r = 0.99805) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	55.236183	110.5
4	JV66	L3	True	100.00	76.398204	76.4
5	JV67	L4	True	250.00	272.771787	109.1
6	JV68	L5	True	500.00	459.878276	92.0
7	JV69	L6	True	1000.00	1044.129829	104.4
8	JV70	L7	True	2500.00	2833.104819	113.3
9	JV71	L8	True	5000.00	4772.307574	95.5
10	JV72	L9	True	10000.00	9886.173328	98.9



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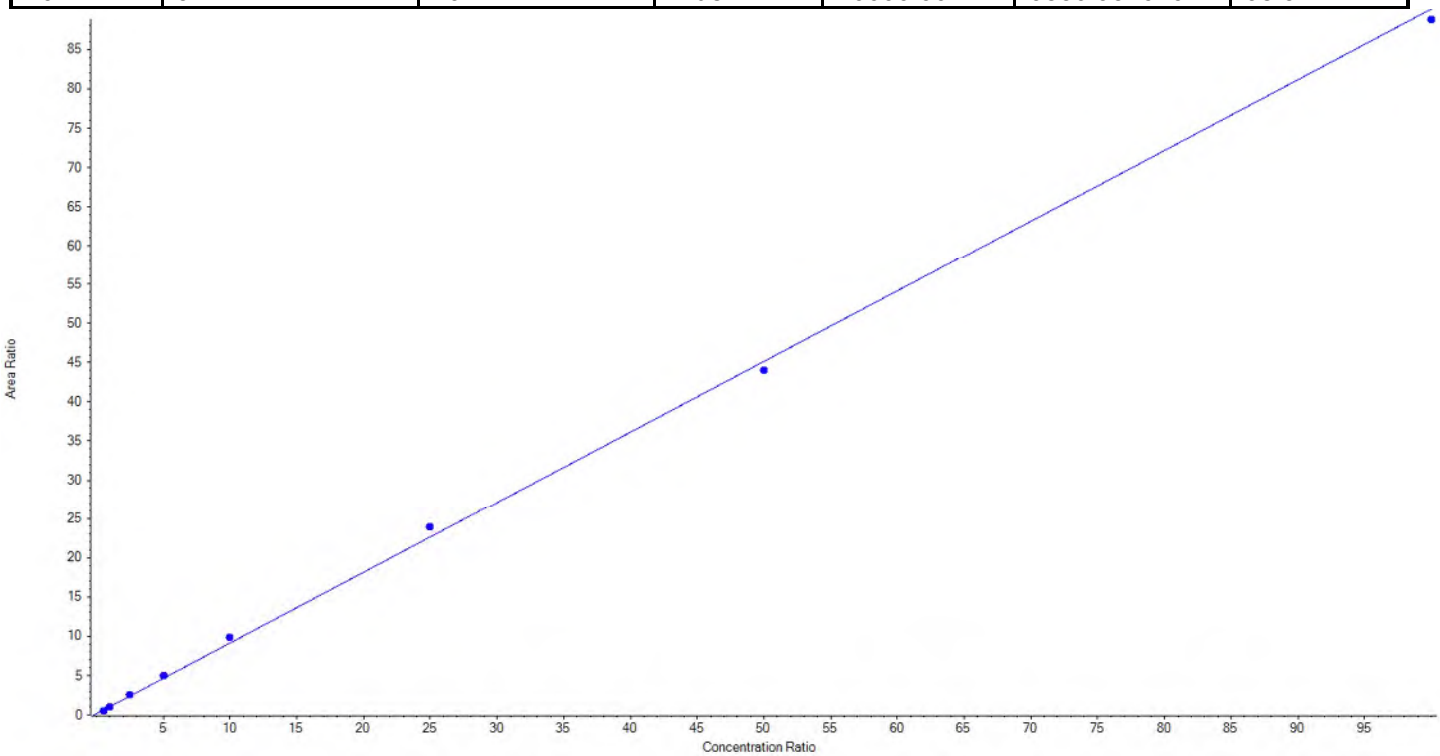
Calibration Summary Report

Analyte Name	PFUnA_1	**Data File**	5500_06122018.wiff
MRM Transition	563.0 / 519.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.90013 x + 0.14078 (r = 0.99919) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	37.715784	75.4
4	JV66	L3	True	100.00	96.757681	96.8
5	JV67	L4	True	250.00	272.425126	109.0
6	JV68	L5	True	500.00	545.715689	109.1
7	JV69	L6	True	1000.00	1081.252644	108.1
8	JV70	L7	True	2500.00	2637.960702	105.5
9	JV71	L8	True	5000.00	4877.214697	97.5
10	JV72	L9	True	10000.00	9850.957676	98.5



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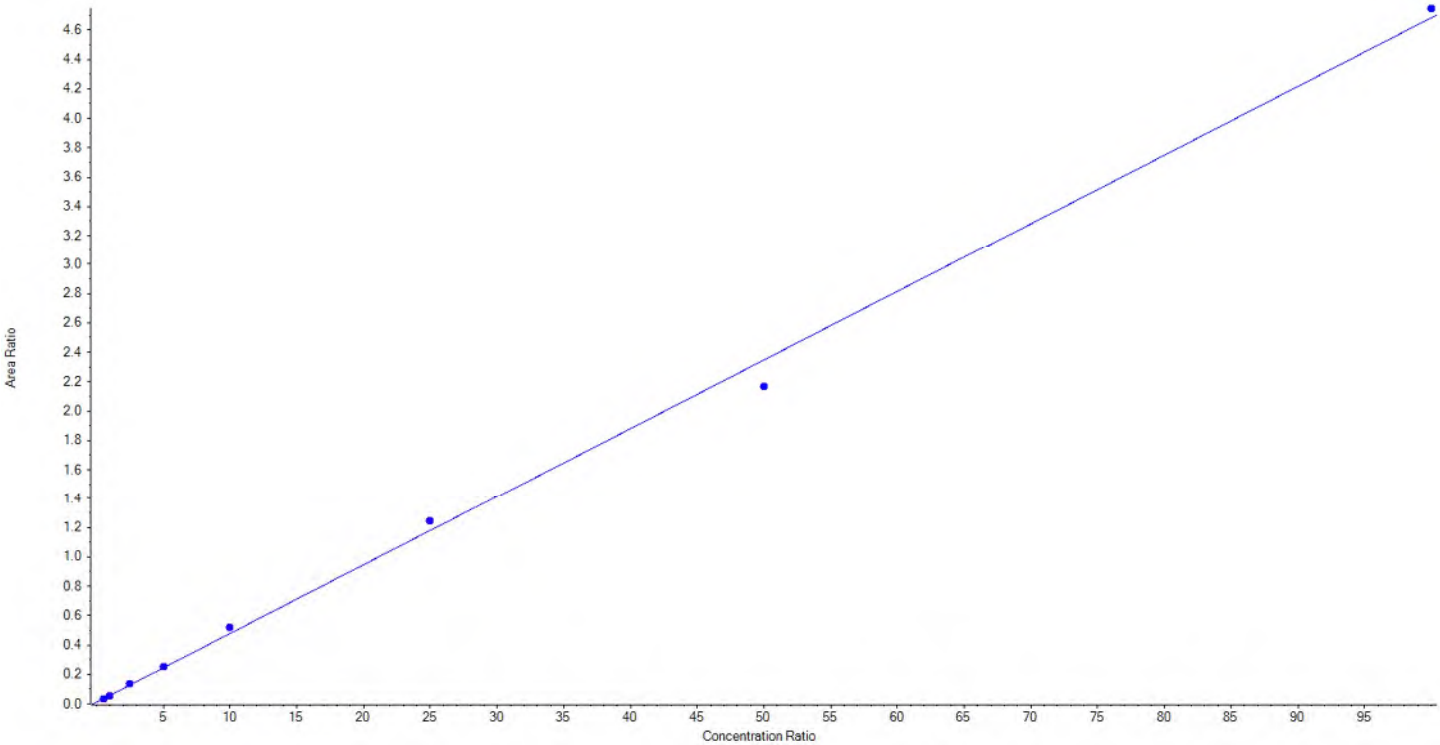
Calibration Summary Report

Analyte Name	PFUnA_2	**Data File**	5500_06122018.wiff
MRM Transition	563.0 / 269.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04673 x + 0.01136 (r = 0.99863) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	43.007491	86.0
4	JV66	L3	True	100.00	96.202057	96.2
5	JV67	L4	True	250.00	264.918139	106.0
6	JV68	L5	True	500.00	520.578495	104.1
7	JV69	L6	True	1000.00	1084.199708	108.4
8	JV70	L7	True	2500.00	2639.439523	105.6
9	JV71	L8	True	5000.00	4618.590848	92.4
10	JV72	L9	True	10000.00	10133.063739	101.3



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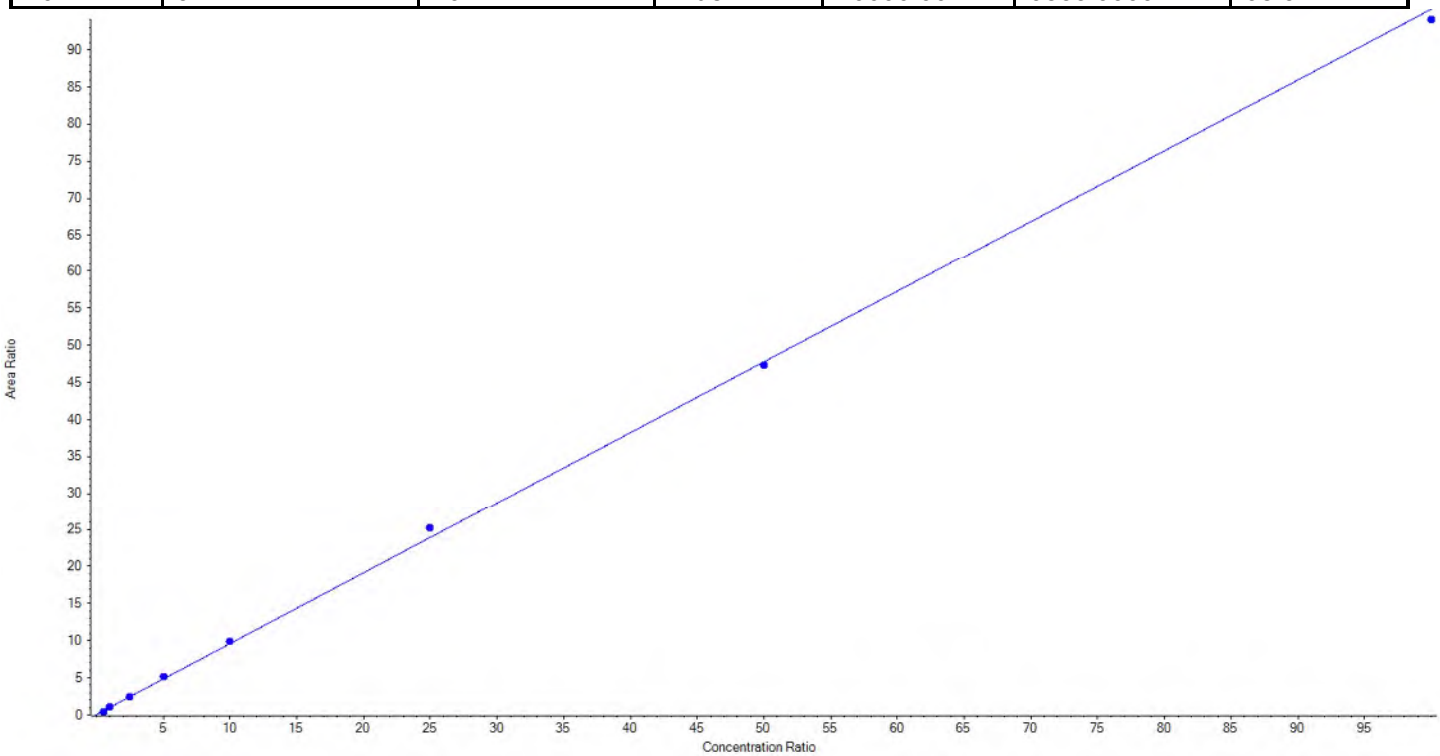
Calibration Summary Report

Analyte Name	PFDoA_1	**Data File**	5500_06122018.wiff
MRM Transition	613.0 / 569.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.95393 x + 0.06668 (r = 0.99961) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	41.996263	84.0
4	JV66	L3	True	100.00	102.502704	102.5
5	JV67	L4	True	250.00	254.423652	101.8
6	JV68	L5	True	500.00	531.541408	106.3
7	JV69	L6	True	1000.00	1023.170252	102.3
8	JV70	L7	True	2500.00	2636.134326	105.5
9	JV71	L8	True	5000.00	4956.231482	99.1
10	JV72	L9	True	10000.00	9853.999912	98.5



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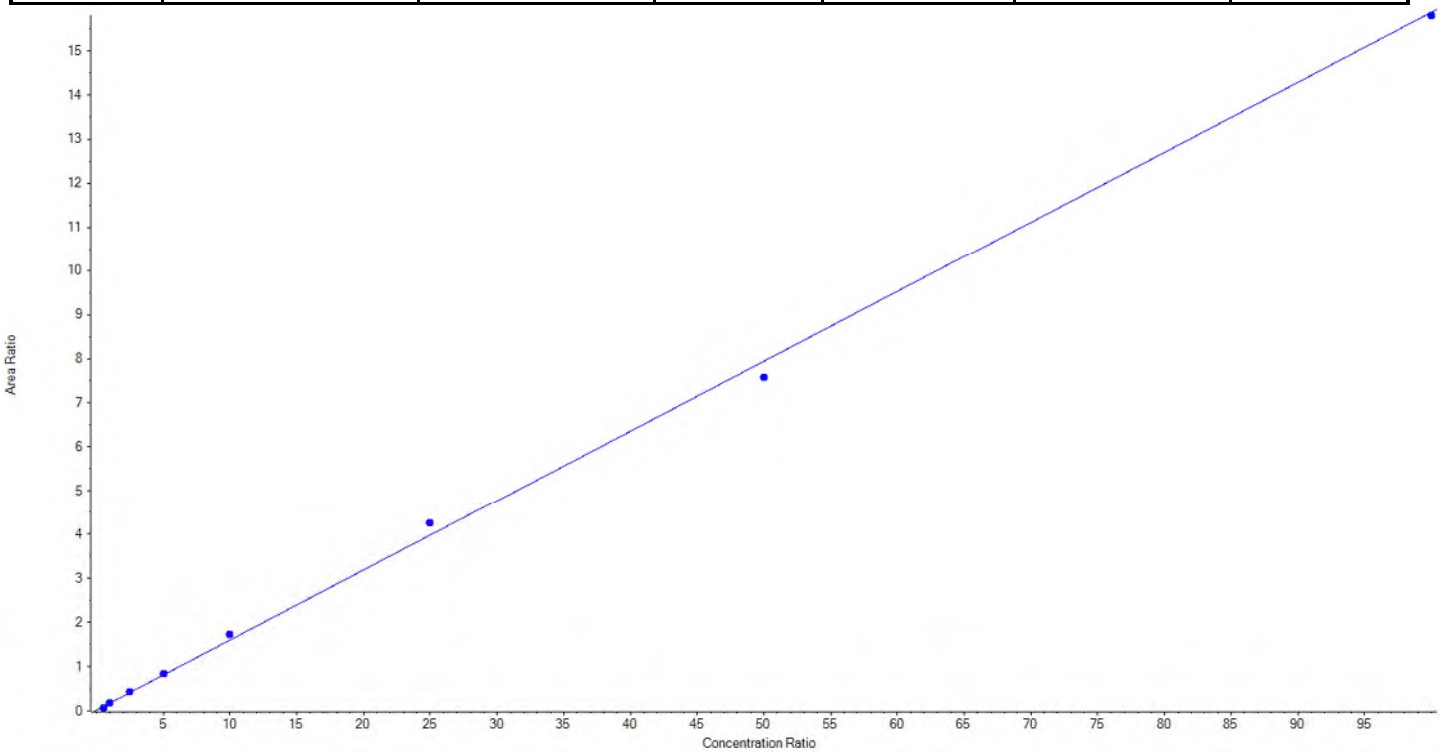
Calibration Summary Report

Analyte Name	PFDoA_2	**Data File**	5500_06122018.wiff
MRM Transition	613.0 / 319.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.15850 x + 0.01900 (r = 0.99906) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	37.377887	74.8
4	JV66	L3	True	100.00	107.351795	107.4
5	JV67	L4	True	250.00	260.643724	104.3
6	JV68	L5	True	500.00	522.047312	104.4
7	JV69	L6	True	1000.00	1072.560309	107.3
8	JV70	L7	True	2500.00	2675.490267	107.0
9	JV71	L8	True	5000.00	4770.454972	95.4
10	JV72	L9	True	10000.00	9954.073734	99.5



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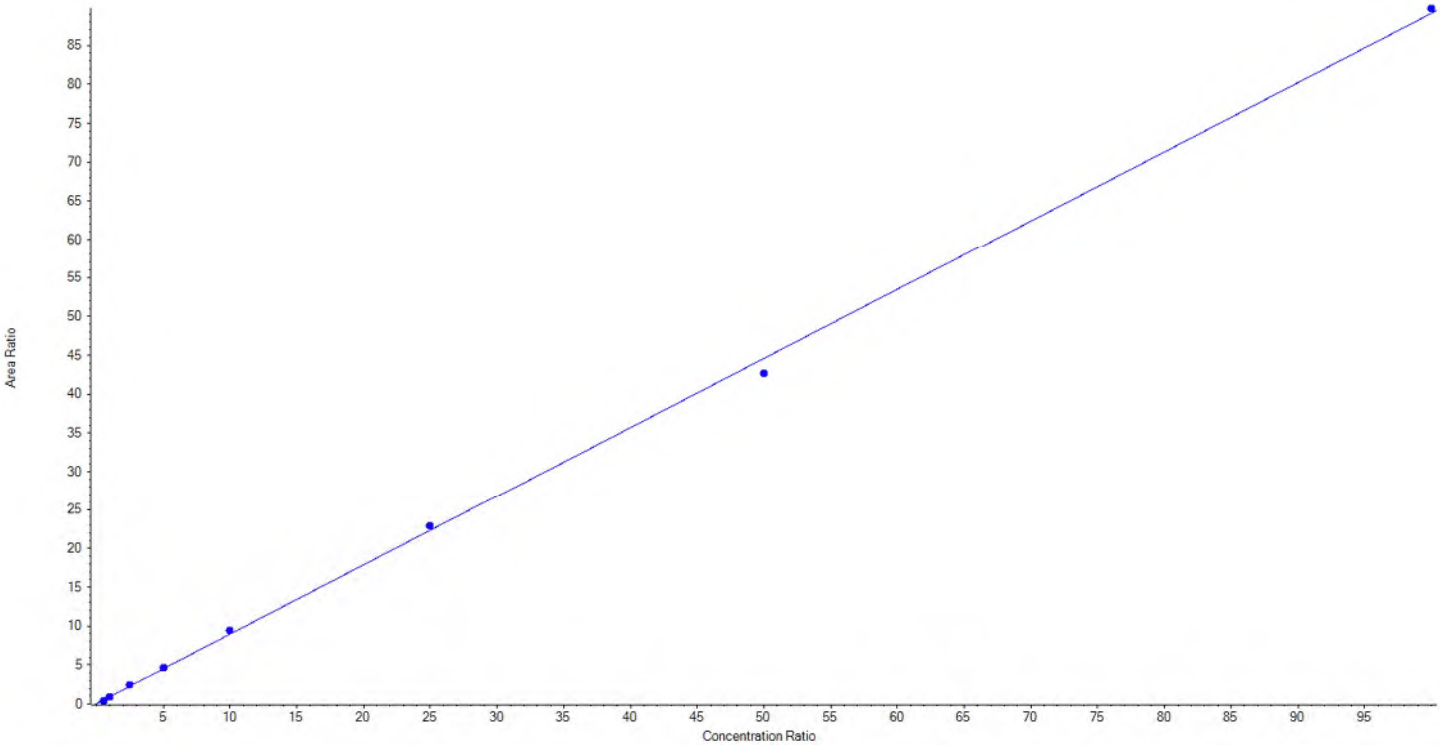
Calibration Summary Report

Analyte Name	PFTrDA_1	**Data File**	5500_06122018.wiff
MRM Transition	663.0 / 619.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.89048 x + 0.06159 (r = 0.99953) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	43.306796	86.6
4	JV66	L3	True	100.00	97.875153	97.9
5	JV67	L4	True	250.00	268.128055	107.3
6	JV68	L5	True	500.00	519.973497	104.0
7	JV69	L6	True	1000.00	1055.027052	105.5
8	JV70	L7	True	2500.00	2557.249009	102.3
9	JV71	L8	True	5000.00	4788.826360	95.8
10	JV72	L9	True	10000.00	10069.614078	100.7



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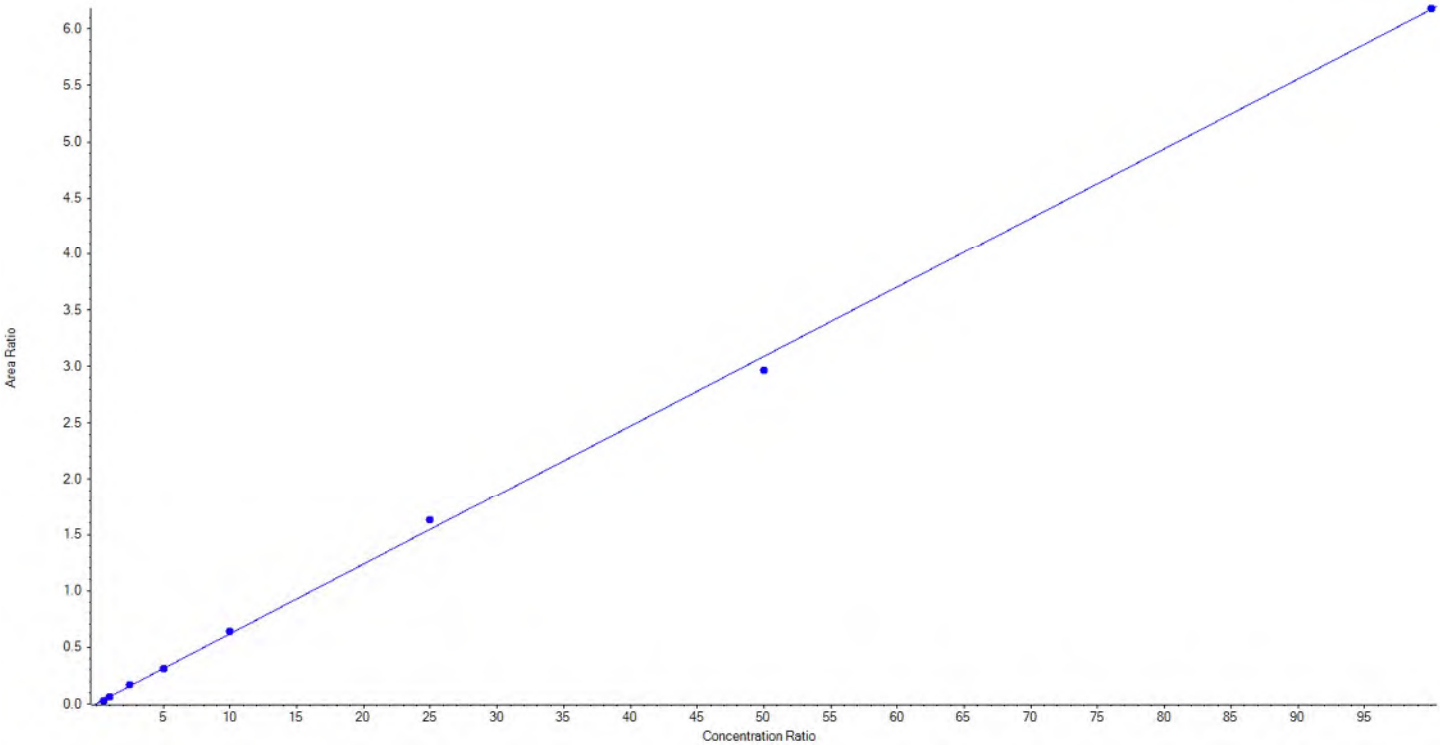
Calibration Summary Report

Analyte Name	PFTrDA_2	**Data File**	5500_06122018.wiff
MRM Transition	663.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.06169 x + 0.00409 (r = 0.99944) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	42.710965	85.4
4	JV66	L3	True	100.00	101.078791	101.1
5	JV67	L4	True	250.00	268.774951	107.5
6	JV68	L5	True	500.00	503.487021	100.7
7	JV69	L6	True	1000.00	1037.186073	103.7
8	JV70	L7	True	2500.00	2637.864972	105.5
9	JV71	L8	True	5000.00	4796.971525	95.9
10	JV72	L9	True	10000.00	10011.925702	100.1



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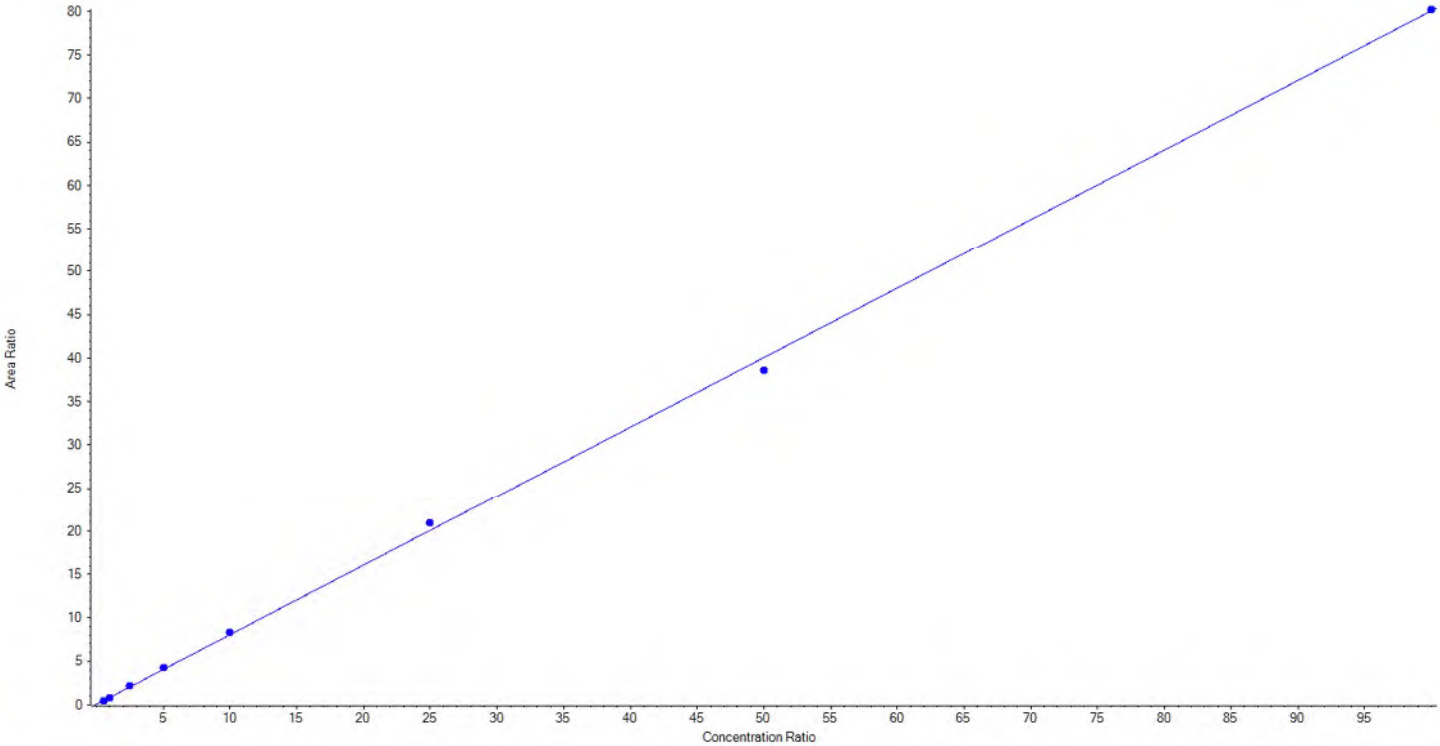
Calibration Summary Report

Analyte Name	PFTeDA_1	**Data File**	5500_06122018.wiff
MRM Transition	713.0 / 669.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.80004 x + 0.06870 (r = 0.99959) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	45.773410	91.6
4	JV66	L3	True	100.00	94.128615	94.1
5	JV67	L4	True	250.00	264.348234	105.7
6	JV68	L5	True	500.00	524.723513	104.9
7	JV69	L6	True	1000.00	1029.276875	102.9
8	JV70	L7	True	2500.00	2603.251203	104.1
9	JV71	L8	True	5000.00	4819.785187	96.4
10	JV72	L9	True	10000.00	10018.712963	100.2



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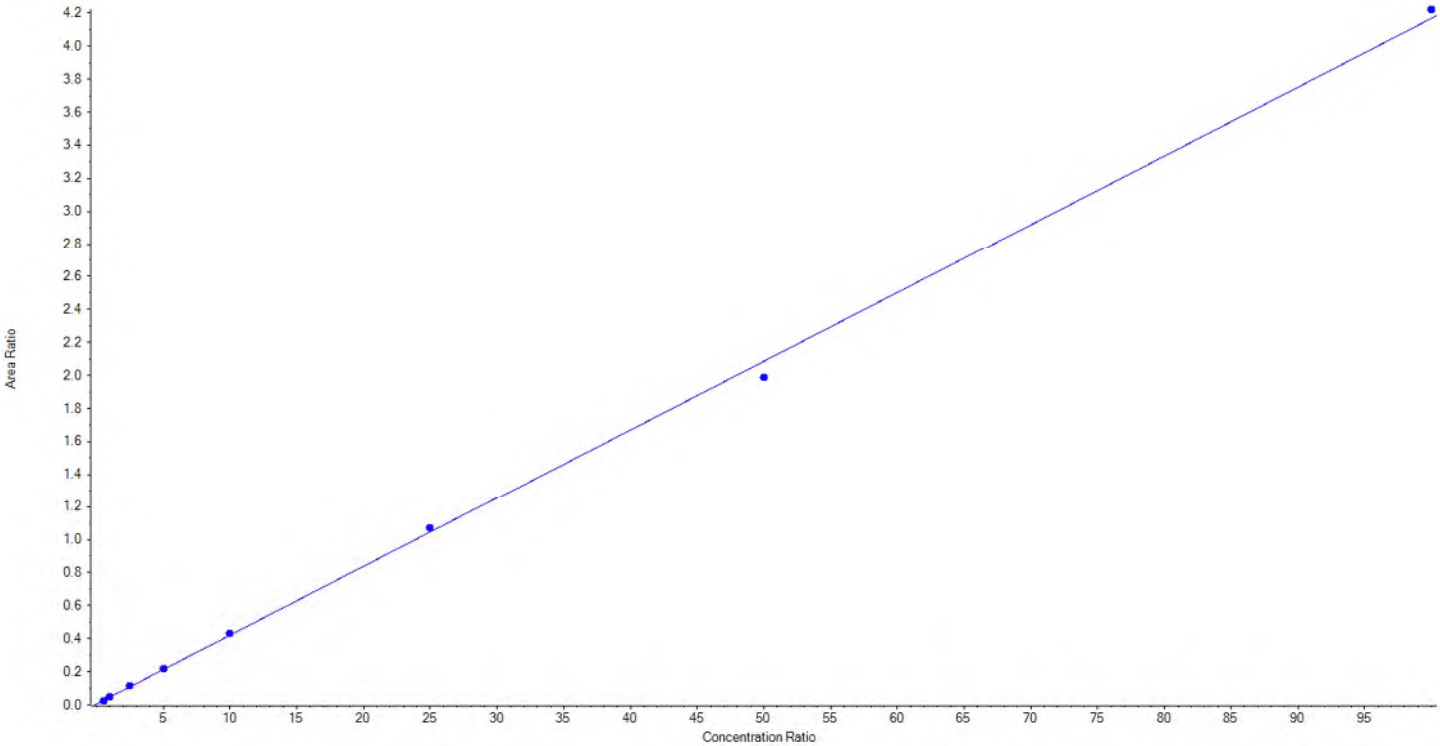
Calibration Summary Report

Analyte Name	PFTeDA_2	**Data File**	5500_06122018.wiff
MRM Transition	713.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04161 x + 0.00538 (r = 0.99955) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	44.375819	88.8
4	JV66	L3	True	100.00	103.538442	103.5
5	JV67	L4	True	250.00	259.862901	104.0
6	JV68	L5	True	500.00	508.886391	101.8
7	JV69	L6	True	1000.00	1031.689261	103.2
8	JV70	L7	True	2500.00	2553.743509	102.2
9	JV71	L8	True	5000.00	4768.977837	95.4
10	JV72	L9	True	10000.00	10128.925840	101.3



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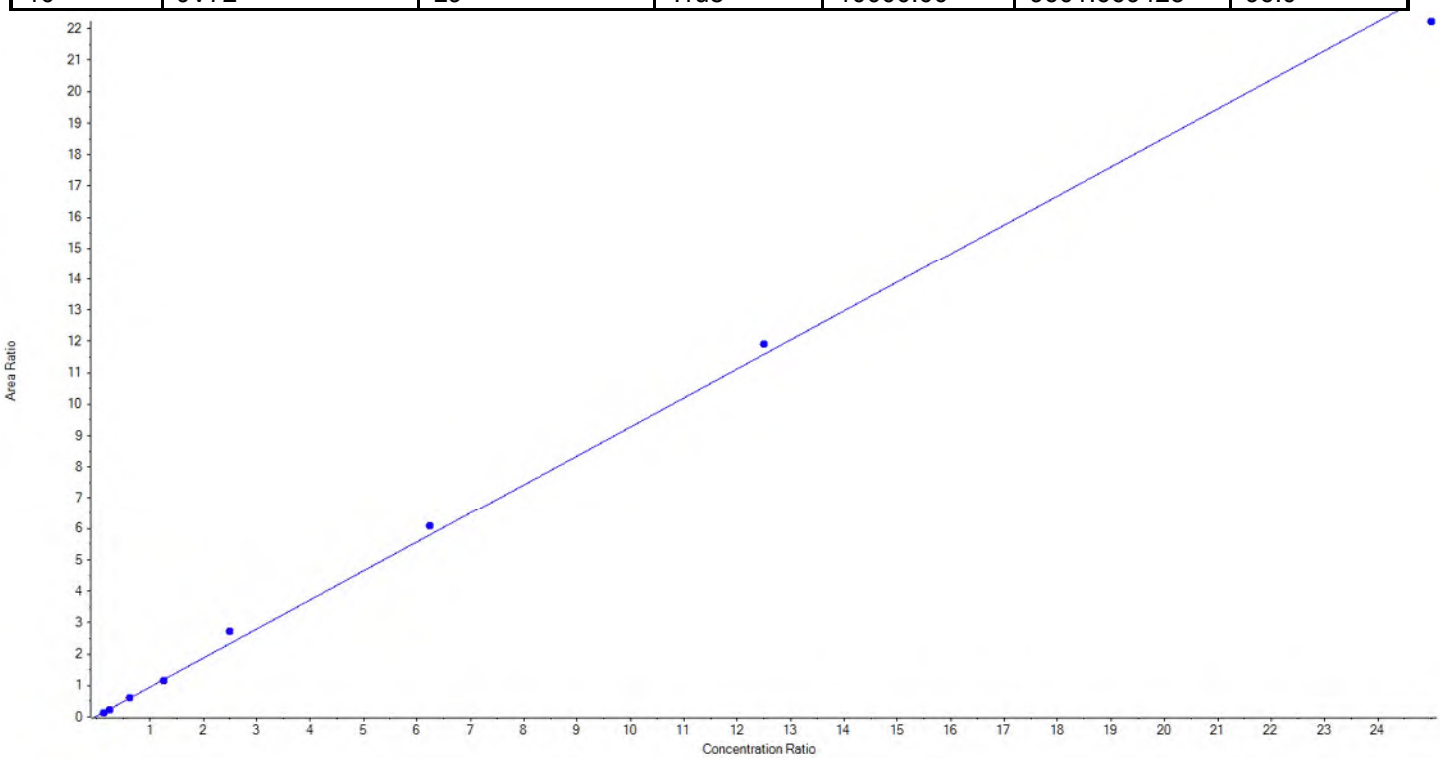
Calibration Summary Report

Analyte Name	NMeFOSAA_1	**Data File**	5500_06122018.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.92525 x + 0.02274 (r = 0.99850) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	44.993770	90.0
4	JV66	L3	True	100.00	89.798642	89.8
5	JV67	L4	True	250.00	254.880308	102.0
6	JV68	L5	True	500.00	492.964120	98.6
7	JV69	L6	True	1000.00	1162.362016	116.2
8	JV70	L7	True	2500.00	2617.467082	104.7
9	JV71	L8	True	5000.00	5135.864638	102.7
10	JV72	L9	True	10000.00	9601.669425	96.0



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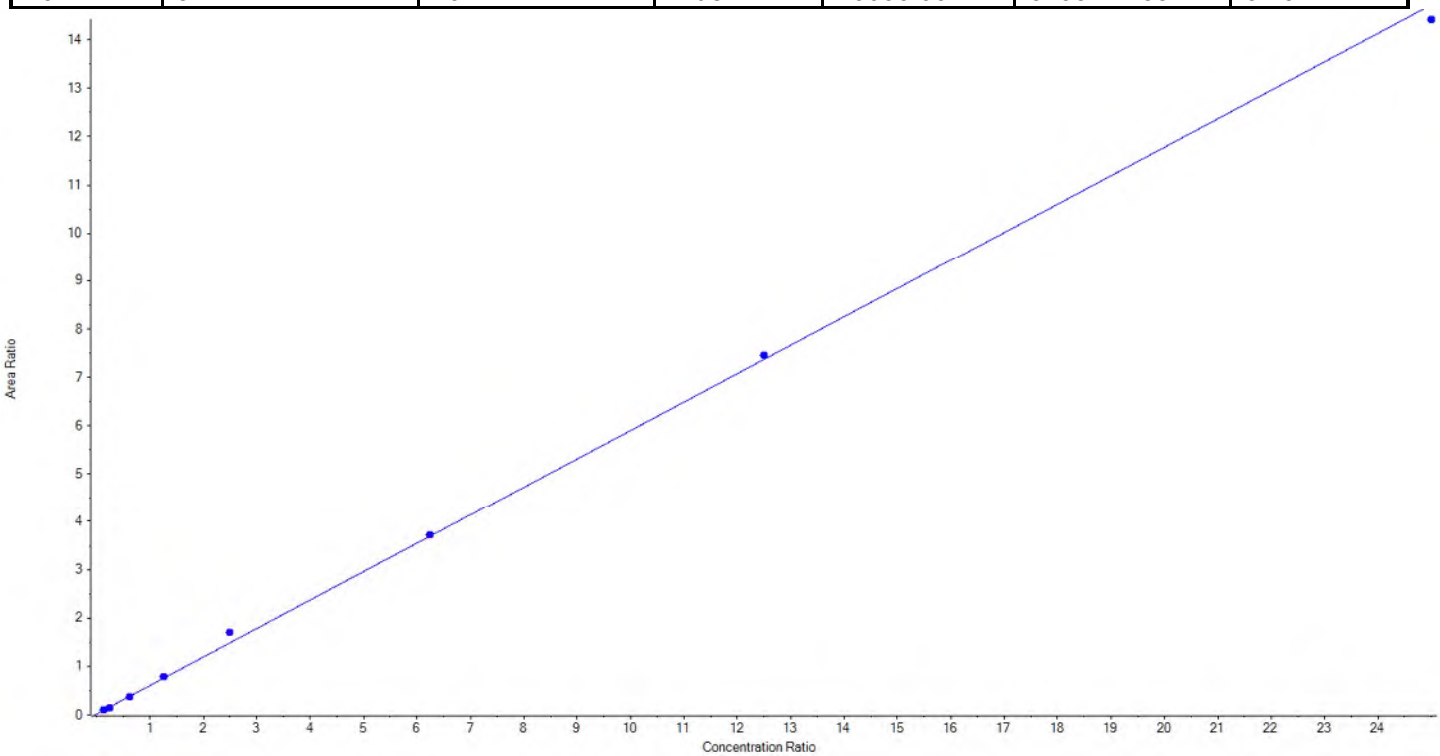
Calibration Summary Report

Analyte Name	NMeFOSAA_2	**Data File**	5500_06122018.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.58812 x + 0.01851 (r = 0.99910) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	53.131505	106.3
4	JV66	L3	True	100.00	81.277095	81.3
5	JV67	L4	True	250.00	234.789364	93.9
6	JV68	L5	True	500.00	521.635618	104.3
7	JV69	L6	True	1000.00	1146.164220	114.6
8	JV70	L7	True	2500.00	2513.765137	100.6
9	JV71	L8	True	5000.00	5055.762729	101.1
10	JV72	L9	True	10000.00	9793.474332	97.9



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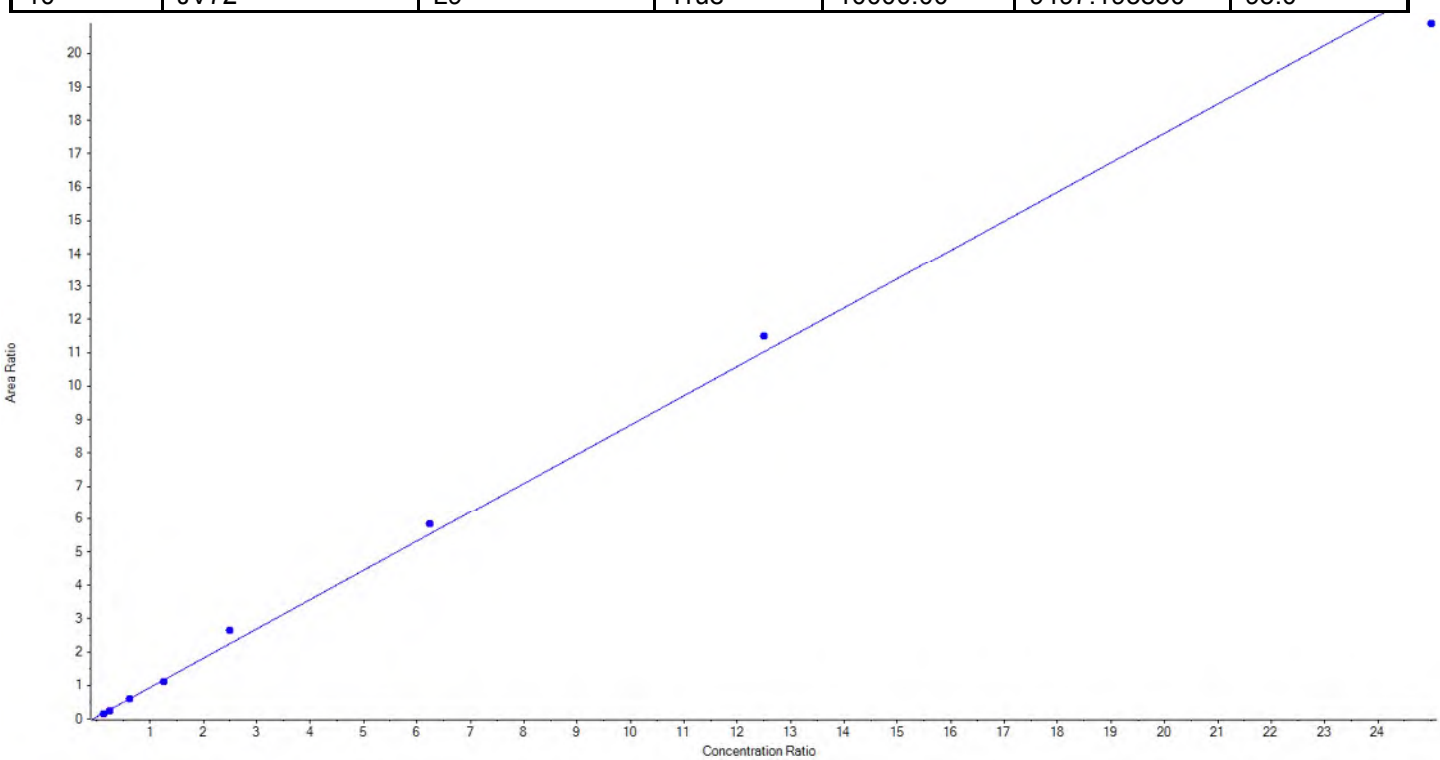
Calibration Summary Report

Analyte Name	NEtFOSAA_1	**Data File**	5500_06122018.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.87755 x + 0.05939 (r = 0.99776) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	47.804781	95.6
4	JV66	L3	True	100.00	84.814537	84.8
5	JV67	L4	True	250.00	252.859431	101.1
6	JV68	L5	True	500.00	476.518984	95.3
7	JV69	L6	True	1000.00	1182.459476	118.3
8	JV70	L7	True	2500.00	2637.173291	105.5
9	JV71	L8	True	5000.00	5221.175648	104.4
10	JV72	L9	True	10000.00	9497.193850	95.0



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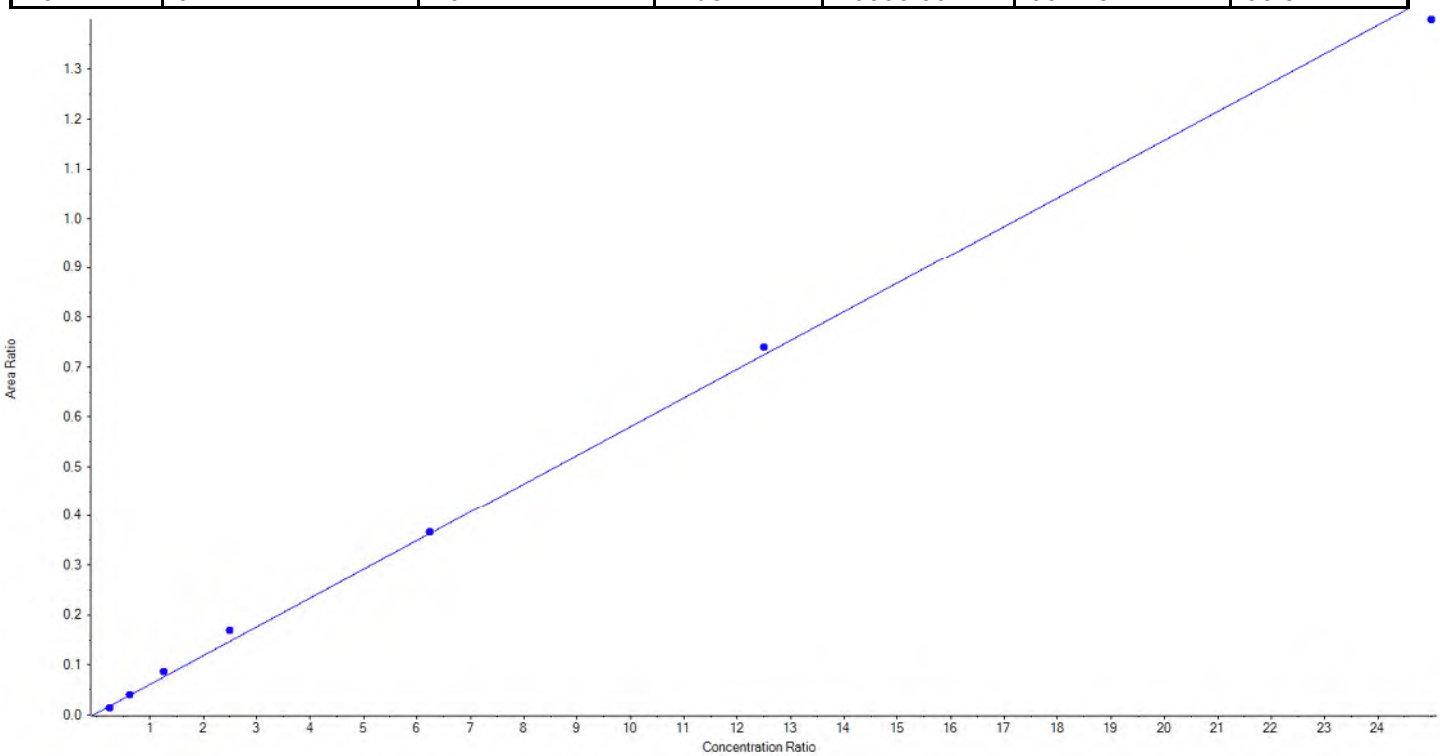
Calibration Summary Report

Analyte Name	NEtFOSAA_2	**Data File**	5500_06122018.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.05771 x + 0.00339 (r = 0.99834) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	False	50.00	N/A	N/A
4	JV66	L3	True	100.00	70.704094	70.7
5	JV67	L4	True	250.00	249.151225	99.7
6	JV68	L5	True	500.00	575.232732	115.1
7	JV69	L6	True	1000.00	1149.132061	114.9
8	JV70	L7	True	2500.00	2516.924520	100.7
9	JV71	L8	True	5000.00	5111.012896	102.2
10	JV72	L9	True	10000.00	9677.842472	96.8



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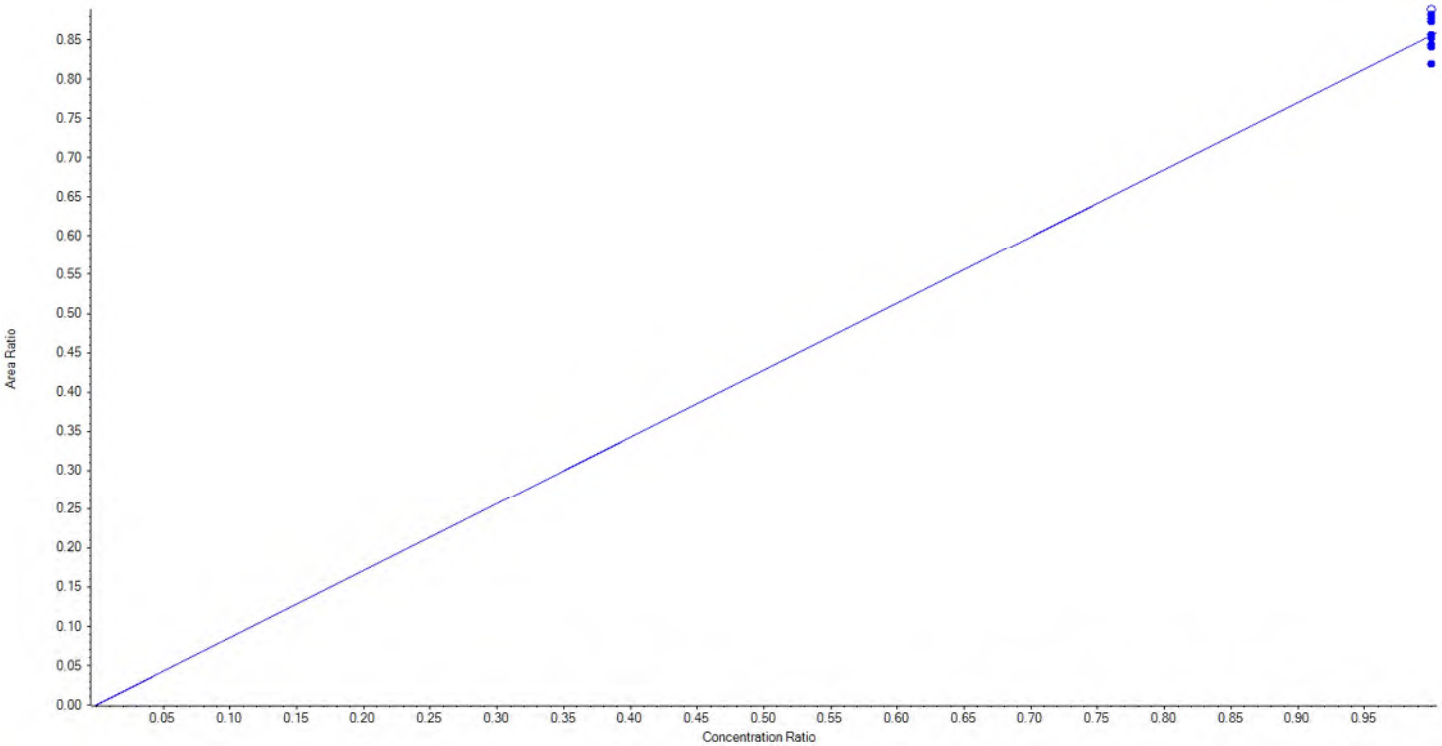
Calibration Summary Report

Analyte Name	13C2-PFHxA	**Data File**	5500_06122018.wiff
MRM Transition	315.0 / 270.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.85593 x (std. dev. = 0.02127) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	100.00	103.826493	103.8
3	JV65	L2	True	100.00	98.362167	98.4
4	JV66	L3	True	100.00	98.546513	98.6
5	JV67	L4	True	100.00	102.514806	102.5
6	JV68	L5	True	100.00	100.112660	100.1
7	JV69	L6	True	100.00	102.020172	102.0
8	JV70	L7	True	100.00	103.073545	103.1
9	JV71	L8	True	100.00	95.703244	95.7
10	JV72	L9	True	100.00	99.666895	99.7



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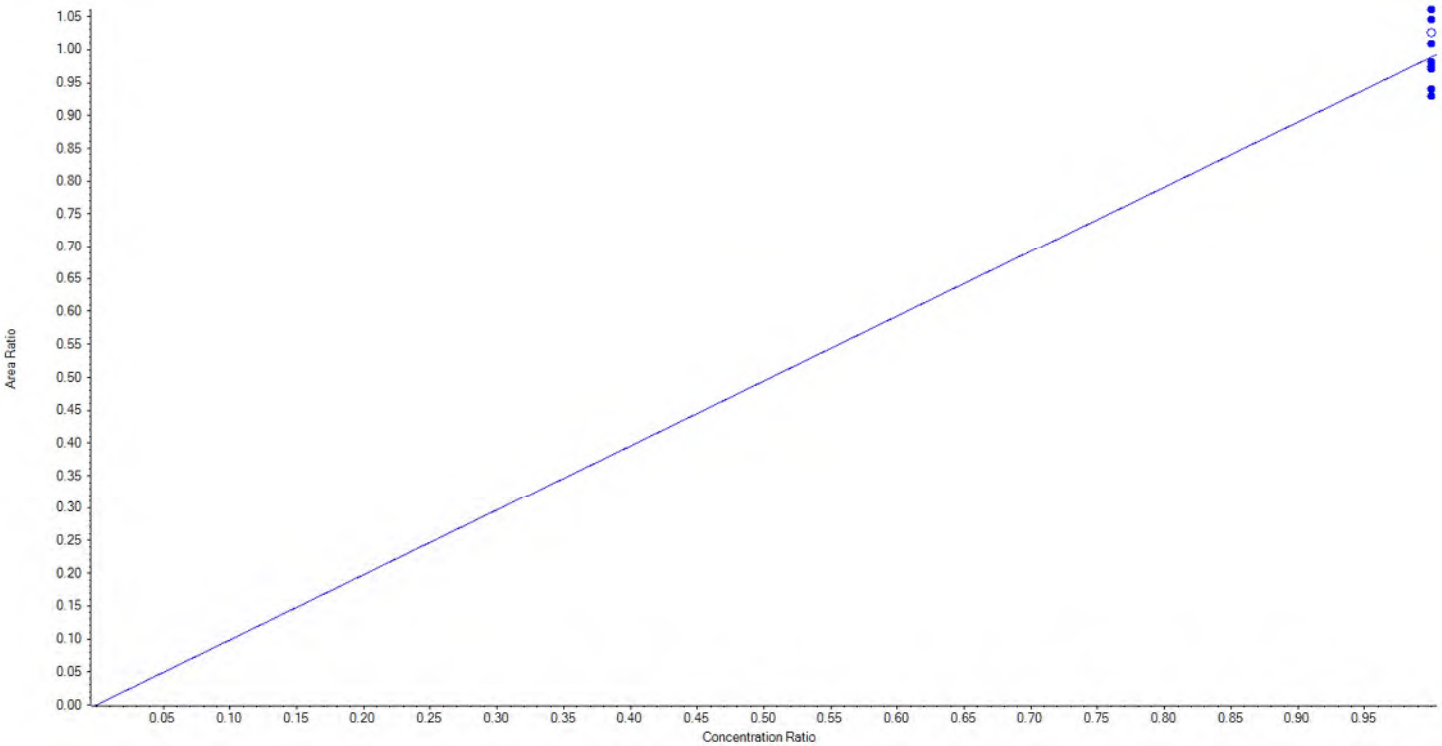
Calibration Summary Report

Analyte Name	13C2-PFDA	**Data File**	5500_06122018.wiff
MRM Transition	515.0 / 470.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.98879 x (std. dev. = 0.04671) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	100.00	103.793044	103.8
3	JV65	L2	True	100.00	99.261688	99.3
4	JV66	L3	True	100.00	107.290336	107.3
5	JV67	L4	True	100.00	98.448003	98.5
6	JV68	L5	True	100.00	93.973160	94.0
7	JV69	L6	True	100.00	105.734482	105.7
8	JV70	L7	True	100.00	101.992396	102.0
9	JV71	L8	True	100.00	98.147502	98.2
10	JV72	L9	True	100.00	95.152433	95.2



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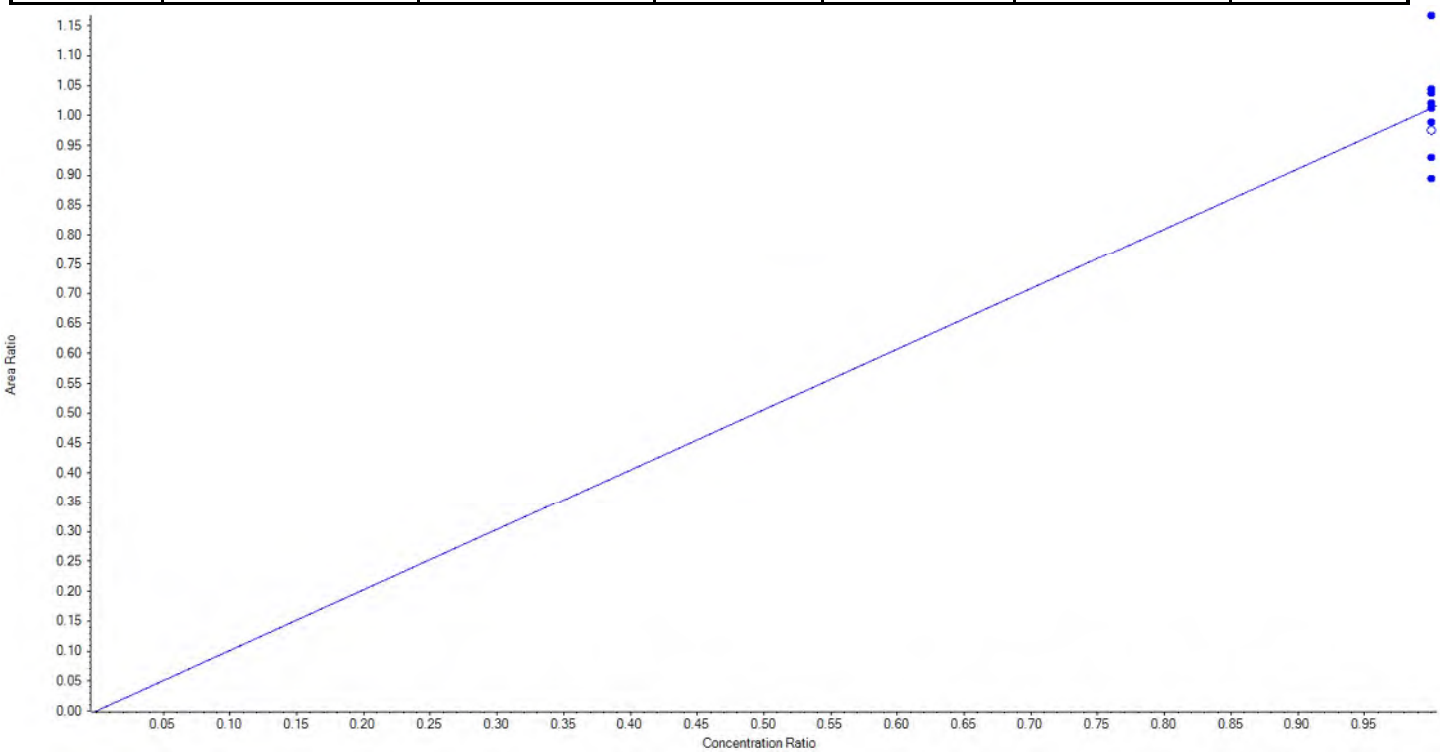
Calibration Summary Report

Analyte Name	d5-EtFOSAA	**Data File**	5500_06122018.wiff
MRM Transition	589.0 / 419.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.01193 x (std. dev. = 0.08181) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	400.00	385.189978	96.3
3	JV65	L2	True	400.00	399.938124	100.0
4	JV66	L3	True	400.00	390.619734	97.7
5	JV67	L4	True	400.00	413.043907	103.3
6	JV68	L5	True	400.00	403.481140	100.9
7	JV69	L6	True	400.00	461.284729	115.3
8	JV70	L7	True	400.00	367.536923	91.9
9	JV71	L8	True	400.00	410.296897	102.6
10	JV72	L9	True	400.00	353.798544	88.5



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Calibration Summary Report

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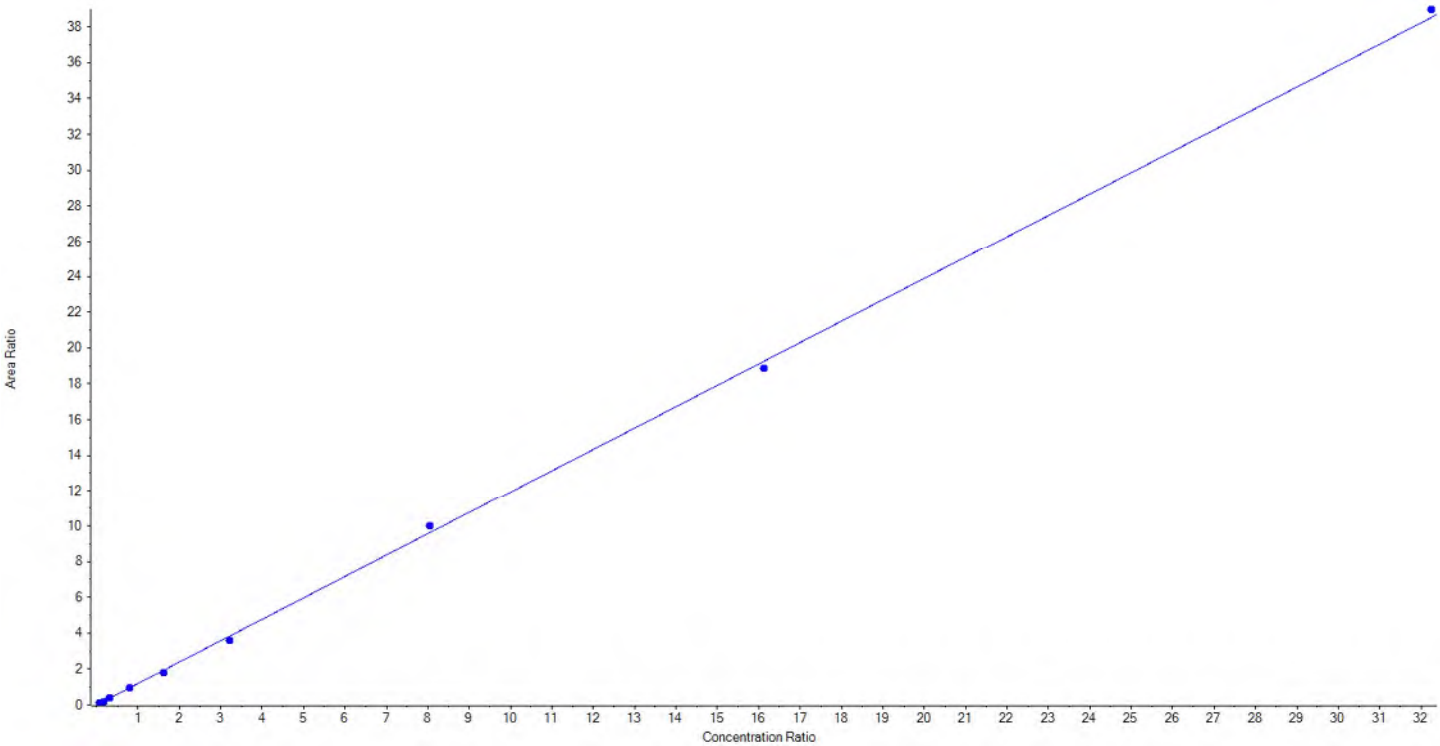
Printed: 19/06/2018 2:42:29 PM

Analyte Name	PFOS_1	**Data File**	06142018.wiff
MRM Transition	499.0 / 80.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.19453 x + -0.00221 (r = 0.99959) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	23.15	28.015493	121.0
3	JV65	L2	True	46.30	43.697818	94.4
4	JV66	L3	True	92.60	88.423565	95.5
5	JV67	L4	True	231.50	232.851067	100.6
6	JV68	L5	True	463.00	425.865535	92.0
7	JV69	L6	True	925.60	869.286737	93.9
8	JV70	L7	True	2314.00	2395.472838	103.5
9	JV71	L8	True	4628.00	4533.371720	98.0
10	JV72	L9	True	9256.00	9363.165227	101.2



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Calibration Summary Report

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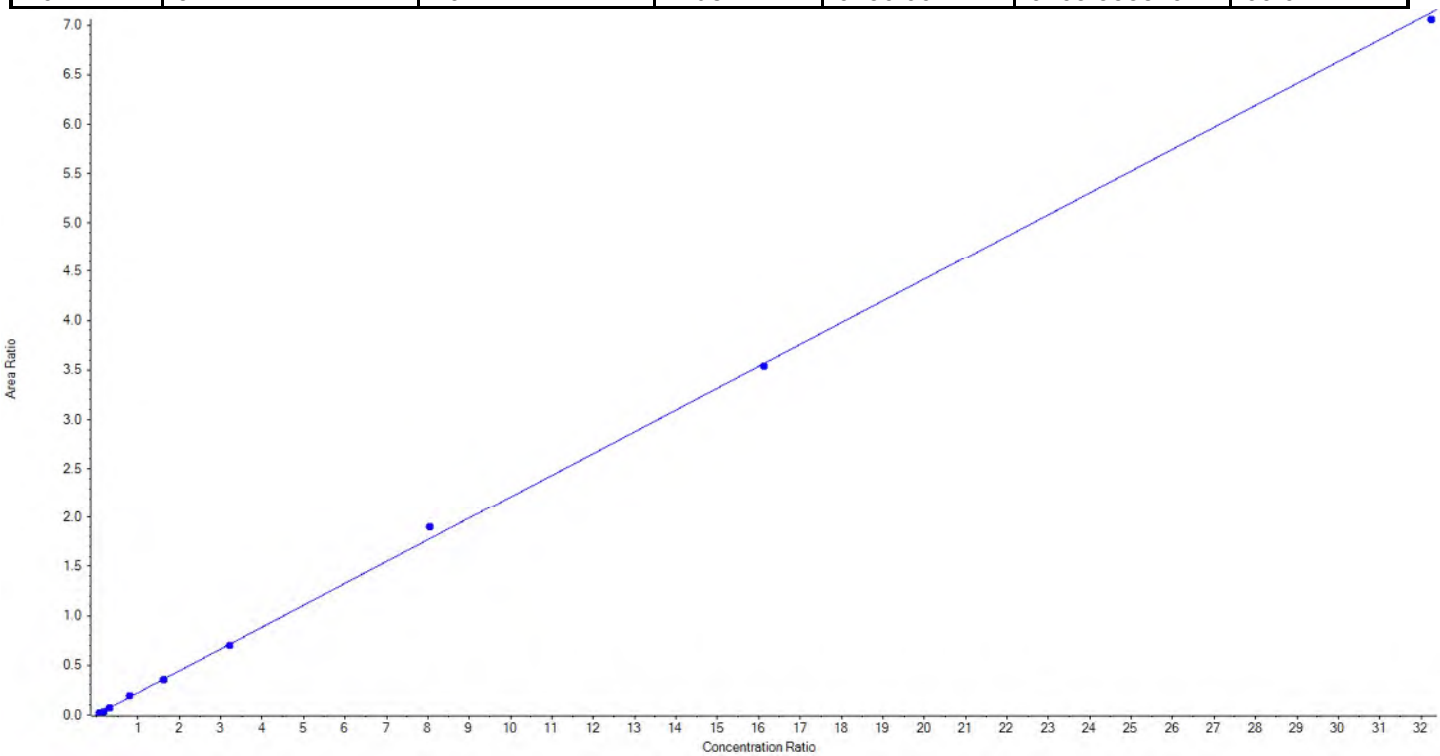
Analyte Name	PFOS_2	**Data File**	06142018.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.22092 x + 0.00318 (r = 0.99956) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	23.15	26.735128	115.5
3	JV65	L2	True	46.30	36.731310	79.3
4	JV66	L3	True	92.60	88.887552	96.0
5	JV67	L4	True	231.50	249.396516	107.7
6	JV68	L5	True	463.00	458.995774	99.1
7	JV69	L6	True	925.60	905.536816	97.8
8	JV70	L7	True	2314.00	2459.747244	106.3
9	JV71	L8	True	4628.00	4590.585831	99.2
10	JV72	L9	True	9256.00	9163.533829	99.0



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Calibration Summary Report

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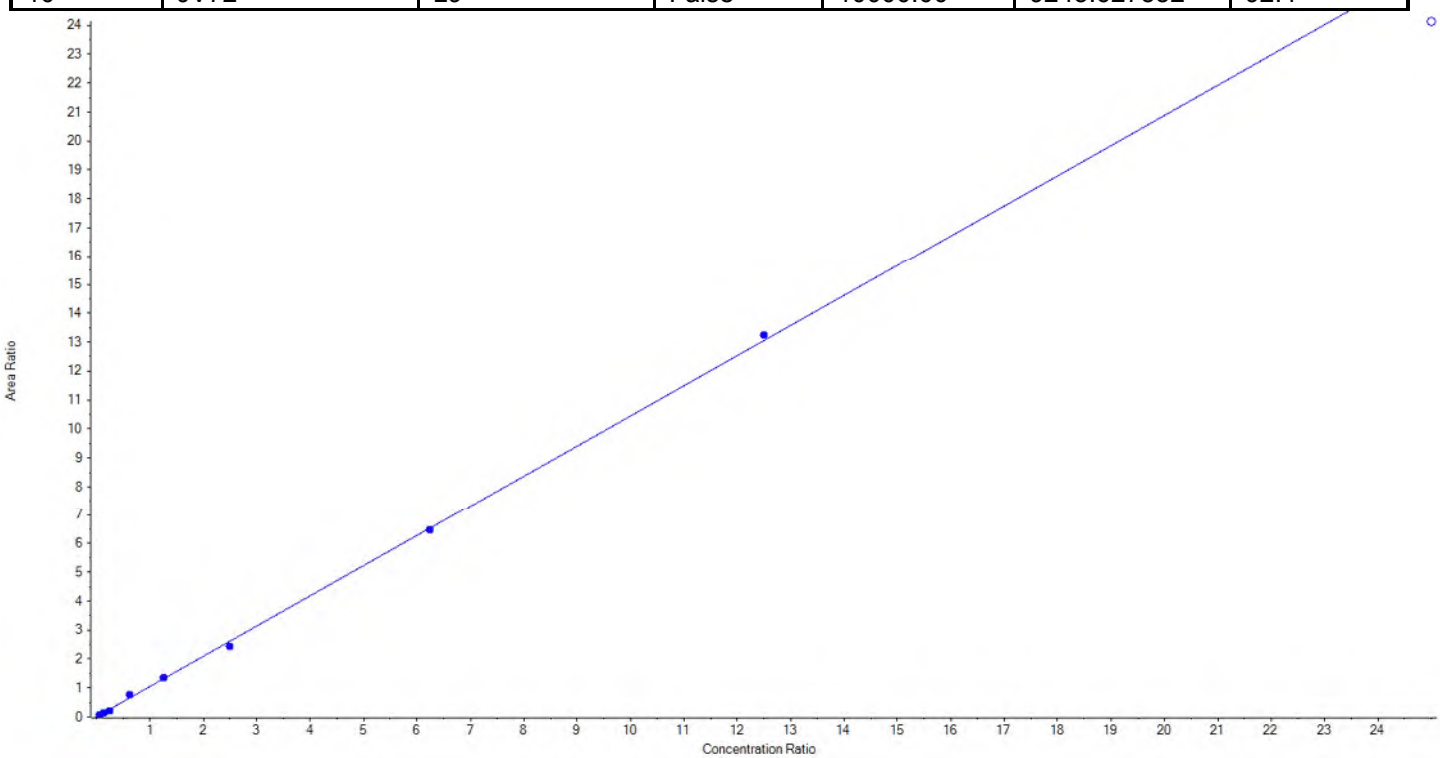
Analyte Name	NMeFOSAA_1	**Data File**	06142018.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.04367 x + 0.00890 (r = 0.99895) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	25.00	27.548977	110.2
3	JV65	L2	True	50.00	50.212959	100.4
4	JV66	L3	True	100.00	78.681781	78.7
5	JV67	L4	True	250.00	288.160229	115.3
6	JV68	L5	True	500.00	513.619150	102.7
7	JV69	L6	True	1000.00	923.273499	92.3
8	JV70	L7	True	2500.00	2475.552639	99.0
9	JV71	L8	True	5000.00	5067.950766	101.4
10	JV72	L9	False	10000.00	9243.627332	92.4



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Calibration Summary Report

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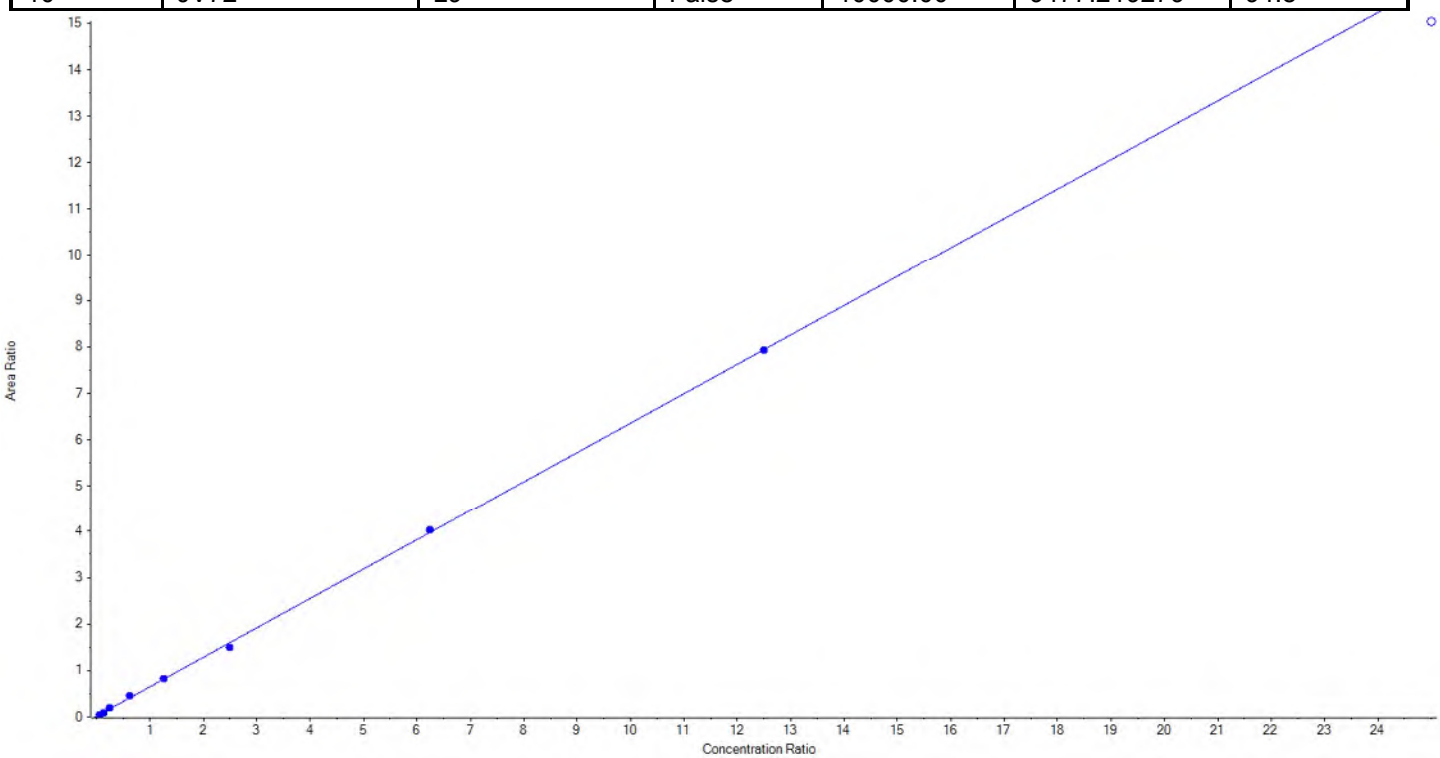
Analyte Name	NMeFOSAA_2	**Data File**	06142018.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.63405 x + 0.01526 (r = 0.99945) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	25.00	22.615513	90.5
3	JV65	L2	True	50.00	47.579201	95.2
4	JV66	L3	True	100.00	107.001946	107.0
5	JV67	L4	True	250.00	275.582161	110.2
6	JV68	L5	True	500.00	515.586020	103.1
7	JV69	L6	True	1000.00	928.182576	92.8
8	JV70	L7	True	2500.00	2532.011080	101.3
9	JV71	L8	True	5000.00	4996.441503	99.9
10	JV72	L9	False	10000.00	9477.219279	94.8



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Calibration Summary Report

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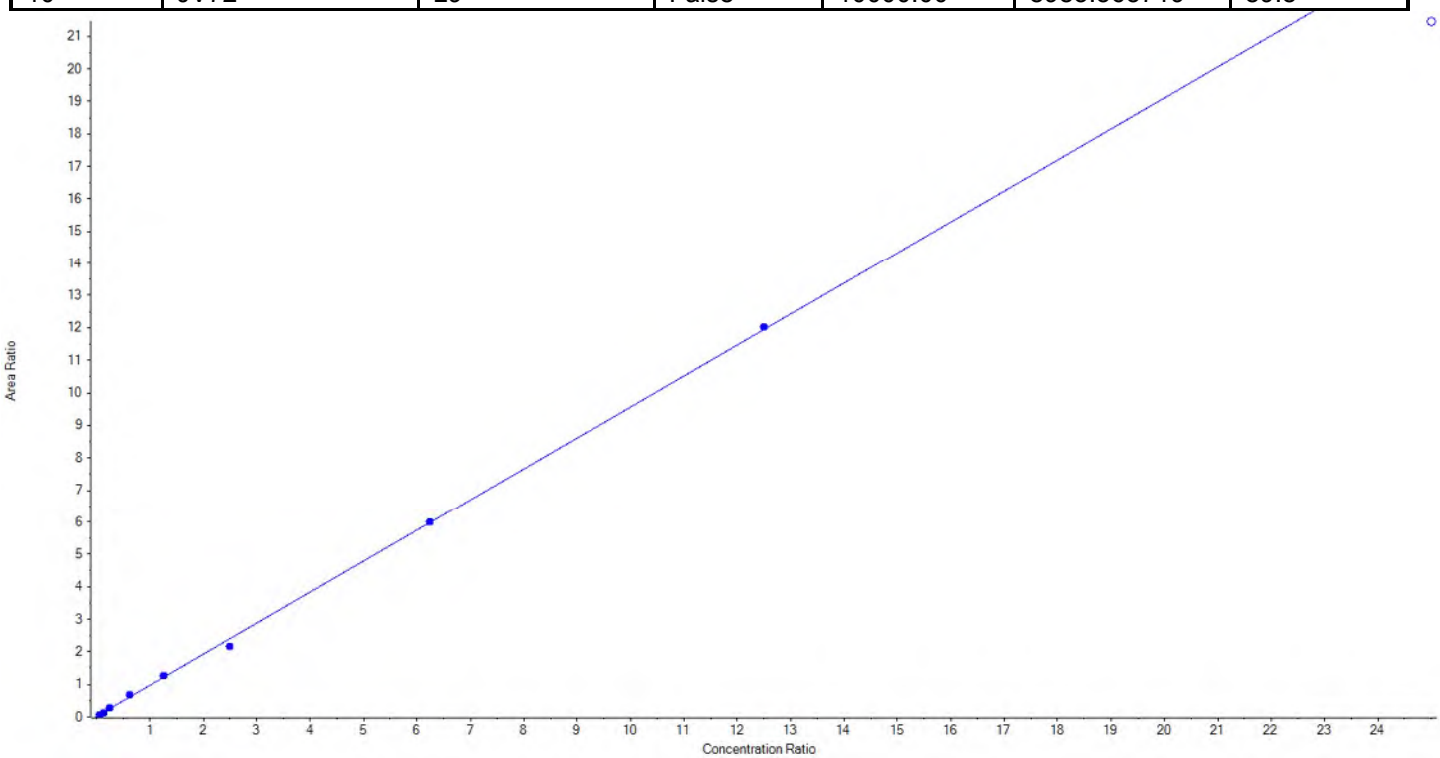
Analyte Name	NEtFOSAA_1	**Data File**	06142018.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.95440 x + 0.01894 (r = 0.99905) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	25.00	21.706634	86.8
3	JV65	L2	True	50.00	50.086096	100.2
4	JV66	L3	True	100.00	104.127892	104.1
5	JV67	L4	True	250.00	281.802609	112.7
6	JV68	L5	True	500.00	526.305609	105.3
7	JV69	L6	True	1000.00	899.501802	90.0
8	JV70	L7	True	2500.00	2505.582444	100.2
9	JV71	L8	True	5000.00	5035.886915	100.7
10	JV72	L9	False	10000.00	8983.565719	89.8



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Calibration Summary Report

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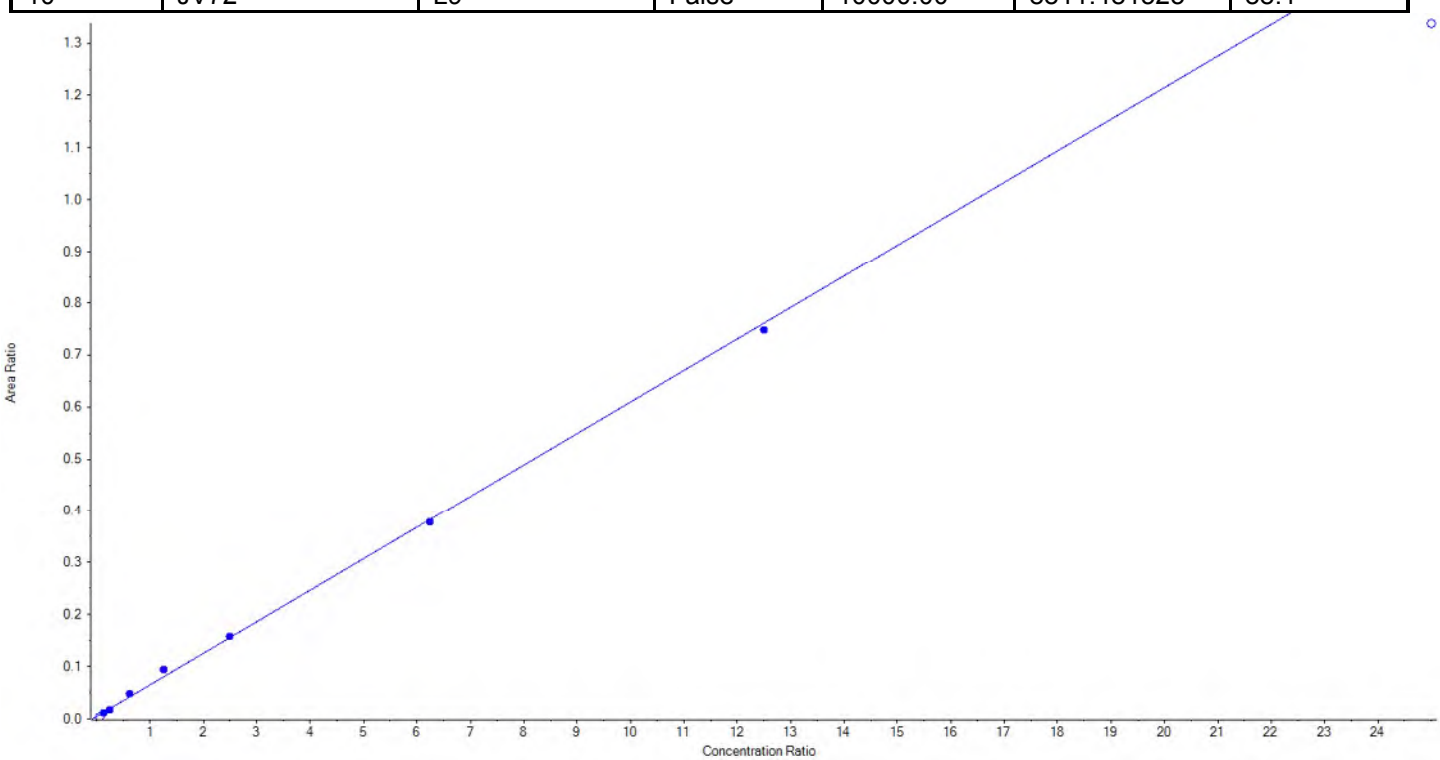
Analyte Name	NEtFOSAA_2	**Data File**	06142018.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.06052 x + 0.00462 (r = 0.99821) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	< 0	N/A
3	JV65	L2	True	50.00	43.168842	86.3
4	JV66	L3	True	100.00	81.448858	81.5
5	JV67	L4	True	250.00	288.381153	115.4
6	JV68	L5	True	500.00	590.474442	118.1
7	JV69	L6	True	1000.00	1018.984274	101.9
8	JV70	L7	True	2500.00	2465.841563	98.6
9	JV71	L8	True	5000.00	4911.700867	98.2
10	JV72	L9	False	10000.00	8811.481525	88.1



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Calibration Summary Report

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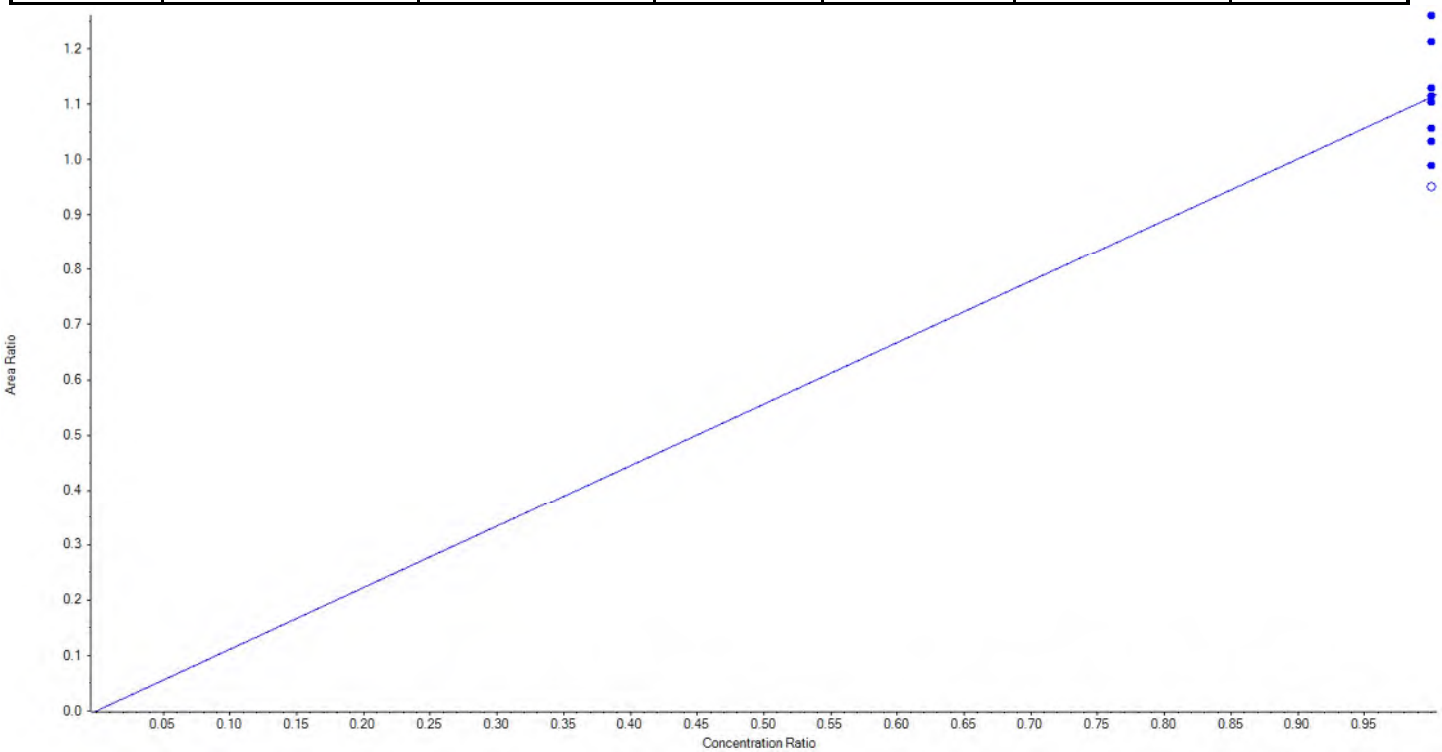
Analyte Name	d5-EtFOSAA	**Data File**	06142018.wiff
MRM Transition	589.0 / 419.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.11254 x (std. dev. = 0.08984) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	400.00	396.921758	99.2
3	JV65	L2	True	400.00	400.504113	100.1
4	JV66	L3	True	400.00	435.919053	109.0
5	JV67	L4	True	400.00	453.035977	113.3
6	JV68	L5	True	400.00	371.472099	92.9
7	JV69	L6	True	400.00	380.216917	95.1
8	JV70	L7	True	400.00	406.078069	101.5
9	JV71	L8	True	400.00	355.852014	89.0
10	JV72	L9	False	400.00	342.335253	85.6



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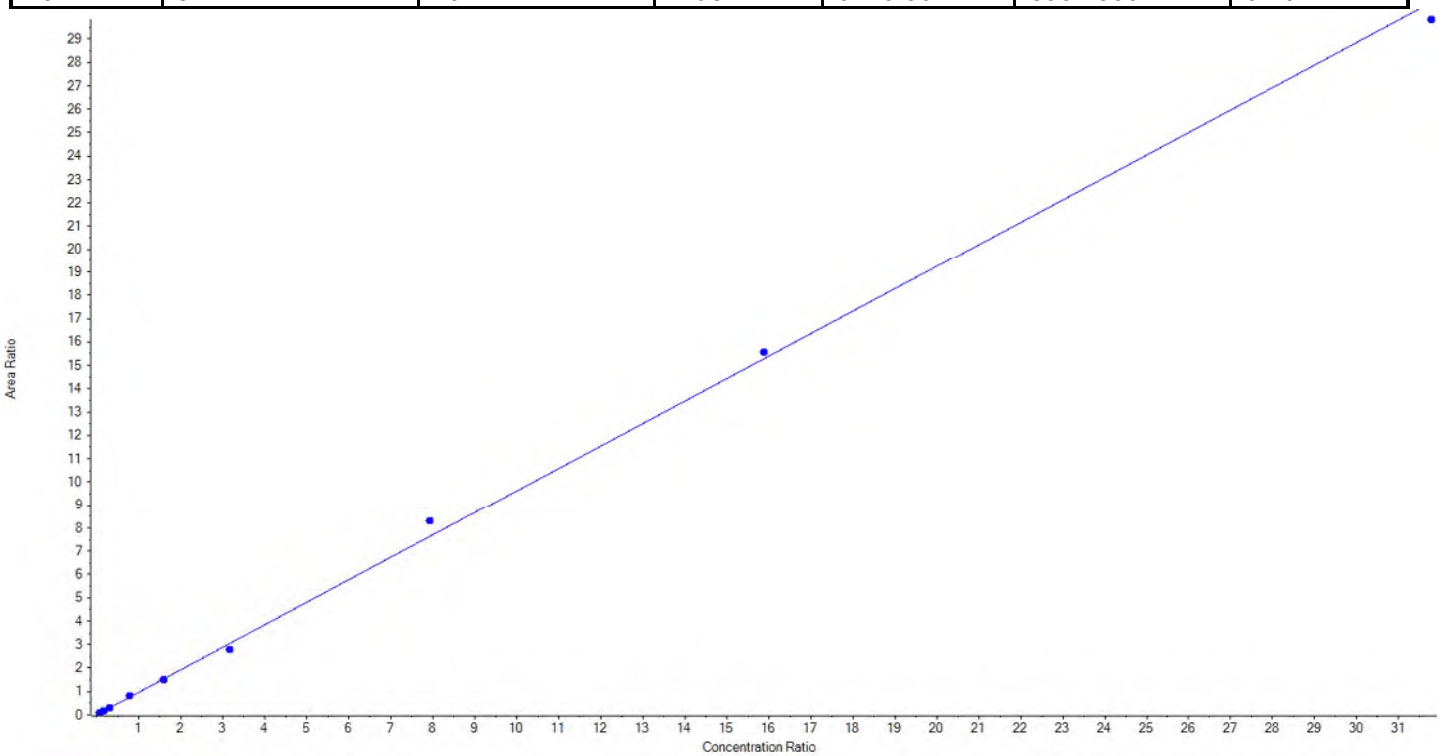
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	PFHxS_1	**Data File**	06142018.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.96173 x + 8.14311e-4 (r = 0.99904) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	22.80	23.113979	101.4
3	JV65	L2	True	45.60	45.133652	99.0
4	JV66	L3	True	91.20	85.929781	94.2
5	JV67	L4	True	228.00	242.553797	106.4
6	JV68	L5	True	456.00	451.959127	99.1
7	JV69	L6	True	912.00	835.159405	91.6
8	JV70	L7	True	2280.00	2480.305200	108.8
9	JV71	L8	True	4560.00	4649.105634	102.0
10	JV72	L9	True	9120.00	8902.339424	97.6



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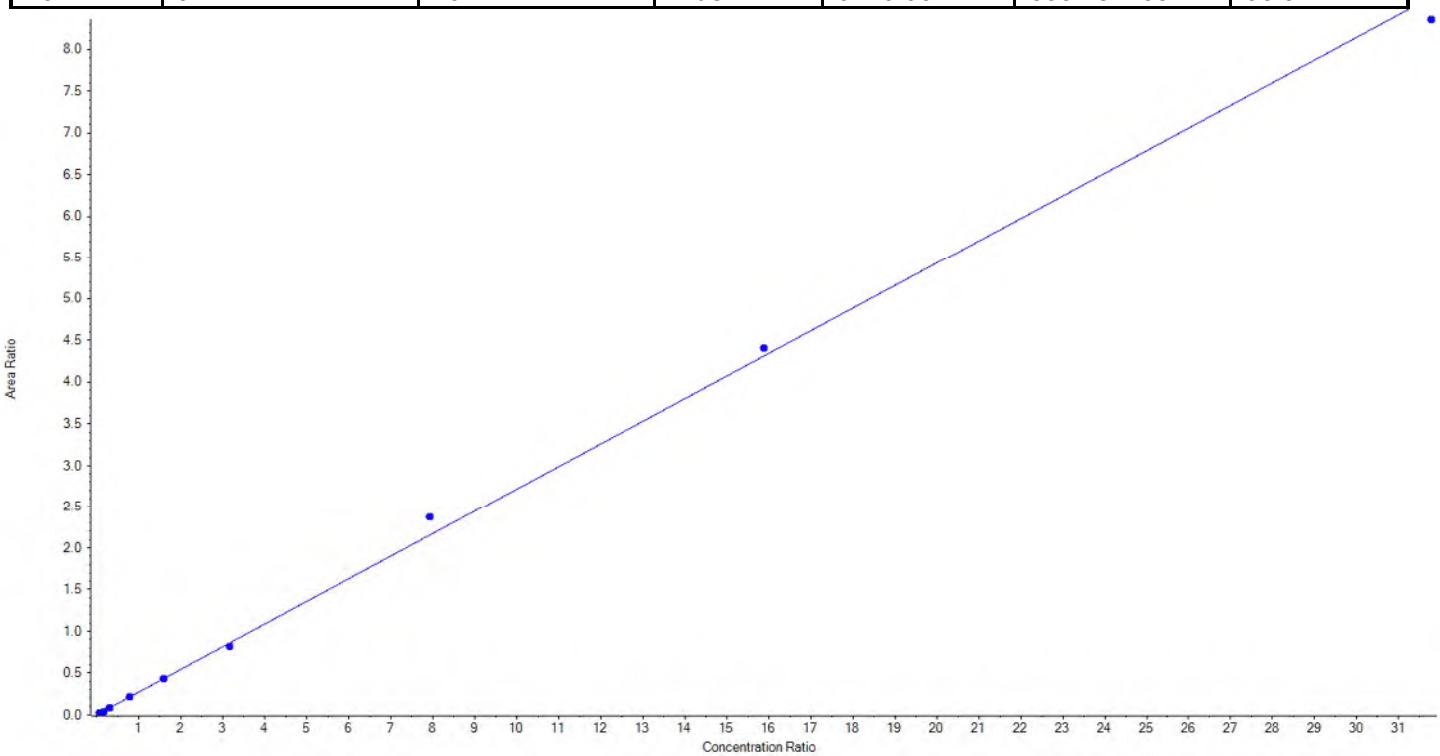
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	PFHxS_2	**Data File**	06142018.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.27149 x + 2.53933e-4 (r = 0.99889) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	22.80	22.866571	100.3
3	JV65	L2	True	45.60	42.803628	93.9
4	JV66	L3	True	91.20	89.969775	98.7
5	JV67	L4	True	228.00	233.773888	102.5
6	JV68	L5	True	456.00	461.321184	101.2
7	JV69	L6	True	912.00	860.777010	94.4
8	JV70	L7	True	2280.00	2508.578625	110.0
9	JV71	L8	True	4560.00	4660.695287	102.2
10	JV72	L9	True	9120.00	8834.814031	96.9



	Drinking Water Calibration Curve Concentrations (ng/L)								
	JV64	**JV65**	**JV66**	**JV67**	**JV68**	**JV69**	**JV70**	**JV71**	**JV72**
PFHxA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFHpA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFOA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFNA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFUnA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDoA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTrDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTeDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NMeFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NEtFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFBS	22.15	44.30	88.60	221.50	443.00	885.00	2,212.50	4,425.00	8,850.00
PFHxS (branched)	22.80	45.60	91.20	228.00	456.00	912.00	2,280.00	4,560.00	9,120.00
PFOS (branched)	23.15	46.30	92.60	231.50	463.00	925.60	2,314.00	4,628.00	9,256.00
	Surrogates								
13C2-PFHxA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C2-PFDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
d5-EtFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Internal Standards								
13C2-PFOA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C4-PFOS	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00
d3-MeFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00

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Summary Quant Report

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Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T15:56:17	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	22584.33	43.213844	233.3	false
PFBS_2	298.9 / 99.0	1.53	8020.23	45.544704	154.6	false
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	true
PFHxA_2	313.0 / 119.0	1.83	3416.41	49.540681	16.0	false
PFHpA_1	363.0 / 319.0	2.20	39602.54	42.712949	55.4	false
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	2.22	29391.35	46.187690	63.0	false
PFHxS_2	399.0 / 99.0	2.22	7706.49	49.529878	57.5	false
PFOA_1	413.0 / 369.0	2.58	60274.17	50.338209	58.1	false
PFOA_2	413.0 / 169.0	2.58	4975.65	52.109683	46.0	false
PFNA_1	463.0 / 419.0	2.97	34096.88	39.449837	42.7	true
PFNA_2	463.0 / 219.0	2.97	9583.30	42.777773	28.2	true
PFOS_1	499.0 / 80.0	2.96	35885.10	48.187813	5.2	true
PFOS_2	499.0 / 99.0	2.96	7428.68	48.850325	5.7	true
PFDA_1	513.0 / 469.0	3.32	37282.74	44.435832	141.0	false
PFDA_2	513.0 / 219.0	3.32	2288.68	55.236183	111.0	true
PFUnA_1	563.0 / 519.0	3.65	31003.86	37.715784	141.0	false
PFUnA_2	563.0 / 269.0	3.64	2030.45	43.007491	81.5	false
PFDoA_1	613.0 / 569.0	3.93	30166.02	41.996263	144.2	false
PFDoA_2	613.0 / 319.0	3.94	5050.86	37.377887	207.0	false
PFTrDA_1	663.0 / 619.0	4.19	28870.54	43.306796	270.0	false
PFTrDA_2	663.0 / 169.0	4.18	1964.79	42.710965	112.4	false
PFTeDA_1	713.0 / 669.0	4.41	28075.19	45.773410	412.1	false
PFTeDA_2	713.0 / 169.0	4.41	1538.97	44.375819	169.5	false
NMeFOSAA_1	570.0 / 419.0	3.47	3810.46	44.993770	208.8	false
NMeFOSAA_2	570.0 / 512.0	3.47	2903.36	53.131505	184.1	false
NEtFOSAA_1	584.0 / 419.0	3.63	4935.75	47.804781	153.6	false
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	54349.20	98.362167	927.1	false
13C2-PFDA	515.0 / 470.0	3.31	63359.33	99.261688	1456.8	false
d5-EtFOSAA	589.0 / 419.0	3.63	30401.57	399.938124	236.0	false

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Summary Quant Report

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Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:05:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	41377.18	89.988738	366.3	false
PFBS_2	298.9 / 99.0	1.53	13447.77	90.777650	247.4	false
PFHxA_1	313.0 / 269.0	1.82	69625.97	93.424536	46.7	false
PFHxA_2	313.0 / 119.0	1.82	4147.06	87.486557	24.5	false
PFHpA_1	363.0 / 319.0	2.20	60751.90	95.603273	73.6	false
PFHpA_2	363.0 / 169.0	2.20	1748.37	86.912658	42.1	false
PFHxS_1	399.0 / 80.0	2.21	49279.92	87.480349	89.8	false
PFHxS_2	399.0 / 99.0	2.22	13226.99	88.910765	73.9	false
PFOA_1	413.0 / 369.0	2.59	69834.59	84.707195	68.4	false
PFOA_2	413.0 / 169.0	2.58	5579.02	84.079239	50.7	true
PFNA_1	463.0 / 419.0	2.97	59501.96	100.138720	72.7	true
PFNA_2	463.0 / 219.0	2.96	16823.16	102.807845	49.4	true
PFOS_1	499.0 / 80.0	2.96	61902.37	95.378162	6.7	true
PFOS_2	499.0 / 99.0	2.96	10820.51	84.477615	7.9	true
PFDA_1	513.0 / 469.0	3.32	57866.13	93.145766	196.6	false
PFDA_2	513.0 / 219.0	3.32	2439.89	76.398204	116.8	false
PFUnA_1	563.0 / 519.0	3.65	55101.99	96.757681	190.8	false
PFUnA_2	563.0 / 269.0	3.65	3066.76	96.202057	70.5	false
PFDoA_1	613.0 / 569.0	3.93	56886.05	102.502704	201.7	false
PFDoA_2	613.0 / 319.0	3.93	10301.87	107.351795	328.7	false
PFTrDA_1	663.0 / 619.0	4.19	50822.16	97.875153	340.0	false
PFTrDA_2	663.0 / 169.0	4.18	3618.72	101.078791	175.9	false
PFTeDA_1	713.0 / 669.0	4.41	44756.03	94.128615	467.7	false
PFTeDA_2	713.0 / 169.0	4.41	2639.13	103.538442	286.1	false
NMeFOSAA_1	570.0 / 419.0	3.47	6787.11	89.798642	310.2	false
NMeFOSAA_2	570.0 / 512.0	3.47	4064.47	81.277095	247.1	false
NEtFOSAA_1	584.0 / 419.0	3.63	7229.01	84.814537	295.3	false
NEtFOSAA_2	584.0 / 483.0	3.63	400.37	70.704094	40.6	false
13C2-PFHxA	315.0 / 270.0	1.82	45939.16	98.546513	726.0	false
13C2-PFDA	515.0 / 470.0	3.31	57778.49	107.290336	1159.1	false
d5-EtFOSAA	589.0 / 419.0	3.62	29103.66	390.619734	251.9	false

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Summary Quant Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:14:09	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	104133.34	247.673064	619.7	false
PFBS_2	298.9 / 99.0	1.53	31415.16	239.032605	455.9	false
PFHxA_1	313.0 / 269.0	1.83	140716.79	248.896045	70.7	false
PFHxA_2	313.0 / 119.0	1.83	10018.28	263.369148	39.2	false
PFHpA_1	363.0 / 319.0	2.20	152886.99	273.571001	121.1	false
PFHpA_2	363.0 / 169.0	2.20	4083.55	277.726029	105.6	false
PFHxS_1	399.0 / 80.0	2.22	134554.98	260.566228	152.5	false
PFHxS_2	399.0 / 99.0	2.22	36617.38	253.133590	123.6	false
PFOA_1	413.0 / 369.0	2.59	169858.27	265.523841	98.7	false
PFOA_2	413.0 / 169.0	2.58	12848.94	252.081302	84.3	false
PFNA_1	463.0 / 419.0	2.97	142948.22	264.651374	129.0	true
PFNA_2	463.0 / 219.0	2.96	38068.45	248.524822	84.6	true
PFOS_1	499.0 / 80.0	2.96	138527.01	234.863467	16.4	true
PFOS_2	499.0 / 99.0	2.96	28159.35	252.027708	20.2	true
PFDA_1	513.0 / 469.0	3.32	149468.44	261.832997	321.9	false
PFDA_2	513.0 / 219.0	3.31	7169.56	272.771787	294.8	false
PFUnA_1	563.0 / 519.0	3.64	141350.57	272.425126	260.5	false
PFUnA_2	563.0 / 269.0	3.64	7367.06	264.918139	149.1	false
PFDoA_1	613.0 / 569.0	3.93	135939.75	254.423652	316.8	false
PFDoA_2	613.0 / 319.0	3.93	23556.50	260.643724	422.5	false
PFTrDA_1	663.0 / 619.0	4.18	133514.03	268.128055	569.8	false
PFTrDA_2	663.0 / 169.0	4.18	9261.53	268.774951	264.5	false
PFTeDA_1	713.0 / 669.0	4.41	119033.99	264.348234	713.9	false
PFTeDA_2	713.0 / 169.0	4.41	6187.40	259.862901	481.2	false
NMeFOSAA_1	570.0 / 419.0	3.47	17390.28	254.880308	560.0	false
NMeFOSAA_2	570.0 / 512.0	3.47	10329.97	234.789364	330.1	false
NEtFOSAA_1	584.0 / 419.0	3.63	17441.85	252.859431	409.6	false
NEtFOSAA_2	584.0 / 483.0	3.61	1117.28	249.151225	103.1	false
13C2-PFHxA	315.0 / 270.0	1.82	47832.80	102.514806	658.7	false
13C2-PFDA	515.0 / 470.0	3.31	53065.21	98.448003	1031.0	false
d5-EtFOSAA	589.0 / 419.0	3.62	29677.22	413.043907	253.7	false

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Summary Quant Report

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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:23:04	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	203189.73	403.940540	1024.4	false
PFBS_2	298.9 / 99.0	1.53	62566.99	401.078422	561.7	false
PFHxA_1	313.0 / 269.0	1.82	269732.16	502.164583	106.9	false
PFHxA_2	313.0 / 119.0	1.82	18512.61	490.613382	56.8	false
PFHpA_1	363.0 / 319.0	2.20	300485.98	530.187129	136.1	false
PFHpA_2	363.0 / 169.0	2.20	6830.66	474.792061	117.6	false
PFHxS_1	399.0 / 80.0	2.21	264500.50	427.831245	237.5	false
PFHxS_2	399.0 / 99.0	2.21	73417.66	418.795290	174.9	false
PFOA_1	413.0 / 369.0	2.58	324028.05	515.478392	178.7	false
PFOA_2	413.0 / 169.0	2.58	24993.36	504.406238	142.5	false
PFNA_1	463.0 / 419.0	2.96	294394.16	534.761281	213.4	false
PFNA_2	463.0 / 219.0	2.96	78740.47	501.019505	136.4	false
PFOS_1	499.0 / 80.0	2.95	301559.60	428.486526	28.3	true
PFOS_2	499.0 / 99.0	2.95	56054.87	423.495829	35.3	true
PFDA_1	513.0 / 469.0	3.31	307696.91	525.405873	427.0	false
PFDA_2	513.0 / 219.0	3.31	12279.84	459.878276	323.1	false
PFUnA_1	563.0 / 519.0	3.64	289748.79	545.715689	359.8	false
PFUnA_2	563.0 / 269.0	3.64	14599.58	520.578495	237.3	false
PFDoA_1	613.0 / 569.0	3.93	294581.92	531.541408	454.5	false
PFDoA_2	613.0 / 319.0	3.92	48538.19	522.047312	581.9	false
PFTrDA_1	663.0 / 619.0	4.18	269042.33	519.973497	589.6	false
PFTrDA_2	663.0 / 169.0	4.18	18045.16	503.487021	334.8	false
PFTeDA_1	713.0 / 669.0	4.40	244662.83	524.723513	1105.2	false
PFTeDA_2	713.0 / 169.0	4.40	12450.26	508.886391	622.0	false
NMeFOSAA_1	570.0 / 419.0	3.46	34311.60	492.964120	661.5	false
NMeFOSAA_2	570.0 / 512.0	3.46	23172.80	521.635618	1121.6	false
NEtFOSAA_1	584.0 / 419.0	3.62	32593.83	476.518984	493.6	false
NEtFOSAA_2	584.0 / 483.0	3.61	2548.47	575.232732	194.2	false
13C2-PFHxA	315.0 / 270.0	1.81	49136.59	100.112660	730.4	false
13C2-PFDA	515.0 / 470.0	3.30	53282.38	93.973160	1112.4	false
d5-EtFOSAA	589.0 / 419.0	3.62	30113.75	403.481140	233.3	false

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Summary Quant Report

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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:32:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	429009.23	859.283953	1425.0	false
PFBS_2	298.9 / 99.0	1.53	129702.55	842.792276	798.9	false
PFHxA_1	313.0 / 269.0	1.83	551008.66	1042.105925	106.5	false
PFHxA_2	313.0 / 119.0	1.83	39922.29	1055.712476	84.4	false
PFHpA_1	363.0 / 319.0	2.20	574661.62	992.178774	197.3	false
PFHpA_2	363.0 / 169.0	2.20	14296.44	1011.164660	153.3	false
PFHxS_1	399.0 / 80.0	2.22	545114.93	887.810797	310.3	false
PFHxS_2	399.0 / 99.0	2.22	149928.15	853.057542	294.5	false
PFOA_1	413.0 / 369.0	2.58	646504.56	1026.033578	198.5	false
PFOA_2	413.0 / 169.0	2.58	52139.95	1055.853791	177.4	false
PFNA_1	463.0 / 419.0	2.97	594907.69	1054.207944	389.8	false
PFNA_2	463.0 / 219.0	2.96	169945.70	1052.266180	238.9	false
PFOS_1	499.0 / 80.0	2.96	642012.70	920.372302	44.2	true
PFOS_2	499.0 / 99.0	2.96	116878.48	896.469482	75.4	true
PFDA_1	513.0 / 469.0	3.32	627038.09	1041.326506	581.6	false
PFDA_2	513.0 / 219.0	3.32	28190.35	1044.129829	646.8	false
PFUnA_1	563.0 / 519.0	3.64	589494.51	1081.252644	479.8	false
PFUnA_2	563.0 / 269.0	3.64	30924.72	1084.199708	309.0	false
PFDoA_1	613.0 / 569.0	3.93	586721.62	1023.170252	542.4	false
PFDoA_2	613.0 / 319.0	3.93	102635.11	1072.560309	837.3	false
PFTrDA_1	663.0 / 619.0	4.18	564591.50	1055.027052	613.3	false
PFTrDA_2	663.0 / 169.0	4.18	38445.79	1037.186073	419.7	false
PFTeDA_1	713.0 / 669.0	4.40	495747.26	1029.276875	1235.1	false
PFTeDA_2	713.0 / 169.0	4.40	25951.09	1031.689261	1006.1	false
NMeFOSAA_1	570.0 / 419.0	3.47	71825.43	1162.362016	902.2	false
NMeFOSAA_2	570.0 / 512.0	3.46	45131.03	1146.164220	946.6	false
NEtFOSAA_1	584.0 / 419.0	3.63	70291.76	1182.459476	554.8	false
NEtFOSAA_2	584.0 / 483.0	3.62	4481.56	1149.132061	415.1	false
13C2-PFHxA	315.0 / 270.0	1.82	52135.59	102.020172	837.6	false
13C2-PFDA	515.0 / 470.0	3.31	62420.71	105.734482	1020.3	false
d5-EtFOSAA	589.0 / 419.0	3.62	30912.85	461.284729	275.2	false

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Summary Quant Report

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Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:40:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	1012924.88	2207.781220	2324.9	false
PFBS_2	298.9 / 99.0	1.53	309335.51	2194.855139	1232.0	false
PFHxA_1	313.0 / 269.0	1.83	1277621.02	2668.171989	156.5	true
PFHxA_2	313.0 / 119.0	1.83	94719.12	2732.015423	147.6	false
PFHpA_1	363.0 / 319.0	2.20	1454753.82	2720.096808	295.2	false
PFHpA_2	363.0 / 169.0	2.20	34685.20	2709.693669	227.2	false
PFHxS_1	399.0 / 80.0	2.22	1273219.74	2255.837318	427.8	false
PFHxS_2	399.0 / 99.0	2.22	364573.15	2244.055800	386.8	false
PFOA_1	413.0 / 369.0	2.59	1536676.95	2669.074700	263.8	false
PFOA_2	413.0 / 169.0	2.58	120764.06	2678.463894	245.0	false
PFNA_1	463.0 / 419.0	2.96	1386746.70	2650.586292	597.4	false
PFNA_2	463.0 / 219.0	2.96	415655.25	2769.495936	371.3	false
PFOS_1	499.0 / 80.0	2.96	1535025.38	2396.428880	71.2	true
PFOS_2	499.0 / 99.0	2.96	291109.25	2440.469794	128.9	true
PFDA_1	513.0 / 469.0	3.32	1508460.32	2697.013223	930.5	false
PFDA_2	513.0 / 219.0	3.32	70554.53	2833.104819	1042.0	false
PFUnA_1	563.0 / 519.0	3.64	1335178.99	2637.960702	689.3	false
PFUnA_2	563.0 / 269.0	3.64	69574.27	2639.439523	401.7	false
PFDoA_1	613.0 / 569.0	3.93	1409396.64	2636.134326	678.2	false
PFDoA_2	613.0 / 319.0	3.93	238111.88	2675.490267	736.1	false
PFTrDA_1	663.0 / 619.0	4.18	1276342.65	2557.249009	854.6	false
PFTrDA_2	663.0 / 169.0	4.18	91192.02	2637.864972	645.4	false
PFTeDA_1	713.0 / 669.0	4.40	1168031.13	2603.251203	1622.1	false
PFTeDA_2	713.0 / 169.0	4.40	59697.94	2553.743509	1037.0	false
NMeFOSAA_1	570.0 / 419.0	3.47	174816.32	2617.467082	989.7	false
NMeFOSAA_2	570.0 / 512.0	3.47	106849.45	2513.765137	931.6	false
NEtFOSAA_1	584.0 / 419.0	3.63	168133.86	2637.173291	653.6	false
NEtFOSAA_2	584.0 / 483.0	3.62	10542.95	2516.924520	527.6	false
13C2-PFHxA	315.0 / 270.0	1.82	49315.54	103.073545	680.3	false
13C2-PFDA	515.0 / 470.0	3.31	56372.61	101.992396	959.4	false
d5-EtFOSAA	589.0 / 419.0	3.62	26746.33	367.536923	224.0	false

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Summary Quant Report

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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:49:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	1868418.55	4470.852431	2895.9	false
PFBS_2	298.9 / 99.0	1.53	578037.54	4507.631063	1833.8	false
PFHxA_1	313.0 / 269.0	1.83	2220838.98	4769.428796	184.0	true
PFHxA_2	313.0 / 119.0	1.83	162105.93	4789.725663	159.7	false
PFHpA_1	363.0 / 319.0	2.20	2513101.74	4802.675276	441.5	false
PFHpA_2	363.0 / 169.0	2.20	61806.89	4963.719656	325.0	false
PFHxS_1	399.0 / 80.0	2.22	2245167.09	4366.609379	522.7	false
PFHxS_2	399.0 / 99.0	2.22	647772.46	4369.582780	484.3	false
PFOA_1	413.0 / 369.0	2.58	2697865.30	4805.638526	361.4	false
PFOA_2	413.0 / 169.0	2.58	217605.48	4953.363354	298.3	false
PFNA_1	463.0 / 419.0	2.96	2516746.36	4914.250945	840.5	false
PFNA_2	463.0 / 219.0	2.96	723312.06	4918.524474	560.1	false
PFOS_1	499.0 / 80.0	2.96	2728395.69	4677.185328	86.6	true
PFOS_2	499.0 / 99.0	2.96	516266.41	4757.248377	147.2	true
PFDA_1	513.0 / 469.0	3.31	2673054.64	4878.661940	1191.5	false
PFDA_2	513.0 / 219.0	3.31	116271.03	4772.307574	867.3	false
PFUnA_1	563.0 / 519.0	3.64	2417108.96	4877.214697	883.5	false
PFUnA_2	563.0 / 269.0	3.64	119062.48	4618.590848	630.5	false
PFDoA_1	613.0 / 569.0	3.92	2598419.76	4956.231482	863.9	false
PFDoA_2	613.0 / 319.0	3.92	416021.83	4770.454972	775.5	false
PFTrDA_1	663.0 / 619.0	4.18	2343727.57	4788.826360	1038.8	false
PFTrDA_2	663.0 / 169.0	4.18	162634.00	4796.971525	941.2	false
PFTeDA_1	713.0 / 669.0	4.40	2120014.66	4819.785187	1901.8	false
PFTeDA_2	713.0 / 169.0	4.40	109199.55	4768.977837	1440.9	false
NMeFOSAA_1	570.0 / 419.0	3.46	306610.16	5135.864638	1116.5	false
NMeFOSAA_2	570.0 / 512.0	3.46	191961.76	5055.762729	1113.4	false
NEtFOSAA_1	584.0 / 419.0	3.62	296595.95	5221.175648	880.9	false
NEtFOSAA_2	584.0 / 483.0	3.62	19081.95	5111.012896	738.5	false
13C2-PFHxA	315.0 / 270.0	1.82	44956.57	95.703244	646.1	false
13C2-PFDA	515.0 / 470.0	3.30	53261.04	98.147502	2186.9	false
d5-EtFOSAA	589.0 / 419.0	3.62	26738.14	410.296897	270.4	false

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Summary Quant Report

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Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:58:44	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	4584271.88	8847.166208	5108.8	false
PFBS_2	298.9 / 99.0	1.53	1406122.49	8848.188142	2517.0	false
PFHxA_1	313.0 / 269.0	1.82	5768788.70	10025.808125	255.7	true
PFHxA_2	313.0 / 119.0	1.82	416381.90	9931.536669	237.5	false
PFHpA_1	363.0 / 319.0	2.20	6455547.95	9942.974789	544.1	false
PFHpA_2	363.0 / 169.0	2.20	151323.24	9825.991267	424.9	false
PFHxS_1	399.0 / 80.0	2.21	5967614.14	9360.476993	801.1	false
PFHxS_2	399.0 / 99.0	2.21	1732383.16	9415.734356	684.8	false
PFOA_1	413.0 / 369.0	2.58	6939162.93	9983.205560	605.3	false
PFOA_2	413.0 / 169.0	2.58	534111.97	9819.642500	461.0	false
PFNA_1	463.0 / 419.0	2.96	6257617.61	9841.953608	1321.4	false
PFNA_2	463.0 / 219.0	2.96	1783600.27	9764.583465	860.6	false
PFOS_1	499.0 / 80.0	2.95	6622998.36	9157.985335	141.3	true
PFOS_2	499.0 / 99.0	2.95	1217511.60	9053.960872	204.8	true
PFDA_1	513.0 / 469.0	3.31	6708199.79	9858.177863	1077.4	false
PFDA_2	513.0 / 219.0	3.31	298750.23	9886.173328	1514.4	false
PFUnA_1	563.0 / 519.0	3.64	6061954.59	9850.957676	1077.5	false
PFUnA_2	563.0 / 269.0	3.64	323950.37	10133.063739	836.6	false
PFDoA_1	613.0 / 569.0	3.92	6420628.34	9853.999912	1079.8	false
PFDoA_2	613.0 / 319.0	3.92	1078205.14	9954.073734	1089.9	false
PFTrDA_1	663.0 / 619.0	4.17	6124542.14	10069.614078	1236.4	false
PFTrDA_2	663.0 / 169.0	4.17	421852.90	10011.925702	1075.2	false
PFTeDA_1	713.0 / 669.0	4.40	5475622.15	10018.712963	2190.5	true
PFTeDA_2	713.0 / 169.0	4.39	288037.46	10128.925840	2226.9	false
NMeFOSAA_1	570.0 / 419.0	3.46	759423.40	9601.669425	1230.6	false
NMeFOSAA_2	570.0 / 512.0	3.46	492485.08	9793.474332	1192.2	false
NEtFOSAA_1	584.0 / 419.0	3.62	713728.08	9497.193850	670.9	false
NEtFOSAA_2	584.0 / 483.0	3.62	47808.45	9677.842472	739.8	false
13C2-PFHxA	315.0 / 270.0	1.81	58227.59	99.666895	723.1	false
13C2-PFDA	515.0 / 470.0	3.30	64218.72	95.152433	2789.9	false
d5-EtFOSAA	589.0 / 419.0	3.62	30573.08	353.798544	269.0	false

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Summary Quant Report

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Sample Name	JV64	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T16:59:48	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	19895.74	28.015493	6.4	true
PFOS_2	499.0 / 99.0	2.93	4132.74	26.735128	8.5	true
NMeFOSAA_1	570.0 / 419.0	3.45	2213.55	27.548977	176.8	true
NMeFOSAA_2	570.0 / 512.0	3.44	1400.47	22.615513	450.4	false
NEtFOSAA_1	584.0 / 419.0	3.60	1938.21	21.706634	99.8	false
NEtFOSAA_2	584.0 / 483.0	3.58	80.87	< 0	263.9	false
d5-EtFOSAA	589.0 / 419.0	3.60	30249.73	396.921758	353.8	false
PFHxS_1	399.0 / 80.0	2.20	13612.33	23.113979	76.6	false
PFHxS_2	399.0 / 99.0	2.20	3806.15	22.866571	63.6	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:44:02 PM

Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:08:44	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	30808.29	43.697818	11.0	true
PFOS_2	499.0 / 99.0	2.94	5394.07	36.731310	10.9	true
NMeFOSAA_1	570.0 / 419.0	3.45	3716.28	50.212959	259.1	false
NMeFOSAA_2	570.0 / 512.0	3.44	2408.52	47.579201	382.7	false
NEtFOSAA_1	584.0 / 419.0	3.60	3677.26	50.086096	195.8	false
NEtFOSAA_2	584.0 / 483.0	3.60	296.18	43.168842	308.5	false
d5-EtFOSAA	589.0 / 419.0	3.60	29586.58	400.504113	293.6	false
PFHxS_1	399.0 / 80.0	2.20	26073.40	45.133652	112.3	false
PFHxS_2	399.0 / 99.0	2.20	6986.52	42.803628	89.3	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:44:04 PM

Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:17:40	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	64086.28	88.423565	18.4	true
PFOS_2	499.0 / 99.0	2.94	12544.13	88.887552	21.4	true
NMeFOSAA_1	570.0 / 419.0	3.44	5775.90	78.681781	443.4	false
NMeFOSAA_2	570.0 / 512.0	3.44	4985.18	107.001946	540.9	false
NEtFOSAA_1	584.0 / 419.0	3.61	7210.33	104.127892	252.8	false
NEtFOSAA_2	584.0 / 483.0	3.59	456.86	81.448858	65.3	false
d5-EtFOSAA	589.0 / 419.0	3.60	32693.76	435.919053	315.9	false
PFHxS_1	399.0 / 80.0	2.20	50586.47	85.929781	162.0	false
PFHxS_2	399.0 / 99.0	2.20	14953.91	89.969775	137.1	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:44:07 PM

Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:26:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	177163.01	232.851067	36.6	true
PFOS_2	499.0 / 99.0	2.94	35757.00	249.396516	51.1	true
NMeFOSAA_1	570.0 / 419.0	3.44	20468.20	288.160229	631.7	false
NMeFOSAA_2	570.0 / 512.0	3.44	12163.61	275.582161	783.1	false
NEtFOSAA_1	584.0 / 419.0	3.60	18600.08	281.802609	731.2	false
NEtFOSAA_2	584.0 / 483.0	3.60	1298.15	288.381153	381.3	false
d5-EtFOSAA	589.0 / 419.0	3.60	33901.52	453.035977	355.3	false
PFHxS_1	399.0 / 80.0	2.20	149067.44	242.553797	236.0	false
PFHxS_2	399.0 / 99.0	2.20	40563.40	233.773888	198.1	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:44:09 PM

Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:35:30	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	327179.12	425.865535	59.6	true
PFOS_2	499.0 / 99.0	2.94	65887.38	458.995774	74.8	true
NMeFOSAA_1	570.0 / 419.0	3.44	40397.32	513.619150	941.8	false
NMeFOSAA_2	570.0 / 512.0	3.44	24930.81	515.586020	613.1	false
NEtFOSAA_1	584.0 / 419.0	3.60	38172.16	526.305609	507.7	false
NEtFOSAA_2	584.0 / 483.0	3.59	2813.51	590.474442	233.1	false
d5-EtFOSAA	589.0 / 419.0	3.59	30939.67	371.472099	324.4	false
PFHxS_1	399.0 / 80.0	2.20	280053.92	451.959127	296.7	false
PFHxS_2	399.0 / 99.0	2.20	80698.44	461.321184	267.7	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:44:11 PM

Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:44:26	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	690279.32	869.286737	83.2	true
PFOS_2	499.0 / 99.0	2.94	133676.83	905.536816	127.5	true
NMeFOSAA_1	570.0 / 419.0	3.44	75514.36	923.273499	1232.4	false
NMeFOSAA_2	570.0 / 512.0	3.44	46427.65	928.182576	974.9	false
NEtFOSAA_1	584.0 / 419.0	3.60	67621.74	899.501802	648.8	false
NEtFOSAA_2	584.0 / 483.0	3.60	4959.08	1018.984274	287.3	false
d5-EtFOSAA	589.0 / 419.0	3.59	33028.02	380.216917	391.0	false
PFHxS_1	399.0 / 80.0	2.20	534413.46	835.159405	379.7	false
PFHxS_2	399.0 / 99.0	2.20	155491.92	860.777010	327.1	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:44:13 PM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:53:22	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.93	1581812.99	2395.472838	119.8	true
PFOS_2	499.0 / 99.0	2.93	300971.01	2459.747244	156.7	true
NMeFOSAA_1	570.0 / 419.0	3.44	180436.95	2475.552639	1022.3	false
NMeFOSAA_2	570.0 / 512.0	3.44	112391.55	2532.011080	1381.2	false
NEtFOSAA_1	584.0 / 419.0	3.60	167304.94	2505.582444	685.7	false
NEtFOSAA_2	584.0 / 483.0	3.59	10536.07	2465.841563	745.0	false
d5-EtFOSAA	589.0 / 419.0	3.59	31507.86	406.078069	447.6	false
PFHxS_1	399.0 / 80.0	2.19	1319053.94	2480.305200	468.8	false
PFHxS_2	399.0 / 99.0	2.19	376607.66	2508.578625	445.3	false

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Summary Quant Report

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Printed: 19/06/2018 2:44:16 PM

Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:02:19	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.93	3285763.93	4533.371720	173.7	false
PFOS_2	499.0 / 99.0	2.93	615984.35	4590.585831	222.2	false
NMeFOSAA_1	570.0 / 419.0	3.44	388553.18	5067.950766	812.9	false
NMeFOSAA_2	570.0 / 512.0	3.43	233016.86	4996.441503	1077.9	false
NEtFOSAA_1	584.0 / 419.0	3.60	353392.18	5035.886915	757.6	false
NEtFOSAA_2	584.0 / 483.0	3.59	21956.47	4911.700867	800.7	false
d5-EtFOSAA	589.0 / 419.0	3.59	29063.61	355.852014	300.0	false
PFHxS_1	399.0 / 80.0	2.19	2713393.58	4649.105634	658.5	false
PFHxS_2	399.0 / 99.0	2.19	767885.53	4660.695287	502.4	false

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Summary Quant Report

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Printed: 19/06/2018 2:44:18 PM

Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:11:15	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.93	7272222.39	9363.165227	209.3	false
PFOS_2	499.0 / 99.0	2.93	1316960.40	9163.533829	276.3	false
NMeFOSAA_1	570.0 / 419.0	3.44	809218.47	9243.627332	1166.2	false
NMeFOSAA_2	570.0 / 512.0	3.44	504370.54	9477.219279	1063.6	false
NEtFOSAA_1	584.0 / 419.0	3.60	719559.21	8983.565719	836.2	false
NEtFOSAA_2	584.0 / 483.0	3.59	44867.05	8811.481525	1035.6	false
d5-EtFOSAA	589.0 / 419.0	3.59	31935.16	342.335253	381.2	false
PFHxS_1	399.0 / 80.0	2.19	5567239.61	8902.339424	818.7	false
PFHxS_2	399.0 / 99.0	2.19	1559676.75	8834.814031	685.1	false

Summary Ion Ratio Report

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Printed: 15/06/2018 11:07:10 AM

Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T15:56:17	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.355	0.314	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	N/A	0.070	
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.025	
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.262	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.083	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.97	PFNA	0.281	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.207	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.061	0.046	ü
PFUnA_1	563.0 / 519.0	3.65	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.066	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.94	PFDoA	0.167	0.170	ü
PFTrDA_1	663.0 / 619.0	4.19	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.068	0.069	ü
PFTeDA_1	713.0 / 669.0	4.41	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	PFTeDA	0.055	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.762	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.63		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:05:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.325	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.060	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.029	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.268	0.278	ü
PFOA_1	413.0 / 369.0	2.59	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.080	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.283	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.175	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.65	PFUnA			
PFUnA_2	563.0 / 269.0	3.65	PFUnA	0.056	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.181	0.170	ü
PFTrDA_1	663.0 / 619.0	4.19	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.071	0.069	ü
PFTeDA_1	713.0 / 669.0	4.41	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	PFTeDA	0.059	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.599	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.63	NEtFOSAA	0.055	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:14:09	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.302	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.071	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.027	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.272	0.278	ü
PFOA_1	413.0 / 369.0	2.59	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.076	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.266	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.203	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.048	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.052	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.173	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.41	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.594	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.61	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:23:04	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.308	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.069	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.023	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.278	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.077	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.268	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.186	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.040	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.050	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.165	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.067	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.051	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.675	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.61	NEtFOSAA	0.078	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:32:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.302	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.025	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.275	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.286	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.182	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.045	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.053	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.175	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.068	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.628	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:40:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.305	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.074	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.286	0.278	ü
PFOA_1	413.0 / 369.0	2.59	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.079	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.300	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.190	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.052	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.169	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.071	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.051	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.611	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.063	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:49:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.309	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.025	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.289	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.287	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.189	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.049	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.160	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.626	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

Summary Ion Ratio Report

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Printed: 15/06/2018 11:07:26 AM

Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:58:44	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.307	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.072	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.023	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.290	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.077	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.285	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.184	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.045	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.053	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.168	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.39	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.649	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.067	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV64	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T16:59:48	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.208	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.633	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.58	NEtFOSAA	0.042	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.280	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:08:44	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.175	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.648	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.081	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.268	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:17:40	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.196	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.863	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.61	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.063	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.296	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:26:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.202	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.594	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.070	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.272	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:35:30	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.201	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.617	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.074	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.288	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:44:26	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.194	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.615	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.073	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.291	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 19/06/2018 2:52:31 PM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:53:22	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.190	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.623	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.063	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.286	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:02:19	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.188	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.43	NMeFOSAA	0.600	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.062	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.283	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 19/06/2018 2:52:36 PM

Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:11:15	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.181	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.623	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.062	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.280	0.283	ü

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:36:16 AM

Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T15:56:17	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C4-PFOS	503.0 / 80.0	175225.42	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	175225.42	287.00
PFHxA_1	313.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	175225.42	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	175225.42	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFNA_1	463.0 / 419.0	2.97	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFNA_2	463.0 / 219.0	2.97	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	175225.42	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	175225.42	287.00
PFDA_1	513.0 / 469.0	3.32	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFDA_2	513.0 / 219.0	3.32	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFUnA_1	563.0 / 519.0	3.65	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFDoA_1	613.0 / 569.0	3.93	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFDoA_2	613.0 / 319.0	3.94	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFTrDA_1	663.0 / 619.0	4.19	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFTeDA_1	713.0 / 669.0	4.41	13C2-PFOA	415.0 / 370.0	64554.53	100.00
PFTeDA_2	713.0 / 169.0	4.41	13C2-PFOA	415.0 / 370.0	64554.53	100.00
NMeFOSAA_1	570.0 / 419.0	3.47	d3-MeFOSAA	573.0 / 419.0	30047.71	400.00
NMeFOSAA_2	570.0 / 512.0	3.47	d3-MeFOSAA	573.0 / 419.0	30047.71	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	30047.71	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	30047.71	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	64554.53	100.00
13C2-PFDA	515.0 / 470.0	3.31	13C2-PFOA	415.0 / 370.0	64554.53	100.00
d5-EtFOSAA	589.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	30047.71	400.00

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:36:18 AM

Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:05:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	156308.21	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	156308.21	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	156308.21	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	156308.21	287.00
PFOA_1	413.0 / 369.0	2.59	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFNA_1	463.0 / 419.0	2.97	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	156308.21	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	156308.21	287.00
PFDA_1	513.0 / 469.0	3.32	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFDA_2	513.0 / 219.0	3.32	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFUnA_1	563.0 / 519.0	3.65	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFUnA_2	563.0 / 269.0	3.65	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFDoA_1	613.0 / 569.0	3.93	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFDoA_2	613.0 / 319.0	3.93	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFTrDA_1	663.0 / 619.0	4.19	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFTeDA_1	713.0 / 669.0	4.41	13C2-PFOA	415.0 / 370.0	54463.23	100.00
PFTeDA_2	713.0 / 169.0	4.41	13C2-PFOA	415.0 / 370.0	54463.23	100.00
NMeFOSAA_1	570.0 / 419.0	3.47	d3-MeFOSAA	573.0 / 419.0	29451.11	400.00
NMeFOSAA_2	570.0 / 512.0	3.47	d3-MeFOSAA	573.0 / 419.0	29451.11	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	29451.11	400.00
NEtFOSAA_2	584.0 / 483.0	3.63	d3-MeFOSAA	573.0 / 419.0	29451.11	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	54463.23	100.00
13C2-PFDA	515.0 / 470.0	3.31	13C2-PFOA	415.0 / 370.0	54463.23	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	29451.11	400.00

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Summary Internal Standard Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:14:09	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C4-PFOS	503.0 / 80.0	144107.35	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	144107.35	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	144107.35	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	144107.35	287.00
PFOA_1	413.0 / 369.0	2.59	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFNA_1	463.0 / 419.0	2.97	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	144107.35	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	144107.35	287.00
PFDA_1	513.0 / 469.0	3.32	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFDoA_1	613.0 / 569.0	3.93	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFDoA_2	613.0 / 319.0	3.93	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFTrDA_1	663.0 / 619.0	4.18	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFTeDA_1	713.0 / 669.0	4.41	13C2-PFOA	415.0 / 370.0	54513.09	100.00
PFTeDA_2	713.0 / 169.0	4.41	13C2-PFOA	415.0 / 370.0	54513.09	100.00
NMeFOSAA_1	570.0 / 419.0	3.47	d3-MeFOSAA	573.0 / 419.0	28401.10	400.00
NMeFOSAA_2	570.0 / 512.0	3.47	d3-MeFOSAA	573.0 / 419.0	28401.10	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	28401.10	400.00
NEtFOSAA_2	584.0 / 483.0	3.61	d3-MeFOSAA	573.0 / 419.0	28401.10	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	54513.09	100.00
13C2-PFDA	515.0 / 470.0	3.31	13C2-PFOA	415.0 / 370.0	54513.09	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	28401.10	400.00

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Summary Internal Standard Report

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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:23:04	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	172723.18	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	172723.18	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	172723.18	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	172723.18	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFOS_1	499.0 / 80.0	2.95	13C4-PFOS	503.0 / 80.0	172723.18	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	172723.18	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFDoA_1	613.0 / 569.0	3.93	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFTrDA_1	663.0 / 619.0	4.18	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	57342.63	100.00
PFTeDA_2	713.0 / 169.0	4.40	13C2-PFOA	415.0 / 370.0	57342.63	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	29501.89	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	29501.89	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	29501.89	400.00
NEtFOSAA_2	584.0 / 483.0	3.61	d3-MeFOSAA	573.0 / 419.0	29501.89	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	57342.63	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	57342.63	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	29501.89	400.00

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Summary Internal Standard Report

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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:32:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	171696.69	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	171696.69	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	171696.69	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	171696.69	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFNA_1	463.0 / 419.0	2.97	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	171696.69	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	171696.69	287.00
PFDA_1	513.0 / 469.0	3.32	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFDA_2	513.0 / 219.0	3.32	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFDoA_1	613.0 / 569.0	3.93	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFDoA_2	613.0 / 319.0	3.93	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFTrDA_1	663.0 / 619.0	4.18	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	59704.88	100.00
PFTeDA_2	713.0 / 169.0	4.40	13C2-PFOA	415.0 / 370.0	59704.88	100.00
NMeFOSAA_1	570.0 / 419.0	3.47	d3-MeFOSAA	573.0 / 419.0	26489.77	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	26489.77	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	26489.77	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	26489.77	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	59704.88	100.00
13C2-PFDA	515.0 / 470.0	3.31	13C2-PFOA	415.0 / 370.0	59704.88	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	26489.77	400.00

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Summary Internal Standard Report

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Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:40:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C4-PFOS	503.0 / 80.0	157911.70	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	157911.70	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	157911.70	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	157911.70	287.00
PFOA_1	413.0 / 369.0	2.59	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	157911.70	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	157911.70	287.00
PFDA_1	513.0 / 469.0	3.32	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFDA_2	513.0 / 219.0	3.32	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFDoA_1	613.0 / 569.0	3.93	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFDoA_2	613.0 / 319.0	3.93	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFTrDA_1	663.0 / 619.0	4.18	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	55898.24	100.00
PFTeDA_2	713.0 / 169.0	4.40	13C2-PFOA	415.0 / 370.0	55898.24	100.00
NMeFOSAA_1	570.0 / 419.0	3.47	d3-MeFOSAA	573.0 / 419.0	28765.47	400.00
NMeFOSAA_2	570.0 / 512.0	3.47	d3-MeFOSAA	573.0 / 419.0	28765.47	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	28765.47	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	28765.47	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	55898.24	100.00
13C2-PFDA	515.0 / 470.0	3.31	13C2-PFOA	415.0 / 370.0	55898.24	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	28765.47	400.00

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Summary Internal Standard Report

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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:49:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C4-PFOS	503.0 / 80.0	143877.70	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	143877.70	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	143877.70	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	143877.70	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	143877.70	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	143877.70	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFTrDA_1	663.0 / 619.0	4.18	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	54881.78	100.00
PFTeDA_2	713.0 / 169.0	4.40	13C2-PFOA	415.0 / 370.0	54881.78	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	25759.72	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	25759.72	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	25759.72	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	25759.72	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	54881.78	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	54881.78	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	25759.72	400.00

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Summary Internal Standard Report

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Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:58:44	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	178415.29	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	178415.29	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	178415.29	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	178415.29	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFOS_1	499.0 / 80.0	2.95	13C4-PFOS	503.0 / 80.0	178415.29	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	178415.29	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFTrDA_2	663.0 / 169.0	4.17	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	68255.79	100.00
PFTeDA_2	713.0 / 169.0	4.39	13C2-PFOA	415.0 / 370.0	68255.79	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	34157.92	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	34157.92	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	34157.92	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	34157.92	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	68255.79	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	68255.79	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	34157.92	400.00

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Summary Internal Standard Report

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Sample Name	JV64	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T16:59:48	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	173918.05	287.00
PFOS_2	499.0 / 99.0	2.93	13C4-PFOS	503.0 / 80.0	173918.05	287.00
NMeFOSAA_1	570.0 / 419.0	3.45	d3-MeFOSAA	573.0 / 419.0	27400.65	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	27400.65	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	27400.65	400.00
NEtFOSAA_2	584.0 / 483.0	3.58	d3-MeFOSAA	573.0 / 419.0	27400.65	400.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	27400.65	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	173918.05	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	173918.05	287.00

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Summary Internal Standard Report

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Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:08:44	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	171472.33	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	171472.33	287.00
NMeFOSAA_1	570.0 / 419.0	3.45	d3-MeFOSAA	573.0 / 419.0	26560.24	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	26560.24	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26560.24	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	26560.24	400.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26560.24	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	171472.33	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	171472.33	287.00

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Summary Internal Standard Report

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Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:17:40	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	175183.49	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	175183.49	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	26965.18	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	26965.18	400.00
NEtFOSAA_1	584.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	26965.18	400.00
NEtFOSAA_2	584.0 / 483.0	3.59	d3-MeFOSAA	573.0 / 419.0	26965.18	400.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26965.18	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	175183.49	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	175183.49	287.00

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Summary Internal Standard Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:26:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	183218.28	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	183218.28	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	26904.87	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	26904.87	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26904.87	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	26904.87	400.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26904.87	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	183218.28	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	183218.28	287.00

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Summary Internal Standard Report

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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:35:30	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	184815.34	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	184815.34	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	29945.65	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	29945.65	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	29945.65	400.00
NEtFOSAA_2	584.0 / 483.0	3.59	d3-MeFOSAA	573.0 / 419.0	29945.65	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	29945.65	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	184815.34	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	184815.34	287.00

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Summary Internal Standard Report

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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:44:26	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	190902.07	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	190902.07	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	31231.68	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	31231.68	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	31231.68	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	31231.68	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	31231.68	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	190902.07	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	190902.07	287.00

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Summary Internal Standard Report

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Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:53:22	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.93	13C4-PFOS	503.0 / 80.0	158687.91	287.00
PFOS_2	499.0 / 99.0	2.93	13C4-PFOS	503.0 / 80.0	158687.91	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	27896.75	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	27896.75	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	27896.75	400.00
NEtFOSAA_2	584.0 / 483.0	3.59	d3-MeFOSAA	573.0 / 419.0	27896.75	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	27896.75	400.00
PFHxS_1	399.0 / 80.0	2.19	13C4-PFOS	503.0 / 80.0	158687.91	287.00
PFHxS_2	399.0 / 99.0	2.19	13C4-PFOS	503.0 / 80.0	158687.91	287.00

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Summary Internal Standard Report

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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:02:19	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.93	13C4-PFOS	503.0 / 80.0	174160.49	287.00
PFOS_2	499.0 / 99.0	2.93	13C4-PFOS	503.0 / 80.0	174160.49	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	29364.62	400.00
NMeFOSAA_2	570.0 / 512.0	3.43	d3-MeFOSAA	573.0 / 419.0	29364.62	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	29364.62	400.00
NEtFOSAA_2	584.0 / 483.0	3.59	d3-MeFOSAA	573.0 / 419.0	29364.62	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	29364.62	400.00
PFHxS_1	399.0 / 80.0	2.19	13C4-PFOS	503.0 / 80.0	174160.49	287.00
PFHxS_2	399.0 / 99.0	2.19	13C4-PFOS	503.0 / 80.0	174160.49	287.00

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Summary Internal Standard Report

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Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:11:15	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.93	13C4-PFOS	503.0 / 80.0	186617.72	287.00
PFOS_2	499.0 / 99.0	2.93	13C4-PFOS	503.0 / 80.0	186617.72	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	33539.90	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	33539.90	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	33539.90	400.00
NEtFOSAA_2	584.0 / 483.0	3.59	d3-MeFOSAA	573.0 / 419.0	33539.90	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	33539.90	400.00
PFHxS_1	399.0 / 80.0	2.19	13C4-PFOS	503.0 / 80.0	186617.72	287.00
PFHxS_2	399.0 / 99.0	2.19	13C4-PFOS	503.0 / 80.0	186617.72	287.00

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QC Summary Report

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Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.53	769.814184	885.00	86.98
PFBS_2	298.9 / 99.0	1.53	768.732726	885.00	86.86
PFHxA_1	313.0 / 269.0	1.83	913.521393	1000.00	91.35
PFHxA_2	313.0 / 119.0	1.83	959.405514	1000.00	95.94
PFHpA_1	363.0 / 319.0	2.20	975.515715	1000.00	97.55
PFHpA_2	363.0 / 169.0	2.20	933.315191	1000.00	93.33
PFHxS_1	399.0 / 80.0	2.22	811.740410	912.00	89.01
PFHxS_2	399.0 / 99.0	2.22	817.049228	912.00	89.59
PFOA_1	413.0 / 369.0	2.58	965.386755	1000.00	96.54
PFOA_2	413.0 / 169.0	2.58	998.658491	1000.00	99.87
PFNA_1	463.0 / 419.0	2.96	1012.084378	1000.00	101.21
PFNA_2	463.0 / 219.0	2.96	999.124217	1000.00	99.91
PFOS_1	499.0 / 80.0	2.96	830.439673	925.60	89.72
PFOS_2	499.0 / 99.0	2.96	958.171478	925.60	103.52
PFDA_1	513.0 / 469.0	3.31	991.407583	1000.00	99.14
PFDA_2	513.0 / 219.0	3.31	945.139477	1000.00	94.51
PFUnA_1	563.0 / 519.0	3.64	967.807751	1000.00	96.78
PFUnA_2	563.0 / 269.0	3.64	916.483234	1000.00	91.65
PFDoA_1	613.0 / 569.0	3.92	941.687144	1000.00	94.17
PFDoA_2	613.0 / 319.0	3.92	1014.928377	1000.00	101.49
PFTrDA_1	663.0 / 619.0	4.17	1018.529815	1000.00	101.85
PFTrDA_2	663.0 / 169.0	4.17	949.195149	1000.00	94.92
PFTeDA_1	713.0 / 669.0	4.40	968.709307	1000.00	96.87
PFTeDA_2	713.0 / 169.0	4.39	951.457285	1000.00	95.15
NMeFOSAA_1	570.0 / 419.0	3.46	1180.922001	1000.00	118.09
NMeFOSAA_2	570.0 / 512.0	3.46	1019.447817	1000.00	101.94
NEtFOSAA_1	584.0 / 419.0	3.63	1095.902443	1000.00	109.59
NEtFOSAA_2	584.0 / 483.0	3.62	910.459126	1000.00	91.05
13C2-PFHxA	315.0 / 270.0	1.82	95.569328	100.00	95.57
13C2-PFDA	515.0 / 470.0	3.30	99.569731	100.00	99.57
d5-EtFOSAA	589.0 / 419.0	3.62	396.879979	400.00	99.22

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QC Summary Report

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Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.53	881.857889	885.00	99.64
PFBS_2	298.9 / 99.0	1.52	849.892294	885.00	96.03
PFHxA_1	313.0 / 269.0	1.82	1034.069600	1000.00	103.41
PFHxA_2	313.0 / 119.0	1.81	1091.443831	1000.00	109.14
PFHpA_1	363.0 / 319.0	2.19	1002.612281	1000.00	100.26
PFHpA_2	363.0 / 169.0	2.19	998.898230	1000.00	99.89
PFHxS_1	399.0 / 80.0	2.20	876.169410	912.00	96.07
PFHxS_2	399.0 / 99.0	2.20	876.686414	912.00	96.13
PFOA_1	413.0 / 369.0	2.57	1002.975354	1000.00	100.30
PFOA_2	413.0 / 169.0	2.57	1038.225708	1000.00	103.82
PFNA_1	463.0 / 419.0	2.95	1037.366769	1000.00	103.74
PFNA_2	463.0 / 219.0	2.95	1031.087202	1000.00	103.11
PFOS_1	499.0 / 80.0	2.95	948.400082	925.60	102.46
PFOS_2	499.0 / 99.0	2.95	955.315612	925.60	103.21
PFDA_1	513.0 / 469.0	3.30	991.771585	1000.00	99.18
PFDA_2	513.0 / 219.0	3.30	1035.697641	1000.00	103.57
PFUnA_1	563.0 / 519.0	3.63	1034.712043	1000.00	103.47
PFUnA_2	563.0 / 269.0	3.63	1059.849536	1000.00	105.98
PFDoA_1	613.0 / 569.0	3.91	1010.145399	1000.00	101.01
PFDoA_2	613.0 / 319.0	3.91	1032.524238	1000.00	103.25
PFTrDA_1	663.0 / 619.0	4.16	1075.677948	1000.00	107.57
PFTrDA_2	663.0 / 169.0	4.16	1075.514084	1000.00	107.55
PFTeDA_1	713.0 / 669.0	4.38	1058.986582	1000.00	105.90
PFTeDA_2	713.0 / 169.0	4.38	1044.190425	1000.00	104.42
NMeFOSAA_1	570.0 / 419.0	3.45	1022.268574	1000.00	102.23
NMeFOSAA_2	570.0 / 512.0	3.45	985.718286	1000.00	98.57
NEtFOSAA_1	584.0 / 419.0	3.61	1020.436238	1000.00	102.04
NEtFOSAA_2	584.0 / 483.0	3.60	1052.187110	1000.00	105.22
13C2-PFHxA	315.0 / 270.0	1.81	101.542239	100.00	101.54
13C2-PFDA	515.0 / 470.0	3.29	102.044634	100.00	102.04
d5-EtFOSAA	589.0 / 419.0	3.61	398.416383	400.00	99.60

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QC Summary Report

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Printed: 15/06/2018 10:37:26 AM

Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	2259.136103	2212.50	102.11
PFBS_2	298.9 / 99.0	1.52	2194.392765	2212.50	99.18
PFHxA_1	313.0 / 269.0	1.81	2620.579452	2500.00	104.82
PFHxA_2	313.0 / 119.0	1.81	2687.066684	2500.00	107.48
PFHpA_1	363.0 / 319.0	2.19	2540.015150	2500.00	101.60
PFHpA_2	363.0 / 169.0	2.18	2555.364373	2500.00	102.21
PFHxS_1	399.0 / 80.0	2.20	2239.862810	2280.00	98.24
PFHxS_2	399.0 / 99.0	2.20	2185.367686	2280.00	95.85
PFOA_1	413.0 / 369.0	2.57	2497.354006	2500.00	99.89
PFOA_2	413.0 / 169.0	2.56	2655.754414	2500.00	106.23
PFNA_1	463.0 / 419.0	2.95	2664.589533	2500.00	106.58
PFNA_2	463.0 / 219.0	2.94	2686.051730	2500.00	107.44
PFOS_1	499.0 / 80.0	2.94	2274.079112	2314.00	98.27
PFOS_2	499.0 / 99.0	2.94	2484.053411	2314.00	107.35
PFDA_1	513.0 / 469.0	3.29	2543.892704	2500.00	101.76
PFDA_2	513.0 / 219.0	3.29	2396.781290	2500.00	95.87
PFUnA_1	563.0 / 519.0	3.62	2719.449304	2500.00	108.78
PFUnA_2	563.0 / 269.0	3.62	2669.210041	2500.00	106.77
PFDoA_1	613.0 / 569.0	3.90	2682.223083	2500.00	107.29
PFDoA_2	613.0 / 319.0	3.90	2526.462529	2500.00	101.06
PFTrDA_1	663.0 / 619.0	4.15	2822.284791	2500.00	112.89
PFTrDA_2	663.0 / 169.0	4.15	2811.064588	2500.00	112.44
PFTeDA_1	713.0 / 669.0	4.37	2618.133951	2500.00	104.73
PFTeDA_2	713.0 / 169.0	4.37	2638.079251	2500.00	105.52
NMeFOSAA_1	570.0 / 419.0	3.44	2701.184358	2500.00	108.05
NMeFOSAA_2	570.0 / 512.0	3.44	2750.606573	2500.00	110.02
NEtFOSAA_1	584.0 / 419.0	3.61	2771.708903	2500.00	110.87
NEtFOSAA_2	584.0 / 483.0	3.60	2685.150118	2500.00	107.41
13C2-PFHxA	315.0 / 270.0	1.80	106.376897	100.00	106.38
13C2-PFDA	515.0 / 470.0	3.28	107.168729	100.00	107.17
d5-EtFOSAA	589.0 / 419.0	3.60	402.783760	400.00	100.70

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QC Summary Report

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Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFOS_1	499.0 / 80.0	2.94	776.808686	925.60	83.92
PFOS_2	499.0 / 99.0	2.94	927.382992	925.60	100.19
NMeFOSAA_1	570.0 / 419.0	3.44	1047.991249	1000.00	104.80
NMeFOSAA_2	570.0 / 512.0	3.44	958.185598	1000.00	95.82
NEtFOSAA_1	584.0 / 419.0	3.60	1011.174456	1000.00	101.12
NEtFOSAA_2	584.0 / 483.0	3.60	968.508372	1000.00	96.85
d5-EtFOSAA	589.0 / 419.0	3.59	336.683989	400.00	84.17
PFHxS_1	399.0 / 80.0	2.20	834.309815	912.00	91.48
PFHxS_2	399.0 / 99.0	2.20	828.791116	912.00	90.88

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QC Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:46:14 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFOS_1	499.0 / 80.0	2.92	2382.188057	2314.00	102.95
PFOS_2	499.0 / 99.0	2.92	2415.297397	2314.00	104.38
NMeFOSAA_1	570.0 / 419.0	3.43	2363.483557	2500.00	94.54
NMeFOSAA_2	570.0 / 512.0	3.42	2517.716065	2500.00	100.71
NEtFOSAA_1	584.0 / 419.0	3.59	2529.071006	2500.00	101.16
NEtFOSAA_2	584.0 / 483.0	3.57	2582.116782	2500.00	103.28
d5-EtFOSAA	589.0 / 419.0	3.58	396.266324	400.00	99.07
PFHxS_1	399.0 / 80.0	2.19	2224.752859	2280.00	97.58
PFHxS_2	399.0 / 99.0	2.19	2274.191190	2280.00	99.75

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Summary Quant Report

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Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	323659.14	769.814184	1310.9	false
PFBS_2	298.9 / 99.0	1.53	99677.31	768.732726	712.6	false
PFHxA_1	313.0 / 269.0	1.83	421454.43	913.521393	100.3	true
PFHxA_2	313.0 / 119.0	1.83	31525.30	959.405514	79.2	false
PFHpA_1	363.0 / 319.0	2.20	489477.54	975.515715	171.5	false
PFHpA_2	363.0 / 169.0	2.20	11477.65	933.315191	158.3	true
PFHxS_1	399.0 / 80.0	2.22	419684.42	811.740410	359.7	false
PFHxS_2	399.0 / 99.0	2.22	120864.86	817.049228	309.4	false
PFOA_1	413.0 / 369.0	2.58	528070.92	965.386755	186.6	false
PFOA_2	413.0 / 169.0	2.58	42807.17	998.658491	151.2	false
PFNA_1	463.0 / 419.0	2.96	494935.41	1012.084378	330.3	false
PFNA_2	463.0 / 219.0	2.96	139828.85	999.124217	247.0	false
PFOS_1	499.0 / 80.0	2.96	487877.99	830.439673	75.2	true
PFOS_2	499.0 / 99.0	2.96	105127.24	958.171478	90.0	true
PFDA_1	513.0 / 469.0	3.31	517316.64	991.407583	588.2	false
PFDA_2	513.0 / 219.0	3.31	22152.46	945.139477	581.6	false
PFUnA_1	563.0 / 519.0	3.64	457702.03	967.807751	512.2	false
PFUnA_2	563.0 / 269.0	3.64	22728.78	916.483234	277.8	false
PFDoA_1	613.0 / 569.0	3.92	467909.25	941.687144	451.5	false
PFDoA_2	613.0 / 319.0	3.92	84158.50	1014.928377	599.8	false
PFTrDA_1	663.0 / 619.0	4.17	472130.14	1018.529815	696.2	false
PFTrDA_2	663.0 / 169.0	4.17	30487.30	949.195149	426.1	false
PFTeDA_1	713.0 / 669.0	4.40	404261.23	968.709307	1154.4	false
PFTeDA_2	713.0 / 169.0	4.39	20747.44	951.457285	806.7	false
NMeFOSAA_1	570.0 / 419.0	3.46	68024.59	1180.922001	914.7	false
NMeFOSAA_2	570.0 / 512.0	3.46	37475.24	1019.447817	642.2	false
NEtFOSAA_1	584.0 / 419.0	3.63	60844.62	1095.902443	540.2	false
NEtFOSAA_2	584.0 / 483.0	3.62	3327.84	910.459126	362.3	false
13C2-PFHxA	315.0 / 270.0	1.82	42294.38	95.569328	792.8	false
13C2-PFDA	515.0 / 470.0	3.30	50904.40	99.569731	666.5	false
d5-EtFOSAA	589.0 / 419.0	3.62	24796.73	396.879979	241.7	false

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Summary Quant Report

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Printed: 15/06/2018 10:39:38 AM

Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	420599.32	881.857889	1612.8	false
PFBS_2	298.9 / 99.0	1.52	124945.86	849.892294	874.2	false
PFHxA_1	313.0 / 269.0	1.82	540639.07	1034.069600	123.9	false
PFHxA_2	313.0 / 119.0	1.81	40749.30	1091.443831	77.9	false
PFHpA_1	363.0 / 319.0	2.19	573835.63	1002.612281	221.6	false
PFHpA_2	363.0 / 169.0	2.19	13968.12	998.898230	181.4	false
PFHxS_1	399.0 / 80.0	2.20	513944.02	876.169410	361.5	false
PFHxS_2	399.0 / 99.0	2.20	147231.22	876.686414	295.8	false
PFOA_1	413.0 / 369.0	2.57	625201.86	1002.975354	185.7	false
PFOA_2	413.0 / 169.0	2.57	50709.60	1038.225708	156.1	false
PFNA_1	463.0 / 419.0	2.95	578761.62	1037.366769	410.8	false
PFNA_2	463.0 / 219.0	2.95	164632.98	1031.087202	253.3	false
PFOS_1	499.0 / 80.0	2.95	631966.64	948.400082	40.4	true
PFOS_2	499.0 / 99.0	2.95	118927.06	955.315612	70.1	true
PFDA_1	513.0 / 469.0	3.30	590646.67	991.771585	510.7	false
PFDA_2	513.0 / 219.0	3.30	27643.42	1035.697641	475.8	false
PFUnA_1	563.0 / 519.0	3.63	557930.97	1034.712043	510.1	false
PFUnA_2	563.0 / 269.0	3.63	29894.37	1059.849536	310.9	false
PFDoA_1	613.0 / 569.0	3.91	572579.78	1010.145399	565.0	false
PFDoA_2	613.0 / 319.0	3.91	97699.08	1032.524238	664.5	false
PFTrDA_1	663.0 / 619.0	4.16	568890.44	1075.677948	692.9	false
PFTrDA_2	663.0 / 169.0	4.16	39394.89	1075.514084	466.0	false
PFTeDA_1	713.0 / 669.0	4.38	504019.89	1058.986582	1280.6	false
PFTeDA_2	713.0 / 169.0	4.38	25956.85	1044.190425	956.3	false
NMeFOSAA_1	570.0 / 419.0	3.45	68455.79	1022.268574	639.0	false
NMeFOSAA_2	570.0 / 512.0	3.45	42087.96	985.718286	741.8	false
NEtFOSAA_1	584.0 / 419.0	3.61	65895.25	1020.436238	499.2	false
NEtFOSAA_2	584.0 / 483.0	3.60	4450.04	1052.187110	541.1	false
13C2-PFHxA	315.0 / 270.0	1.81	51289.08	101.542239	598.9	false
13C2-PFDA	515.0 / 470.0	3.29	59543.20	102.044634	3309.8	false
d5-EtFOSAA	589.0 / 419.0	3.61	28901.26	398.416383	282.6	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 15/06/2018 10:39:41 AM

Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	1030287.58	2259.136103	2804.2	false
PFBS_2	298.9 / 99.0	1.52	307424.60	2194.392765	1315.3	false
PFHxA_1	313.0 / 269.0	1.81	1276267.02	2620.579452	161.5	false
PFHxA_2	313.0 / 119.0	1.81	94735.97	2687.066684	139.5	false
PFHpA_1	363.0 / 319.0	2.19	1381887.26	2540.015150	327.0	false
PFHpA_2	363.0 / 169.0	2.18	33296.17	2555.364373	258.2	false
PFHxS_1	399.0 / 80.0	2.20	1256661.02	2239.862810	421.2	false
PFHxS_2	399.0 / 99.0	2.20	352890.21	2185.367686	440.2	false
PFOA_1	413.0 / 369.0	2.57	1463344.19	2497.354006	297.2	false
PFOA_2	413.0 / 169.0	2.56	121754.86	2655.754414	275.5	false
PFNA_1	463.0 / 419.0	2.95	1417280.19	2664.589533	591.6	false
PFNA_2	463.0 / 219.0	2.94	409915.06	2686.051730	398.9	false
PFOS_1	499.0 / 80.0	2.94	1448036.67	2274.079112	81.3	true
PFOS_2	499.0 / 99.0	2.94	294523.82	2484.053411	125.1	true
PFDA_1	513.0 / 469.0	3.29	1446990.07	2543.892704	839.5	false
PFDA_2	513.0 / 219.0	3.29	60781.02	2396.781290	772.6	false
PFUnA_1	563.0 / 519.0	3.62	1399137.76	2719.449304	707.4	false
PFUnA_2	563.0 / 269.0	3.62	71525.44	2669.210041	494.7	false
PFDoA_1	613.0 / 569.0	3.90	1457893.86	2682.223083	685.5	false
PFDoA_2	613.0 / 319.0	3.90	228659.80	2526.462529	767.8	false
PFTrDA_1	663.0 / 619.0	4.15	1431759.68	2822.284791	1008.1	false
PFTrDA_2	663.0 / 169.0	4.15	98785.47	2811.064588	745.4	false
PFTeDA_1	713.0 / 669.0	4.37	1194282.68	2618.133951	1728.2	false
PFTeDA_2	713.0 / 169.0	4.37	62688.10	2638.079251	1321.4	false
NMeFOSAA_1	570.0 / 419.0	3.44	168359.65	2701.184358	1174.2	false
NMeFOSAA_2	570.0 / 512.0	3.44	109074.47	2750.606573	981.8	false
NEtFOSAA_1	584.0 / 419.0	3.61	164847.86	2771.708903	653.9	false
NEtFOSAA_2	584.0 / 483.0	3.60	10491.60	2685.150118	405.3	false
13C2-PFHxA	315.0 / 270.0	1.80	51745.06	106.376897	674.5	false
13C2-PFDA	515.0 / 470.0	3.28	60221.77	107.168729	965.0	false
d5-EtFOSAA	589.0 / 419.0	3.60	27357.01	402.783760	236.3	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:47:19 PM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	587622.45	776.808686	164.3	true
PFOS_2	499.0 / 99.0	2.94	130411.74	927.382992	168.0	true
NMeFOSAA_1	570.0 / 419.0	3.44	81522.04	1047.991249	1008.7	false
NMeFOSAA_2	570.0 / 512.0	3.44	45589.20	958.185598	888.7	false
NEtFOSAA_1	584.0 / 419.0	3.60	72260.20	1011.174456	777.2	false
NEtFOSAA_2	584.0 / 483.0	3.60	4491.63	968.508372	318.3	false
d5-EtFOSAA	589.0 / 419.0	3.59	27828.01	336.683989	310.7	false
PFHxS_1	399.0 / 80.0	2.20	508615.46	834.309815	498.4	false
PFHxS_2	399.0 / 99.0	2.20	142633.50	828.791116	438.8	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:47:23 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.92	1842903.58	2382.188057	157.8	false
PFOS_2	499.0 / 99.0	2.92	346243.35	2415.297397	198.4	false
NMeFOSAA_1	570.0 / 419.0	3.43	182461.28	2363.483557	1200.0	false
NMeFOSAA_2	570.0 / 512.0	3.42	118364.27	2517.716065	1154.8	false
NEtFOSAA_1	584.0 / 419.0	3.59	178848.30	2529.071006	663.0	false
NEtFOSAA_2	584.0 / 483.0	3.57	11678.49	2582.116782	488.1	false
d5-EtFOSAA	589.0 / 419.0	3.58	32563.64	396.266324	321.4	false
PFHxS_1	399.0 / 80.0	2.19	1386140.69	2224.752859	506.0	false
PFHxS_2	399.0 / 99.0	2.19	399996.71	2274.191190	420.4	false

Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:07:58 AM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.308	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.075	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.023	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.288	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.283	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.216	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.050	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.180	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.065	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.39	PFTeDA	0.051	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.551	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.055	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:08:01 AM

Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.297	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.075	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.19	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.287	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.57	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.285	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.188	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.63	PFUnA			
PFUnA_2	563.0 / 269.0	3.63	PFUnA	0.054	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	3.91	PFDoA	0.171	0.170	ü
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.16	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.38	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.45	NMeFOSAA	0.615	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.61	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.068	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:08:03 AM

Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.314	ü
PFHxA_1	313.0 / 269.0	1.81	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.074	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.281	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.56	PFOA	0.083	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.94	PFNA	0.289	0.282	ü
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.203	0.190	ü
PFDA_1	513.0 / 469.0	3.29	PFDA			
PFDA_2	513.0 / 219.0	3.29	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.62	PFUnA			
PFUnA_2	563.0 / 269.0	3.62	PFUnA	0.051	0.054	ü
PFDoA_1	613.0 / 569.0	3.90	PFDoA			
PFDoA_2	613.0 / 319.0	3.90	PFDoA	0.157	0.170	ü
PFTrDA_1	663.0 / 619.0	4.15	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.15	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.37	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.37	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.648	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.61	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.80				
13C2-PFDA	515.0 / 470.0	3.28		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 19/06/2018 2:53:51 PM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.222	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.559	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.062	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.280	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 19/06/2018 2:53:53 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.92	PFOS			
PFOS_2	499.0 / 99.0	2.92	PFOS	0.188	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.43	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.42	NMeFOSAA	0.649	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.59	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.57	NEtFOSAA	0.065	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.58				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.289	0.283	ü

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:40:30 AM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTrDA_2	663.0 / 169.0	4.17	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTeDA_2	713.0 / 169.0	4.39	13C2-PFOA	415.0 / 370.0	51704.19	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	51704.19	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	51704.19	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:40:33 AM

Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHpA_2	363.0 / 169.0	2.19	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFOS_1	499.0 / 80.0	2.95	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFUnA_1	563.0 / 519.0	3.63	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFUnA_2	563.0 / 269.0	3.63	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFDoA_2	613.0 / 319.0	3.91	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTrDA_2	663.0 / 169.0	4.16	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTeDA_2	713.0 / 169.0	4.38	13C2-PFOA	415.0 / 370.0	59011.92	100.00
NMeFOSAA_1	570.0 / 419.0	3.45	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
NMeFOSAA_2	570.0 / 512.0	3.45	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
NEtFOSAA_1	584.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	59011.92	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	59011.92	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00

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Summary Internal Standard Report

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Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFHxA_1	313.0 / 269.0	1.81	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFOA_2	413.0 / 169.0	2.56	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFDA_1	513.0 / 469.0	3.29	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFDA_2	513.0 / 219.0	3.29	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFUnA_1	563.0 / 519.0	3.62	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFUnA_2	563.0 / 269.0	3.62	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFDoA_1	613.0 / 569.0	3.90	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFDoA_2	613.0 / 319.0	3.90	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTrDA_1	663.0 / 619.0	4.15	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTrDA_2	663.0 / 169.0	4.15	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTeDA_1	713.0 / 669.0	4.37	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTeDA_2	713.0 / 169.0	4.37	13C2-PFOA	415.0 / 370.0	56830.73	100.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
NEtFOSAA_1	584.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
13C2-PFHxA	315.0 / 270.0	1.80	13C2-PFOA	415.0 / 370.0	56830.73	100.00
13C2-PFDA	515.0 / 470.0	3.28	13C2-PFOA	415.0 / 370.0	56830.73	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00

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Summary Internal Standard Report

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Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	181871.52	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	181871.52	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	181871.52	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	181871.52	287.00

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Summary Internal Standard Report

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Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.92	13C4-PFOS	503.0 / 80.0	185911.85	287.00
PFOS_2	499.0 / 99.0	2.92	13C4-PFOS	503.0 / 80.0	185911.85	287.00
NMeFOSAA_1	570.0 / 419.0	3.43	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
NMeFOSAA_2	570.0 / 512.0	3.42	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
NEtFOSAA_1	584.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
NEtFOSAA_2	584.0 / 483.0	3.57	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
d5-EtFOSAA	589.0 / 419.0	3.58	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
PFHxS_1	399.0 / 80.0	2.19	13C4-PFOS	503.0 / 80.0	185911.85	287.00
PFHxS_2	399.0 / 99.0	2.19	13C4-PFOS	503.0 / 80.0	185911.85	287.00

Raw Analytical Data

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It can be done

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Summary Quant Report

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Sample Name	CQ870PB-FS(0)	**Injection Vial**	12
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:16:36	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.54	3039.59	5.563566	58.2	true
PFBS_2	298.9 / 99.0	1.52	1544.47	5.286935	28.8	true
PFHxA_1	313.0 / 269.0	1.82	79951.77	112.694548	50.7	true
PFHxA_2	313.0 / 119.0	1.82	5123.83	113.850382	37.6	true
PFHpA_1	363.0 / 319.0	2.20	9205.67	< 0	26.6	true
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	2.21	9116.34	15.658228	45.5	true
PFHxS_2	399.0 / 99.0	2.21	3496.96	28.713941	42.3	true
PFOA_1	413.0 / 369.0	2.58	17907.07	< 0	28.9	true
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	true
PFNA_1	463.0 / 419.0	2.96	9388.97	0.832044	21.9	true
PFNA_2	463.0 / 219.0	2.96	3403.30	10.165191	15.9	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	3.30	1849.12	< 0	19.1	true
PFDA_2	513.0 / 219.0	3.31	387.43	< 0	19.5	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	3.92	2296.29	< 0	29.0	false
PFDoA_2	613.0 / 319.0	3.93	233.94	< 0	16.1	false
PFTrDA_1	663.0 / 619.0	4.17	1769.73	< 0	48.5	false
PFTrDA_2	663.0 / 169.0	4.17	163.77	< 0	12.7	false
PFTeDA_1	713.0 / 669.0	4.39	1858.66	< 0	37.3	true
PFTeDA_2	713.0 / 169.0	4.37	124.36	< 0	15.6	true
NMeFOSAA_1	570.0 / 419.0	3.45	662.14	1.847748	48.5	false
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	3.62	578.08	< 0	35.9	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	52270.91	109.982833	703.5	false
13C2-PFDA	515.0 / 470.0	3.30	52868.30	96.293361	1101.3	false
d5-EtFOSAA	589.0 / 419.0	3.61	26927.55	434.209396	232.3	false

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Summary Quant Report

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Sample Name	CQ871LCS-FS(0)	**Injection Vial**	13
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:25:31	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	2702711.18	6348.560512	3321.3	false
PFBS_2	298.9 / 99.0	1.53	818143.61	6264.787098	1415.2	false
PFHxA_1	313.0 / 269.0	1.83	3485494.32	7454.368743	208.5	false
PFHxA_2	313.0 / 119.0	1.82	247367.93	7265.524141	210.8	false
PFHpA_1	363.0 / 319.0	2.20	3716448.56	7051.944787	519.4	false
PFHpA_2	363.0 / 169.0	2.20	90203.24	7207.521467	368.9	false
PFHxS_1	399.0 / 80.0	2.22	3447914.51	6582.689007	879.6	false
PFHxS_2	399.0 / 99.0	2.22	970467.97	6422.507326	730.5	false
PFOA_1	413.0 / 369.0	2.58	3917369.04	6936.704969	397.1	false
PFOA_2	413.0 / 169.0	2.58	319827.61	7238.719189	408.2	false
PFNA_1	463.0 / 419.0	2.96	3612687.64	7001.349866	977.3	false
PFNA_2	463.0 / 219.0	2.96	1047246.80	7066.067464	610.3	false
PFOS_1	499.0 / 80.0	2.95	3783432.79	6367.177210	337.0	true
PFOS_2	499.0 / 99.0	2.95	783341.51	7088.954257	346.6	true
PFDA_1	513.0 / 469.0	3.31	3666940.45	6640.400890	1075.1	false
PFDA_2	513.0 / 219.0	3.31	182114.96	7424.907324	830.9	false
PFUnA_1	563.0 / 519.0	3.63	3394715.61	6797.498436	1013.7	false
PFUnA_2	563.0 / 269.0	3.63	177250.80	6828.683052	420.6	false
PFDoA_1	613.0 / 569.0	3.92	3655891.48	6916.504628	819.2	false
PFDoA_2	613.0 / 319.0	3.91	601762.63	6846.628661	910.7	false
PFTrDA_1	663.0 / 619.0	4.17	3661803.81	7421.932860	1223.6	false
PFTrDA_2	663.0 / 169.0	4.17	247728.98	7247.912794	952.5	false
PFTeDA_1	713.0 / 669.0	4.39	4234574.73	9553.427894	2236.6	true
PFTeDA_2	713.0 / 169.0	4.39	225437.03	9774.818557	1706.2	false
NMeFOSAA_1	570.0 / 419.0	3.46	433380.56	7816.765506	1899.9	false
NMeFOSAA_2	570.0 / 512.0	3.46	252548.41	7162.752789	1147.3	false
NEtFOSAA_1	584.0 / 419.0	3.62	425762.35	8079.967499	713.7	false
NEtFOSAA_2	584.0 / 483.0	3.62	24973.66	7207.615141	538.8	false
13C2-PFHxA	315.0 / 270.0	1.82	51012.53	107.668349	753.0	false
13C2-PFDA	515.0 / 470.0	3.30	56175.00	102.633805	1077.2	false
d5-EtFOSAA	589.0 / 419.0	3.61	25953.07	428.550261	256.6	false

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Summary Quant Report

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Sample Name	J6258-FS(0)	**Injection Vial**	14
Sample ID	WGNA-052918-RW-3124	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:34:27	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	396268.33	863.744923	432.7	true
PFBS_2	298.9 / 99.0	1.53	121321.85	858.000227	600.1	false
PFHxA_1	313.0 / 269.0	1.83	689875.35	1453.171540	106.9	false
PFHxA_2	313.0 / 119.0	1.83	48471.36	1418.179698	115.4	false
PFHpA_1	363.0 / 319.0	2.20	431574.37	813.433588	115.2	false
PFHpA_2	363.0 / 169.0	2.19	14383.26	1121.645143	158.2	false
PFHxS_1	399.0 / 80.0	2.21	835262.98	1480.903680	244.1	false
PFHxS_2	399.0 / 99.0	2.21	233359.57	1440.123681	273.1	false
PFOA_1	413.0 / 369.0	2.58	1678590.29	2999.124575	285.6	false
PFOA_2	413.0 / 169.0	2.57	180375.15	4132.332054	194.0	false
PFNA_1	463.0 / 419.0	2.96	195371.65	368.637180	133.5	false
PFNA_2	463.0 / 219.0	2.96	55937.07	371.735176	126.5	false
PFOS_1	499.0 / 80.0	2.93	1673954.32	2615.794678	48.1	true
PFOS_2	499.0 / 99.0	2.95	274456.81	2302.436568	105.3	true
PFDA_1	513.0 / 469.0	3.31	40344.15	60.871719	112.8	false
PFDA_2	513.0 / 219.0	3.31	1506.05	37.606548	46.6	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	3.91	3891.79	0.505017	52.8	false
PFDoA_2	613.0 / 319.0	3.92	333.60	< 0	20.9	false
PFTrDA_1	663.0 / 619.0	4.17	4162.00	1.669999	97.2	false
PFTrDA_2	663.0 / 169.0	4.16	325.12	3.055930	21.8	true
PFTeDA_1	713.0 / 669.0	4.39	3915.92	0.404690	52.6	true
PFTeDA_2	713.0 / 169.0	4.39	295.62	0.133396	31.4	true
NMeFOSAA_1	570.0 / 419.0	3.46	602.21	0.617093	58.6	false
NMeFOSAA_2	570.0 / 512.0	3.47	215.90	< 0	21.7	true
NEtFOSAA_1	584.0 / 419.0	3.62	567.93	< 0	27.5	false
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	49917.64	107.140280	576.4	false
13C2-PFDA	515.0 / 470.0	3.30	52318.13	97.204668	1029.2	false
d5-EtFOSAA	589.0 / 419.0	3.61	26128.46	414.429239	204.2	false

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Summary Quant Report

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Sample Name	J6260-FS(0)	**Injection Vial**	15
Sample ID	WGNA-052918-RW-3493	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:43:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	1082999.67	2312.297144	648.2	true
PFBS_2	298.9 / 99.0	1.53	331871.22	2306.896564	783.0	false
PFHxA_1	313.0 / 269.0	1.82	918304.73	2030.357697	132.1	false
PFHxA_2	313.0 / 119.0	1.82	62091.99	1897.856118	131.0	false
PFHpA_1	363.0 / 319.0	2.19	597680.01	1178.878096	152.7	false
PFHpA_2	363.0 / 169.0	2.17	19579.46	1608.038346	166.4	false
PFHxS_1	399.0 / 80.0	2.21	1456464.54	2527.819859	305.8	false
PFHxS_2	399.0 / 99.0	2.21	406035.08	2447.524752	364.6	false
PFOA_1	413.0 / 369.0	2.58	2155530.75	4011.407039	293.4	false
PFOA_2	413.0 / 169.0	2.55	243825.21	5816.228455	207.2	true
PFNA_1	463.0 / 419.0	2.95	308057.58	614.378270	165.6	false
PFNA_2	463.0 / 219.0	2.95	94020.74	658.058181	162.3	false
PFOS_1	499.0 / 80.0	2.91	3180887.44	4866.752986	60.4	true
PFOS_2	499.0 / 99.0	2.95	498956.94	4102.437925	146.1	true
PFDA_1	513.0 / 469.0	3.30	53957.82	89.773806	114.8	false
PFDA_2	513.0 / 219.0	3.30	1957.41	59.475113	62.4	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	3.91	2139.40	< 0	23.7	false
PFDoA_2	613.0 / 319.0	3.94	559.85	< 0	24.4	true
PFTrDA_1	663.0 / 619.0	4.16	1454.76	< 0	46.6	false
PFTrDA_2	663.0 / 169.0	4.17	288.96	2.305887	21.0	false
PFTeDA_1	713.0 / 669.0	4.38	1556.67	< 0	29.4	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	3.44	317.37	< 0	23.0	false
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	52324.11	116.569952	626.2	false
13C2-PFDA	515.0 / 470.0	3.29	59584.46	114.908968	756.3	false
d5-EtFOSAA	589.0 / 419.0	3.61	27540.82	430.416420	232.2	false

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Summary Quant Report

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Sample Name	J6262-FS(0)	**Injection Vial**	16
Sample ID	WGNA-052918-RW-3882	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:52:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	633348.59	1185.313438	133.6	false
PFBS_2	298.9 / 99.0	1.52	198156.09	1205.153411	534.4	false
PFHxA_1	313.0 / 269.0	1.82	1455910.52	2535.782163	153.8	false
PFHxA_2	313.0 / 119.0	1.82	94390.84	2266.966534	157.7	false
PFHpA_1	363.0 / 319.0	2.19	826024.47	1278.039016	188.8	false
PFHpA_2	363.0 / 169.0	2.17	25904.31	1668.533513	192.5	false
PFHxS_1	399.0 / 80.0	2.21	1802946.68	2744.248005	359.2	false
PFHxS_2	399.0 / 99.0	2.21	513572.52	2714.116649	389.1	false
PFOA_1	413.0 / 369.0	2.57	1696686.06	2457.313585	258.9	false
PFOA_2	413.0 / 169.0	2.56	191495.57	3560.799301	179.8	false
PFNA_1	463.0 / 419.0	2.95	559680.18	881.680054	285.7	false
PFNA_2	463.0 / 219.0	2.95	159488.07	878.585415	215.3	false
PFOS_1	499.0 / 80.0	2.91	5451114.02	7315.270793	82.4	false
PFOS_2	499.0 / 99.0	2.95	863290.75	6228.574476	174.9	false
PFDA_1	513.0 / 469.0	3.30	37751.77	43.065079	106.9	false
PFDA_2	513.0 / 219.0	3.29	2193.90	49.159285	51.6	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	3.91	2271.59	< 0	28.5	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	1505.12	< 0	57.9	true
PFTrDA_2	663.0 / 169.0	4.15	257.63	< 0	20.2	false
PFTeDA_1	713.0 / 669.0	4.38	1606.36	< 0	34.4	true
PFTeDA_2	713.0 / 169.0	4.36	138.90	< 0	14.8	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	59282.54	103.453923	598.3	false
13C2-PFDA	515.0 / 470.0	3.29	61454.45	92.834551	1077.1	false
d5-EtFOSAA	589.0 / 419.0	3.61	29055.07	412.122685	301.8	false

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Summary Quant Report

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Sample Name	J6264-FS(0)	**Injection Vial**	17
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:01:12	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	393785.81	1108.859638	414.9	true
PFBS_2	298.9 / 99.0	1.53	127534.14	1166.938646	527.0	false
PFHxA_1	313.0 / 269.0	1.82	864577.89	2392.203274	111.8	false
PFHxA_2	313.0 / 119.0	1.82	61486.36	2350.453122	118.5	false
PFHpA_1	363.0 / 319.0	2.20	533014.98	1312.480985	118.5	false
PFHpA_2	363.0 / 169.0	2.19	15159.41	1549.420230	164.7	false
PFHxS_1	399.0 / 80.0	2.21	782566.28	1792.064484	199.9	false
PFHxS_2	399.0 / 99.0	2.21	214721.70	1710.054513	257.1	false
PFOA_1	413.0 / 369.0	2.58	1315917.53	3041.537675	234.6	false
PFOA_2	413.0 / 169.0	2.57	139871.26	4144.695209	165.7	false
PFNA_1	463.0 / 419.0	2.95	254205.78	632.225187	136.4	false
PFNA_2	463.0 / 219.0	2.95	76029.84	663.184115	163.0	false
PFOS_1	499.0 / 80.0	2.92	1873248.09	3781.515278	47.8	true
PFOS_2	499.0 / 99.0	2.95	299102.60	3243.624467	108.8	true
PFDA_1	513.0 / 469.0	3.30	83673.84	186.128758	113.4	false
PFDA_2	513.0 / 219.0	3.31	4244.30	203.321179	150.3	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	3.91	3913.43	2.757912	37.8	false
PFDoA_2	613.0 / 319.0	3.92	476.78	< 0	25.8	false
PFTrDA_1	663.0 / 619.0	4.16	853.56	< 0	26.5	true
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.38	718.95	< 0	14.4	true
PFTeDA_2	713.0 / 169.0	4.35	96.61	< 0	10.0	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	41189.28	114.344303	404.3	false
13C2-PFDA	515.0 / 470.0	3.29	42977.51	103.277987	604.4	false
d5-EtFOSAA	589.0 / 419.0	N/A	N/A	N/A	N/A	true

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Summary Quant Report

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Sample Name	J6266-FS(0)	**Injection Vial**	18
Sample ID	NAWC-052918-RW-161	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:10:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	829884.28	2208.517206	479.4	true
PFBS_2	298.9 / 99.0	1.53	258981.88	2243.753362	618.7	false
PFHxA_1	313.0 / 269.0	1.82	1343348.44	3352.242858	141.1	false
PFHxA_2	313.0 / 119.0	1.82	92926.05	3194.718484	149.4	false
PFHpA_1	363.0 / 319.0	2.19	802999.40	1778.630170	155.7	false
PFHpA_2	363.0 / 169.0	2.18	22360.09	2064.970254	180.7	false
PFHxS_1	399.0 / 80.0	2.21	1805888.63	3907.161220	298.3	false
PFHxS_2	399.0 / 99.0	2.21	480398.91	3606.191187	358.6	false
PFOA_1	413.0 / 369.0	2.57	2564877.79	5340.870500	269.9	false
PFOA_2	413.0 / 169.0	2.57	271000.58	7225.585987	230.9	false
PFNA_1	463.0 / 419.0	2.95	437729.54	984.478098	224.4	false
PFNA_2	463.0 / 219.0	2.95	128897.96	1013.641706	229.4	false
PFOS_1	499.0 / 80.0	2.92	5326929.67	10161.443209	93.6	false
PFOS_2	499.0 / 99.0	2.95	828200.89	8495.714180	188.2	false
PFDA_1	513.0 / 469.0	3.30	85457.07	169.103457	123.5	false
PFDA_2	513.0 / 219.0	3.30	4270.83	180.771859	109.3	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	4.17	929.94	< 0	28.7	false
PFTrDA_2	663.0 / 169.0	4.18	279.05	3.000696	16.9	false
PFTeDA_1	713.0 / 669.0	4.39	790.96	< 0	17.3	true
PFTeDA_2	713.0 / 169.0	4.38	94.46	< 0	13.6	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	47857.42	118.993280	509.7	false
13C2-PFDA	515.0 / 470.0	3.29	46581.38	100.258606	678.5	false
d5-EtFOSAA	589.0 / 419.0	3.61	22926.07	453.837177	214.0	false

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Summary Quant Report

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Sample Name	J6270-FS(0)	**Injection Vial**	19
Sample ID	WGNA-053018-RW-3876	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:19:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	373379.13	814.623000	468.8	true
PFBS_2	298.9 / 99.0	1.52	109034.30	771.303863	442.2	true
PFHxA_1	313.0 / 269.0	1.81	588709.99	1258.184539	121.9	true
PFHxA_2	313.0 / 119.0	1.82	34721.79	1027.045146	105.3	false
PFHpA_1	363.0 / 319.0	2.19	405879.97	780.001983	120.5	false
PFHpA_2	363.0 / 169.0	2.12	22188.43	1798.504263	164.1	false
PFHxS_1	399.0 / 80.0	2.21	684656.85	1214.993376	207.5	false
PFHxS_2	399.0 / 99.0	2.21	188202.18	1163.970630	239.9	false
PFOA_1	413.0 / 369.0	2.57	1605861.65	2927.739955	233.4	false
PFOA_2	413.0 / 169.0	2.53	192010.41	4494.075581	193.6	true
PFNA_1	463.0 / 419.0	2.94	219239.48	424.780329	113.8	false
PFNA_2	463.0 / 219.0	2.94	68192.48	465.704080	128.9	false
PFOS_1	499.0 / 80.0	2.87	1733445.73	2711.627335	37.5	true
PFOS_2	499.0 / 99.0	2.94	231337.88	1941.539505	73.7	true
PFDA_1	513.0 / 469.0	3.30	18299.93	20.894449	49.3	false
PFDA_2	513.0 / 219.0	3.30	928.19	14.368425	26.4	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	3.92	1529.24	< 0	16.4	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	1868.07	< 0	37.6	false
PFTrDA_2	663.0 / 169.0	4.16	341.53	3.755578	22.3	false
PFTeDA_1	713.0 / 669.0	4.38	1363.66	< 0	25.2	true
PFTeDA_2	713.0 / 169.0	4.40	115.35	< 0	14.6	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	53340.61	116.862876	518.2	false
13C2-PFDA	515.0 / 470.0	3.29	53487.08	101.438700	920.6	false
d5-EtFOSAA	589.0 / 419.0	3.61	26515.75	443.697395	283.4	false

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Summary Quant Report

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Sample Name	J6272-FS(0)	**Injection Vial**	21
Sample ID	WGNA-053018-DUP-37	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:36:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	318980.21	812.647934	446.9	true
PFBS_2	298.9 / 99.0	1.53	99452.17	821.887507	466.9	true
PFHxA_1	313.0 / 269.0	1.82	510006.58	1252.854772	105.8	true
PFHxA_2	313.0 / 119.0	1.82	28452.38	965.404237	109.8	true
PFHpA_1	363.0 / 319.0	2.19	376835.41	834.035596	121.1	false
PFHpA_2	363.0 / 169.0	2.13	18574.15	1728.733435	181.7	false
PFHxS_1	399.0 / 80.0	2.21	642653.94	1331.789009	225.2	false
PFHxS_2	399.0 / 99.0	2.21	179742.22	1297.282271	238.1	false
PFOA_1	413.0 / 369.0	2.57	1409832.58	2955.384124	228.3	false
PFOA_2	413.0 / 169.0	2.53	172948.85	4655.298429	197.9	true
PFNA_1	463.0 / 419.0	2.94	218037.90	488.158835	125.3	false
PFNA_2	463.0 / 219.0	2.94	66085.05	520.306939	127.3	false
PFOS_1	499.0 / 80.0	2.87	1548258.70	2828.214569	38.8	true
PFOS_2	499.0 / 99.0	2.94	214633.28	2104.060847	75.4	true
PFDA_1	513.0 / 469.0	3.30	17806.10	24.983365	60.0	false
PFDA_2	513.0 / 219.0	3.30	353.84	< 0	13.7	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	3.90	1144.23	< 0	16.7	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	1278.04	< 0	33.3	false
PFTrDA_2	663.0 / 169.0	4.14	212.33	0.794216	13.9	false
PFTeDA_1	713.0 / 669.0	4.38	788.75	< 0	16.7	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	47262.78	119.042702	511.4	false
13C2-PFDA	515.0 / 470.0	3.29	50524.97	110.160466	924.6	false
d5-EtFOSAA	589.0 / 419.0	3.61	22569.19	437.581425	255.1	false

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Summary Quant Report

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Sample Name	J6273-FS(0)	**Injection Vial**	22
Sample ID	NAWC-053018-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:45:47	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	650150.44	1646.364161	479.5	true
PFBS_2	298.9 / 99.0	1.53	209928.27	1729.605003	665.8	false
PFHxA_1	313.0 / 269.0	1.82	1190814.35	2663.626805	108.2	false
PFHxA_2	313.0 / 119.0	1.82	74896.75	2308.232908	123.3	true
PFHpA_1	363.0 / 319.0	2.20	590964.17	1171.174097	127.5	false
PFHpA_2	363.0 / 169.0	2.18	18408.90	1516.171628	169.6	false
PFHxS_1	399.0 / 80.0	2.21	7370148.93	15178.067384	527.2	false
PFHxS_2	399.0 / 99.0	2.21	1966108.71	14026.276728	659.5	false
PFOA_1	413.0 / 369.0	2.58	1607174.99	2995.043907	242.2	false
PFOA_2	413.0 / 169.0	2.57	169623.90	4052.392597	170.8	true
PFNA_1	463.0 / 419.0	2.96	251990.18	501.920881	158.7	false
PFNA_2	463.0 / 219.0	2.95	70895.00	495.525095	176.4	false
PFOS_1	499.0 / 80.0	2.94	11296994.52	20511.591626	140.9	false
PFOS_2	499.0 / 99.0	2.95	1906976.64	18626.179654	225.4	false
PFDA_1	513.0 / 469.0	3.30	48519.90	79.811313	87.6	false
PFDA_2	513.0 / 219.0	3.30	2418.25	79.883145	68.8	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	3.92	938.01	< 0	14.8	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.17	678.19	< 0	20.5	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.38	844.73	< 0	17.2	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	47612.96	106.591422	467.5	false
13C2-PFDA	515.0 / 470.0	3.29	49933.60	96.766748	602.4	false
d5-EtFOSAA	589.0 / 419.0	3.61	20658.05	352.279346	230.5	false

BATTELLE

Summary Quant Report

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Sample Name	J6275-FS(0)	**Injection Vial**	23
Sample ID	WGNA-053018-RW-3933	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:54:42	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	1048515.71	2169.288260	714.3	true
PFBS_2	298.9 / 99.0	1.53	323141.73	2176.340711	795.2	false
PFHxA_1	313.0 / 269.0	1.82	1347798.49	2836.276792	151.9	false
PFHxA_2	313.0 / 119.0	1.82	93301.56	2707.923645	152.0	false
PFHpA_1	363.0 / 319.0	2.19	1040740.84	1952.213614	184.7	false
PFHpA_2	363.0 / 169.0	2.17	34881.65	2743.050627	198.3	false
PFHxS_1	399.0 / 80.0	2.21	813422.20	1367.708186	239.1	false
PFHxS_2	399.0 / 99.0	2.21	235464.97	1378.435495	264.3	false
PFOA_1	413.0 / 369.0	2.57	3060254.72	5391.110069	304.7	false
PFOA_2	413.0 / 169.0	2.56	331606.55	7481.035792	240.6	false
PFNA_1	463.0 / 419.0	2.95	355238.07	670.431150	197.9	false
PFNA_2	463.0 / 219.0	2.95	104507.59	691.221843	217.4	false
PFOS_1	499.0 / 80.0	2.92	3817752.12	5660.693098	80.1	true
PFOS_2	499.0 / 99.0	2.95	608297.14	4847.939694	184.2	true
PFDA_1	513.0 / 469.0	3.30	57455.00	90.323934	109.3	false
PFDA_2	513.0 / 219.0	3.30	2271.91	67.574516	66.4	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	3.89	745.53	< 0	15.9	false
PFDoA_2	613.0 / 319.0	3.90	177.56	< 0	12.4	true
PFTrDA_1	663.0 / 619.0	4.16	980.47	< 0	28.4	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.38	909.13	< 0	16.2	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	52736.56	110.924830	582.2	false
13C2-PFDA	515.0 / 470.0	3.29	56843.26	103.498035	718.0	false
d5-EtFOSAA	589.0 / 419.0	3.61	25414.12	410.966607	286.9	true

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Summary Quant Report

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Sample Name	J6277-FS(0)	**Injection Vial**	24
Sample ID	NAWC-053018-RW-164	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:03:37	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	3219098.53	7922.892360	1106.9	true
PFBS_2	298.9 / 99.0	1.53	975958.71	7831.547598	1130.0	false
PFHxA_1	313.0 / 269.0	1.82	916094.61	2197.535495	136.5	false
PFHxA_2	313.0 / 119.0	1.82	62761.58	2080.287379	137.8	false
PFHpA_1	363.0 / 319.0	2.19	698928.64	1498.306735	161.9	false
PFHpA_2	363.0 / 169.0	2.18	22009.57	1969.146733	190.4	false
PFHxS_1	399.0 / 80.0	2.21	910251.14	1820.268219	254.0	false
PFHxS_2	399.0 / 99.0	2.21	250558.73	1742.407199	292.7	false
PFOA_1	413.0 / 369.0	2.57	2512068.78	5072.057247	294.0	false
PFOA_2	413.0 / 169.0	2.55	279104.81	7218.604479	228.8	false
PFNA_1	463.0 / 419.0	2.95	272767.29	588.220418	183.0	false
PFNA_2	463.0 / 219.0	2.95	84803.79	642.283774	176.5	false
PFOS_1	499.0 / 80.0	2.88	2224156.94	3920.887518	47.8	true
PFOS_2	499.0 / 99.0	2.94	303366.39	2872.023645	109.0	true
PFDA_1	513.0 / 469.0	3.30	18763.92	25.333879	61.2	false
PFDA_2	513.0 / 219.0	3.29	617.92	3.840445	18.2	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	3.90	949.71	< 0	13.0	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	840.69	< 0	27.4	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.37	596.11	< 0	11.5	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	49535.38	119.474242	582.4	false
13C2-PFDA	515.0 / 470.0	3.29	50238.56	104.889537	940.2	false
d5-EtFOSAA	589.0 / 419.0	3.60	25815.24	505.646383	306.9	true

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Summary Quant Report

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Sample Name	J6279-FS(0)	**Injection Vial**	25
Sample ID	NAWC-053018-RW-292	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:12:32	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	720927.22	1596.263308	567.7	true
PFBS_2	298.9 / 99.0	1.52	229944.29	1656.320320	735.3	false
PFHxA_1	313.0 / 269.0	1.81	1320154.14	2892.342717	150.8	false
PFHxA_2	313.0 / 119.0	1.81	91525.91	2765.300703	158.6	false
PFHpA_1	363.0 / 319.0	2.19	994103.63	1940.514357	208.4	false
PFHpA_2	363.0 / 169.0	2.18	26660.88	2170.438023	193.7	false
PFHxS_1	399.0 / 80.0	2.20	1244244.68	2239.915635	268.6	false
PFHxS_2	399.0 / 99.0	2.20	338202.77	2115.583254	315.8	false
PFOA_1	413.0 / 369.0	2.57	3781904.38	6945.571125	480.7	false
PFOA_2	413.0 / 169.0	2.56	372854.26	8761.681799	319.2	false
PFNA_1	463.0 / 419.0	2.95	488434.20	966.812486	232.7	false
PFNA_2	463.0 / 219.0	2.95	142442.12	985.820426	229.4	false
PFOS_1	499.0 / 80.0	2.91	3607456.10	5725.584855	75.5	true
PFOS_2	499.0 / 99.0	2.94	576843.91	4921.126464	152.7	true
PFDA_1	513.0 / 469.0	3.30	76876.04	131.103433	151.8	false
PFDA_2	513.0 / 219.0	3.30	3723.22	132.919720	96.8	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	3.91	1702.97	< 0	16.5	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	857.78	< 0	27.9	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.36	842.31	< 0	14.5	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.80	52990.16	115.995671	455.8	false
13C2-PFDA	515.0 / 470.0	3.29	49034.13	92.913999	651.9	false
d5-EtFOSAA	589.0 / 419.0	3.60	24441.46	427.975156	208.2	false

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Summary Quant Report

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Sample Name	J6281-FS(0)	**Injection Vial**	26
Sample ID	NAWC-053018-RW-271	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:21:26	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	376431.38	851.424924	514.5	true
PFBS_2	298.9 / 99.0	1.52	114717.71	841.772582	486.4	true
PFHxA_1	313.0 / 269.0	1.82	683984.16	1505.506585	130.5	false
PFHxA_2	313.0 / 119.0	1.82	43908.02	1338.549144	119.3	false
PFHpA_1	363.0 / 319.0	2.19	471441.92	930.312211	130.6	false
PFHpA_2	363.0 / 169.0	2.16	17192.62	1412.967288	133.1	false
PFHxS_1	399.0 / 80.0	2.21	813173.66	1496.104877	230.6	false
PFHxS_2	399.0 / 99.0	2.21	224802.68	1439.624659	238.8	false
PFOA_1	413.0 / 369.0	2.57	1823278.56	3404.972260	276.5	false
PFOA_2	413.0 / 169.0	2.54	210912.48	5052.126437	184.2	true
PFNA_1	463.0 / 419.0	2.95	184322.87	362.655852	142.2	false
PFNA_2	463.0 / 219.0	2.95	54899.90	381.028221	136.1	false
PFOS_1	499.0 / 80.0	2.88	1700093.11	2756.929123	41.8	true
PFOS_2	499.0 / 99.0	2.94	249097.23	2168.047061	84.6	true
PFDA_1	513.0 / 469.0	3.30	25734.54	35.979294	81.6	false
PFDA_2	513.0 / 219.0	3.30	1557.19	42.553003	43.1	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	3.90	901.33	< 0	12.0	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	492.15	< 0	16.1	true
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.37	613.11	< 0	11.7	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	47126.40	105.551090	541.4	false
13C2-PFDA	515.0 / 470.0	3.29	53199.75	103.144056	1099.2	false
d5-EtFOSAA	589.0 / 419.0	3.60	24910.76	427.395082	203.8	false

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Summary Quant Report

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Sample Name	J6283-FS(0)	**Injection Vial**	27
Sample ID	NAWC-053018-RW-270	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:30:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	721136.64	1717.017180	584.2	true
PFBS_2	298.9 / 99.0	1.53	223590.55	1732.063728	697.1	false
PFHxA_1	313.0 / 269.0	1.82	550670.33	1241.274276	104.7	false
PFHxA_2	313.0 / 119.0	1.82	38923.92	1221.836308	105.0	false
PFHpA_1	363.0 / 319.0	2.19	452416.50	921.427686	135.6	false
PFHpA_2	363.0 / 169.0	2.17	13993.73	1178.275337	157.6	false
PFHxS_1	399.0 / 80.0	2.21	631948.40	1222.945405	212.9	false
PFHxS_2	399.0 / 99.0	2.21	172671.25	1164.551891	233.9	false
PFOA_1	413.0 / 369.0	2.57	1567237.00	3016.739008	250.4	false
PFOA_2	413.0 / 169.0	2.56	171318.86	4229.113600	190.0	false
PFNA_1	463.0 / 419.0	2.95	241296.22	496.197907	155.1	false
PFNA_2	463.0 / 219.0	2.95	73219.31	529.413047	170.6	false
PFOS_1	499.0 / 80.0	2.90	2026649.52	3457.819011	52.3	true
PFOS_2	499.0 / 99.0	2.94	317391.23	2908.499654	111.1	true
PFDA_1	513.0 / 469.0	3.30	45479.19	76.830774	108.2	false
PFDA_2	513.0 / 219.0	3.30	1737.88	52.835712	56.2	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	3.91	962.10	< 0	17.4	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.14	397.60	< 0	14.3	true
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.36	827.66	< 0	13.7	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	49302.94	113.996093	565.9	false
13C2-PFDA	515.0 / 470.0	3.29	49462.82	98.999330	673.0	false
d5-EtFOSAA	589.0 / 419.0	3.60	25086.36	451.546749	225.9	false

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Summary Quant Report

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Sample Name	J6285-FS(0)	**Injection Vial**	28
Sample ID	NAWC-053018-RW-196	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:39:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	912414.67	2075.175636	616.9	true
PFBS_2	298.9 / 99.0	1.52	279461.91	2068.838492	785.5	false
PFHxA_1	313.0 / 269.0	1.81	1601224.24	3624.865884	157.2	false
PFHxA_2	313.0 / 119.0	1.81	111804.75	3485.753142	170.5	false
PFHpA_1	363.0 / 319.0	2.19	917811.07	1842.612196	182.8	false
PFHpA_2	363.0 / 169.0	2.18	28787.17	2417.954752	218.7	false
PFHxS_1	399.0 / 80.0	2.20	343196.31	633.976220	152.5	false
PFHxS_2	399.0 / 99.0	2.20	97689.65	632.454380	167.4	false
PFOA_1	413.0 / 369.0	2.57	2303460.03	4337.852154	309.0	false
PFOA_2	413.0 / 169.0	2.55	252283.27	6087.161501	246.6	false
PFNA_1	463.0 / 419.0	2.95	308806.56	622.974125	170.3	false
PFNA_2	463.0 / 219.0	2.94	91577.88	647.913021	197.8	false
PFOS_1	499.0 / 80.0	2.90	2059283.85	3355.716722	58.3	true
PFOS_2	499.0 / 99.0	2.94	321215.55	2811.167428	110.4	true
PFDA_1	513.0 / 469.0	3.29	104438.83	188.693342	137.9	false
PFDA_2	513.0 / 219.0	3.29	4932.12	190.297038	106.8	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	3.90	1830.47	< 0	22.6	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.15	1029.33	< 0	33.8	false
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.36	865.87	< 0	17.4	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.81	47847.15	107.784365	394.9	false
13C2-PFDA	515.0 / 470.0	3.28	49619.47	96.758241	642.8	false
d5-EtFOSAA	589.0 / 419.0	3.60	23905.04	431.335097	252.4	false

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Summary Quant Report

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Sample Name	J6287-FS(0)	**Injection Vial**	29
Sample ID	NAWC-053018-RW-172	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:48:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	357701.28	763.616155	464.8	true
PFBS_2	298.9 / 99.0	1.52	109413.52	757.289952	494.1	true
PFHxA_1	313.0 / 269.0	1.81	627207.92	1324.294720	126.1	false
PFHxA_2	313.0 / 119.0	1.81	39677.41	1161.545536	107.5	true
PFHpA_1	363.0 / 319.0	2.18	470048.97	893.528484	132.0	false
PFHpA_2	363.0 / 169.0	2.16	14513.70	1139.672297	140.8	false
PFHxS_1	399.0 / 80.0	2.20	570114.66	989.899921	198.9	false
PFHxS_2	399.0 / 99.0	2.20	151757.66	919.912527	215.3	false
PFOA_1	413.0 / 369.0	2.56	1543053.09	2770.868530	305.7	false
PFOA_2	413.0 / 169.0	2.54	179075.10	4127.856543	180.6	true
PFNA_1	463.0 / 419.0	2.94	155539.34	291.841047	158.1	false
PFNA_2	463.0 / 219.0	2.94	48352.36	321.653249	136.2	false
PFOS_1	499.0 / 80.0	2.88	1431757.60	2191.238321	37.7	true
PFOS_2	499.0 / 99.0	2.93	210596.00	1728.761566	82.5	true
PFDA_1	513.0 / 469.0	3.29	12340.43	9.337440	61.4	false
PFDA_2	513.0 / 219.0	3.27	523.91	< 0	22.8	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	3.89	466.11	< 0	8.7	false
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	true
PFTrDA_1	663.0 / 619.0	4.16	547.97	< 0	22.3	true
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	true
PFTeDA_1	713.0 / 669.0	4.36	759.55	< 0	13.0	true
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	true
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	true
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.80	53171.10	114.828657	591.2	false
13C2-PFDA	515.0 / 470.0	3.28	58369.28	109.117687	1104.8	false
d5-EtFOSAA	589.0 / 419.0	3.60	29309.82	481.401739	236.0	false

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Summary Quant Report

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Sample Name	J6264-FS(0)	**Injection Vial**	18
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T19:22:36	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
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
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
d5-EtFOSAA	589.0 / 419.0	3.58	19334.55	364.922476	270.2	false
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

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Summary Quant Report

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Sample Name	J6273-FS-D(3)	**Injection Vial**	31
Sample ID	NAWC-050318-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T20:16:14	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.92	435238.65	813.500435	52.6	true
PFOS_2	499.0 / 99.0	2.93	76264.98	766.107975	79.6	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
d5-EtFOSAA	589.0 / 419.0	N/A	N/A	N/A	N/A	true
PFHxS_1	399.0 / 80.0	2.20	228605.27	530.126486	273.7	false
PFHxS_2	399.0 / 99.0	2.20	60637.09	498.077107	236.5	false

Summary Ion Ratio Report

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Sample Name	CQ870PB-FS(0)	**Injection Vial**	12
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:16:36	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	1.52	PFBS	0.508	0.314	
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.064	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.025	
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.384	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	N/A	PFOA	N/A	0.079	
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.363	0.282	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	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.210	0.046	
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.102	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.093	0.069	ü
PFTeDA_1	713.0 / 669.0	4.39	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.37	PFTeDA	0.067	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	CQ871LCS-FS(0)	**Injection Vial**	13
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:25:31	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.303	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.071	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.282	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.082	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.290	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.207	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.050	0.046	ü
PFUnA_1	563.0 / 519.0	3.63	PFUnA			
PFUnA_2	563.0 / 269.0	3.63	PFUnA	0.052	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.91	PFDoA	0.165	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.068	0.069	ü
PFTeDA_1	713.0 / 669.0	4.39	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.39	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.583	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.059	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6258-FS(0)	**Injection Vial**	14
Sample ID	WGNA-052918-RW-3124	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:34:27	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.306	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.070	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.19	PFHpA	0.033	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.279	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.57	PFOA	0.108	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.286	0.282	ü
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.164	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.037	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.086	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.16	PFTrDA	0.078	0.069	ü
PFTeDA_1	713.0 / 669.0	4.39	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.39	PFTeDA	0.076	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.359	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6260-FS(0)	**Injection Vial**	15
Sample ID	WGNA-052918-RW-3493	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:43:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.306	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.068	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.17	PFHpA	0.033	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.279	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.55	PFOA	0.113	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.305	0.282	ü
PFOS_1	499.0 / 80.0	2.91	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.157	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.036	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	3.94	PFDoA	0.262	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.199	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6262-FS(0)	**Injection Vial**	16
Sample ID	WGNA-052918-RW-3882	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:52:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.313	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.065	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.17	PFHpA	0.031	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.285	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.56	PFOA	0.113	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.285	0.282	ü
PFOS_1	499.0 / 80.0	2.91	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.158	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.29	PFDA	0.058	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.15	PFTrDA	0.171	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.36	PFTeDA	0.087	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	J6264-FS(0)	**Injection Vial**	17
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:01:12	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.324	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.071	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.19	PFHpA	0.028	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.274	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.57	PFOA	0.106	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.299	0.282	ü
PFOS_1	499.0 / 80.0	2.92	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.160	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.051	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.122	0.170	ü
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.35	PFTeDA	0.134	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	N/A		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6266-FS(0)	**Injection Vial**	18
Sample ID	NAWC-052918-RW-161	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:10:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.312	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.069	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.028	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.266	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.57	PFOA	0.106	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.295	0.282	ü
PFOS_1	499.0 / 80.0	2.92	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.156	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.050	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	N/A	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.300	0.069	
PFTeDA_1	713.0 / 669.0	4.39	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.38	PFTeDA	0.119	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6270-FS(0)	**Injection Vial**	19
Sample ID	WGNA-053018-RW-3876	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:19:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.292	0.314	ü
PFHxA_1	313.0 / 269.0	1.81	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.059	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.12	PFHpA	0.055	0.025	
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.275	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.53	PFOA	0.120	0.079	
PFNA_1	463.0 / 419.0	2.94	PFNA			
PFNA_2	463.0 / 219.0	2.94	PFNA	0.311	0.282	ü
PFOS_1	499.0 / 80.0	2.87	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.134	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.051	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.16	PFTrDA	0.183	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.085	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6272-FS(0)	**Injection Vial**	21
Sample ID	WGNA-053018-DUP-37	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:36:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.312	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.056	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.13	PFHpA	0.049	0.025	
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.280	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.53	PFOA	0.123	0.079	
PFNA_1	463.0 / 419.0	2.94	PFNA			
PFNA_2	463.0 / 219.0	2.94	PFNA	0.303	0.282	ü
PFOS_1	499.0 / 80.0	2.87	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.139	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.020	0.046	
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.90	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.14	PFTrDA	0.166	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6273-FS(0)	**Injection Vial**	22
Sample ID	NAWC-053018-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:45:47	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.323	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.063	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.031	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.267	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.57	PFOA	0.106	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.281	0.282	ü
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.169	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.050	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6275-FS(0)	**Injection Vial**	23
Sample ID	WGNA-053018-RW-3933	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:54:42	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.308	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.069	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.17	PFHpA	0.034	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.290	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.56	PFOA	0.108	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.294	0.282	ü
PFOS_1	499.0 / 80.0	2.92	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.159	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.040	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.89	PFDoA			
PFDoA_2	613.0 / 319.0	3.90	PFDoA	0.238	0.170	ü
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	J6277-FS(0)	**Injection Vial**	24
Sample ID	NAWC-053018-RW-164	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:03:37	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.303	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.069	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.032	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.275	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.55	PFOA	0.111	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.311	0.282	ü
PFOS_1	499.0 / 80.0	2.88	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.136	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.29	PFDA	0.033	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.90	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.37	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	J6279-FS(0)	**Injection Vial**	25
Sample ID	NAWC-053018-RW-292	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:12:32	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.319	0.314	ü
PFHxA_1	313.0 / 269.0	1.81	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.069	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.027	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.272	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.56	PFOA	0.099	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.292	0.282	ü
PFOS_1	499.0 / 80.0	2.91	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.160	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.048	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.36	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.80				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	J6281-FS(0)	**Injection Vial**	26
Sample ID	NAWC-053018-RW-271	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:21:26	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.305	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.064	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.16	PFHpA	0.037	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.277	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.54	PFOA	0.116	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.298	0.282	ü
PFOS_1	499.0 / 80.0	2.88	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.147	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.061	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.90	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.37	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	J6283-FS(0)	**Injection Vial**	27
Sample ID	NAWC-053018-RW-270	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:30:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.310	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.071	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.17	PFHpA	0.031	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.273	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.56	PFOA	0.109	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.303	0.282	ü
PFOS_1	499.0 / 80.0	2.90	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.157	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.038	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.14	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.36	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6285-FS(0)	**Injection Vial**	28
Sample ID	NAWC-053018-RW-196	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:39:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.306	0.314	ü
PFHxA_1	313.0 / 269.0	1.81	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.070	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.031	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.285	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.55	PFOA	0.110	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.94	PFNA	0.297	0.282	ü
PFOS_1	499.0 / 80.0	2.90	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.156	0.190	ü
PFDA_1	513.0 / 469.0	3.29	PFDA			
PFDA_2	513.0 / 219.0	3.29	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.90	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.15	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.36	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.28		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

Summary Ion Ratio Report

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Sample Name	J6287-FS(0)	**Injection Vial**	29
Sample ID	NAWC-053018-RW-172	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:48:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.306	0.314	ü
PFHxA_1	313.0 / 269.0	1.81	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.063	0.070	ü
PFHpA_1	363.0 / 319.0	2.18	PFHpA			
PFHpA_2	363.0 / 169.0	2.16	PFHpA	0.031	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.266	0.278	ü
PFOA_1	413.0 / 369.0	2.56	PFOA			
PFOA_2	413.0 / 169.0	2.54	PFOA	0.116	0.079	ü
PFNA_1	463.0 / 419.0	2.94	PFNA			
PFNA_2	463.0 / 219.0	2.94	PFNA	0.311	0.282	ü
PFOS_1	499.0 / 80.0	2.88	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.147	0.190	ü
PFDA_1	513.0 / 469.0	3.29	PFDA			
PFDA_2	513.0 / 219.0	3.27	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	N/A	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	PFUnA	N/A	0.054	ü
PFDoA_1	613.0 / 569.0	3.89	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	PFDoA	N/A	0.170	
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	PFTrDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.36	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	PFTeDA	N/A	0.053	
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.643	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.80				
13C2-PFDA	515.0 / 470.0	3.28		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	J6264-FS(0)	**Injection Vial**	18
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T19:22:36	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	N/A	PFOS			
PFOS_2	499.0 / 99.0	N/A	PFOS	N/A	0.193	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.649	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.58				
PFHxS_1	399.0 / 80.0	N/A	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	PFHxS	N/A	0.283	ü

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Summary Ion Ratio Report

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Sample Name	J6273-FS-D(3)	**Injection Vial**	31
Sample ID	NAWC-050318-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T20:16:14	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.92	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.175	0.193	ü
NMeFOSAA_1	570.0 / 419.0	N/A	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	NMeFOSAA	N/A	0.649	ü
NEtFOSAA_1	584.0 / 419.0	N/A	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.069	ü
d5-EtFOSAA	589.0 / 419.0	N/A				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.265	0.283	ü

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Summary Internal Standard Report

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Sample Name	CQ870PB-FS(0)	**Injection Vial**	12
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:16:36	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.54	13C4-PFOS	503.0 / 80.0	155430.77	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	155430.77	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFHpA_2	363.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	155430.77	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	155430.77	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFOA_2	413.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	155430.77	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	155430.77	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFDoA_2	613.0 / 319.0	3.93	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFTrDA_2	663.0 / 169.0	4.17	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFTeDA_1	713.0 / 669.0	4.39	13C2-PFOA	415.0 / 370.0	55526.05	100.00
PFTeDA_2	713.0 / 169.0	4.37	13C2-PFOA	415.0 / 370.0	55526.05	100.00
NMeFOSAA_1	570.0 / 419.0	3.45	d3-MeFOSAA	573.0 / 419.0	24513.53	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	24513.53	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	24513.53	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24513.53	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	55526.05	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	55526.05	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	24513.53	400.00

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Summary Internal Standard Report

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Sample Name	CQ871LCS-FS(0)	**Injection Vial**	13
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:25:31	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	146577.61	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	146577.61	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	146577.61	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	146577.61	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFOS_1	499.0 / 80.0	2.95	13C4-PFOS	503.0 / 80.0	146577.61	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	146577.61	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFUnA_1	563.0 / 519.0	3.63	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFUnA_2	563.0 / 269.0	3.63	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFDoA_2	613.0 / 319.0	3.91	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFTrDA_2	663.0 / 169.0	4.17	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFTeDA_1	713.0 / 669.0	4.39	13C2-PFOA	415.0 / 370.0	55354.18	100.00
PFTeDA_2	713.0 / 169.0	4.39	13C2-PFOA	415.0 / 370.0	55354.18	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	23938.40	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	23938.40	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	23938.40	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	23938.40	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	55354.18	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	55354.18	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	23938.40	400.00

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Summary Internal Standard Report

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Sample Name	J6258-FS(0)	**Injection Vial**	14
Sample ID	WGNA-052918-RW-3124	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:34:27	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHpA_2	363.0 / 169.0	2.19	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFOS_1	499.0 / 80.0	2.93	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTrDA_2	663.0 / 169.0	4.16	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTeDA_1	713.0 / 669.0	4.39	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTeDA_2	713.0 / 169.0	4.39	13C2-PFOA	415.0 / 370.0	54433.08	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
NMeFOSAA_2	570.0 / 512.0	3.47	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	54433.08	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	54433.08	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00

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Sample Name	J6260-FS(0)	**Injection Vial**	15
Sample ID	WGNA-052918-RW-3493	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:43:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	161208.59	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	161208.59	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFHpA_2	363.0 / 169.0	2.17	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	161208.59	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	161208.59	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFOA_2	413.0 / 169.0	2.55	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFOS_1	499.0 / 80.0	2.91	13C4-PFOS	503.0 / 80.0	161208.59	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	161208.59	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFDoA_2	613.0 / 319.0	3.94	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFTrDA_2	663.0 / 169.0	4.17	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	52441.71	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	52441.71	100.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	25292.77	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	25292.77	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	25292.77	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	25292.77	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	52441.71	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	52441.71	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	25292.77	400.00

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Sample Name	J6262-FS(0)	**Injection Vial**	16
Sample ID	WGNA-052918-RW-3882	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:52:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	183824.83	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	183824.83	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFHpA_2	363.0 / 169.0	2.17	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	183824.83	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	183824.83	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFOA_2	413.0 / 169.0	2.56	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFOS_1	499.0 / 80.0	2.91	13C4-PFOS	503.0 / 80.0	183824.83	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	183824.83	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFDA_2	513.0 / 219.0	3.29	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFTrDA_2	663.0 / 169.0	4.15	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	66948.59	100.00
PFTeDA_2	713.0 / 169.0	4.36	13C2-PFOA	415.0 / 370.0	66948.59	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27867.86	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	27867.86	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	27867.86	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	27867.86	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	66948.59	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	66948.59	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	27867.86	400.00

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Summary Internal Standard Report

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Sample Name	J6264-FS(0)	**Injection Vial**	17
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:01:12	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	122165.48	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	122165.48	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFHpA_2	363.0 / 169.0	2.19	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	122165.48	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	122165.48	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFOS_1	499.0 / 80.0	2.92	13C4-PFOS	503.0 / 80.0	122165.48	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	122165.48	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	42085.38	100.00
PFTeDA_2	713.0 / 169.0	4.35	13C2-PFOA	415.0 / 370.0	42085.38	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	16633.31	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	16633.31	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	16633.31	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	16633.31	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	42085.38	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	42085.38	100.00
d5-EtFOSAA	589.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	16633.31	400.00

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Summary Internal Standard Report

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Sample Name	J6266-FS(0)	**Injection Vial**	18
Sample ID	NAWC-052918-RW-161	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:10:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	129333.17	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	129333.17	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	129333.17	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	129333.17	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFOS_1	499.0 / 80.0	2.92	13C4-PFOS	503.0 / 80.0	129333.17	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	129333.17	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFDoA_1	613.0 / 569.0	N/A	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFTrDA_2	663.0 / 169.0	4.18	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFTeDA_1	713.0 / 669.0	4.39	13C2-PFOA	415.0 / 370.0	46988.17	100.00
PFTeDA_2	713.0 / 169.0	4.38	13C2-PFOA	415.0 / 370.0	46988.17	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19968.15	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	19968.15	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19968.15	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	19968.15	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	46988.17	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	46988.17	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	19968.15	400.00

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Summary Internal Standard Report

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Sample Name	J6270-FS(0)	**Injection Vial**	19
Sample ID	WGNA-053018-RW-3876	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:19:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	157613.34	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	157613.34	287.00
PFHxA_1	313.0 / 269.0	1.81	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFHpA_2	363.0 / 169.0	2.12	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	157613.34	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	157613.34	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFOA_2	413.0 / 169.0	2.53	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFNA_1	463.0 / 419.0	2.94	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFOS_1	499.0 / 80.0	2.87	13C4-PFOS	503.0 / 80.0	157613.34	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	157613.34	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFTrDA_2	663.0 / 169.0	4.16	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	53326.49	100.00
PFTeDA_2	713.0 / 169.0	4.40	13C2-PFOA	415.0 / 370.0	53326.49	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	23622.47	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	23622.47	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	23622.47	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	23622.47	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	53326.49	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	53326.49	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	23622.47	400.00

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Summary Internal Standard Report

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Sample Name	J6272-FS(0)	**Injection Vial**	21
Sample ID	WGNA-053018-DUP-37	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:36:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	134976.88	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	134976.88	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFHpA_2	363.0 / 169.0	2.13	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	134976.88	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	134976.88	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFOA_2	413.0 / 169.0	2.53	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFNA_1	463.0 / 419.0	2.94	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFOS_1	499.0 / 80.0	2.87	13C4-PFOS	503.0 / 80.0	134976.88	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	134976.88	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFDoA_1	613.0 / 569.0	3.90	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFTrDA_2	663.0 / 169.0	4.14	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	46385.06	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	46385.06	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20387.57	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	20387.57	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20387.57	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	20387.57	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	46385.06	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	46385.06	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	20387.57	400.00

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Summary Internal Standard Report

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Sample Name	J6273-FS(0)	**Injection Vial**	22
Sample ID	NAWC-053018-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:45:47	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	135894.71	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	135894.71	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	135894.71	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	135894.71	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	135894.71	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	135894.71	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	52187.27	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	52187.27	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	23179.84	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	23179.84	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	23179.84	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	23179.84	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	52187.27	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	52187.27	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	23179.84	400.00

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Summary Internal Standard Report

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Sample Name	J6275-FS(0)	**Injection Vial**	23
Sample ID	WGNA-053018-RW-3933	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:54:42	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	166359.15	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	166359.15	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFHpA_2	363.0 / 169.0	2.17	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	166359.15	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	166359.15	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFOA_2	413.0 / 169.0	2.56	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFOS_1	499.0 / 80.0	2.92	13C4-PFOS	503.0 / 80.0	166359.15	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	166359.15	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFDoA_1	613.0 / 569.0	3.89	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFDoA_2	613.0 / 319.0	3.90	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	55544.96	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	55544.96	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24444.25	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	24444.25	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24444.25	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24444.25	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	55544.96	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	55544.96	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	24444.25	400.00

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Summary Internal Standard Report

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Sample Name	J6277-FS(0)	**Injection Vial**	24
Sample ID	NAWC-053018-RW-164	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:03:37	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	139897.42	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	139897.42	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	139897.42	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	139897.42	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFOA_2	413.0 / 169.0	2.55	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFOS_1	499.0 / 80.0	2.88	13C4-PFOS	503.0 / 80.0	139897.42	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	139897.42	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFDA_2	513.0 / 219.0	3.29	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFDoA_1	613.0 / 569.0	3.90	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFTeDA_1	713.0 / 669.0	4.37	13C2-PFOA	415.0 / 370.0	48439.85	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	48439.85	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20180.76	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	20180.76	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	20180.76	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	20180.76	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	48439.85	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	48439.85	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	20180.76	400.00

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Summary Internal Standard Report

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Sample Name	J6279-FS(0)	**Injection Vial**	25
Sample ID	NAWC-053018-RW-292	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:12:32	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	155414.60	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	155414.60	287.00
PFHxA_1	313.0 / 269.0	1.81	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	155414.60	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	155414.60	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFOA_2	413.0 / 169.0	2.56	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFOS_1	499.0 / 80.0	2.91	13C4-PFOS	503.0 / 80.0	155414.60	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	155414.60	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFTeDA_1	713.0 / 669.0	4.36	13C2-PFOA	415.0 / 370.0	53372.20	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	53372.20	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	22574.43	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	22574.43	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	22574.43	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	22574.43	400.00
13C2-PFHxA	315.0 / 270.0	1.80	13C2-PFOA	415.0 / 370.0	53372.20	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	53372.20	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	22574.43	400.00

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Summary Internal Standard Report

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Sample Name	J6281-FS(0)	**Injection Vial**	26
Sample ID	NAWC-053018-RW-271	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:21:26	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	152042.85	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	152042.85	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFHpA_2	363.0 / 169.0	2.16	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	152042.85	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	152042.85	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFOA_2	413.0 / 169.0	2.54	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFOS_1	499.0 / 80.0	2.88	13C4-PFOS	503.0 / 80.0	152042.85	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	152042.85	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFDoA_1	613.0 / 569.0	3.90	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFTeDA_1	713.0 / 669.0	4.37	13C2-PFOA	415.0 / 370.0	52163.07	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	52163.07	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	23039.11	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	23039.11	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	23039.11	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	23039.11	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	52163.07	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	52163.07	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	23039.11	400.00

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Sample Name	J6283-FS(0)	**Injection Vial**	27
Sample ID	NAWC-053018-RW-270	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:30:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	144534.07	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	144534.07	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFHxA_2	313.0 / 119.0	1.82	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFHpA_2	363.0 / 169.0	2.17	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	144534.07	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	144534.07	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFOA_2	413.0 / 169.0	2.56	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFOS_1	499.0 / 80.0	2.90	13C4-PFOS	503.0 / 80.0	144534.07	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	144534.07	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFTrDA_1	663.0 / 619.0	4.14	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFTeDA_1	713.0 / 669.0	4.36	13C2-PFOA	415.0 / 370.0	50529.43	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	50529.43	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21960.54	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	21960.54	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21960.54	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	21960.54	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	50529.43	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	50529.43	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	21960.54	400.00

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Summary Internal Standard Report

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Sample Name	J6285-FS(0)	**Injection Vial**	28
Sample ID	NAWC-053018-RW-196	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:39:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	151326.78	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	151326.78	287.00
PFHxA_1	313.0 / 269.0	1.81	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	151326.78	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	151326.78	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFOA_2	413.0 / 169.0	2.55	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFOS_1	499.0 / 80.0	2.90	13C4-PFOS	503.0 / 80.0	151326.78	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	151326.78	287.00
PFDA_1	513.0 / 469.0	3.29	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFDA_2	513.0 / 219.0	3.29	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFDoA_1	613.0 / 569.0	3.90	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFTrDA_1	663.0 / 619.0	4.15	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFTeDA_1	713.0 / 669.0	4.36	13C2-PFOA	415.0 / 370.0	51863.51	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	51863.51	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21907.00	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	21907.00	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	21907.00	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	21907.00	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	51863.51	100.00
13C2-PFDA	515.0 / 470.0	3.28	13C2-PFOA	415.0 / 370.0	51863.51	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	21907.00	400.00

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Summary Internal Standard Report

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Sample Name	J6287-FS(0)	**Injection Vial**	29
Sample ID	NAWC-053018-RW-172	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:48:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	161065.81	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	161065.81	287.00
PFHxA_1	313.0 / 269.0	1.81	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFHpA_1	363.0 / 319.0	2.18	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFHpA_2	363.0 / 169.0	2.16	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	161065.81	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	161065.81	287.00
PFOA_1	413.0 / 369.0	2.56	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFOA_2	413.0 / 169.0	2.54	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFNA_1	463.0 / 419.0	2.94	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFOS_1	499.0 / 80.0	2.88	13C4-PFOS	503.0 / 80.0	161065.81	287.00
PFOS_2	499.0 / 99.0	2.93	13C4-PFOS	503.0 / 80.0	161065.81	287.00
PFDA_1	513.0 / 469.0	3.29	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFDA_2	513.0 / 219.0	3.27	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFDoA_1	613.0 / 569.0	3.89	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFDoA_2	613.0 / 319.0	N/A	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFTrDA_2	663.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFTeDA_1	713.0 / 669.0	4.36	13C2-PFOA	415.0 / 370.0	54098.71	100.00
PFTeDA_2	713.0 / 169.0	N/A	13C2-PFOA	415.0 / 370.0	54098.71	100.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24066.54	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	24066.54	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	24066.54	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24066.54	400.00
13C2-PFHxA	315.0 / 270.0	1.80	13C2-PFOA	415.0 / 370.0	54098.71	100.00
13C2-PFDA	515.0 / 470.0	3.28	13C2-PFOA	415.0 / 370.0	54098.71	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	24066.54	400.00

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Summary Internal Standard Report

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Sample Name	J6264-FS(0)	**Injection Vial**	18
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T19:22:36	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	123093.54	287.00
PFOS_2	499.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	123093.54	287.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19049.25	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	19049.25	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	19049.25	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	19049.25	400.00
d5-EtFOSAA	589.0 / 419.0	3.58	d3-MeFOSAA	573.0 / 419.0	19049.25	400.00
PFHxS_1	399.0 / 80.0	N/A	13C4-PFOS	503.0 / 80.0	123093.54	287.00
PFHxS_2	399.0 / 99.0	N/A	13C4-PFOS	503.0 / 80.0	123093.54	287.00

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Summary Internal Standard Report

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Sample Name	J6273-FS-D(3)	**Injection Vial**	31
Sample ID	NAWC-050318-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T20:16:14	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.92	13C4-PFOS	503.0 / 80.0	128628.34	287.00
PFOS_2	499.0 / 99.0	2.93	13C4-PFOS	503.0 / 80.0	128628.34	287.00
NMeFOSAA_1	570.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	N/A	400.00
NMeFOSAA_2	570.0 / 512.0	N/A	d3-MeFOSAA	573.0 / 419.0	N/A	400.00
NEtFOSAA_1	584.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	N/A	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	N/A	400.00
d5-EtFOSAA	589.0 / 419.0	N/A	d3-MeFOSAA	573.0 / 419.0	N/A	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	128628.34	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	128628.34	287.00

Chromatograms

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Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:35 AM

Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T15:56:17	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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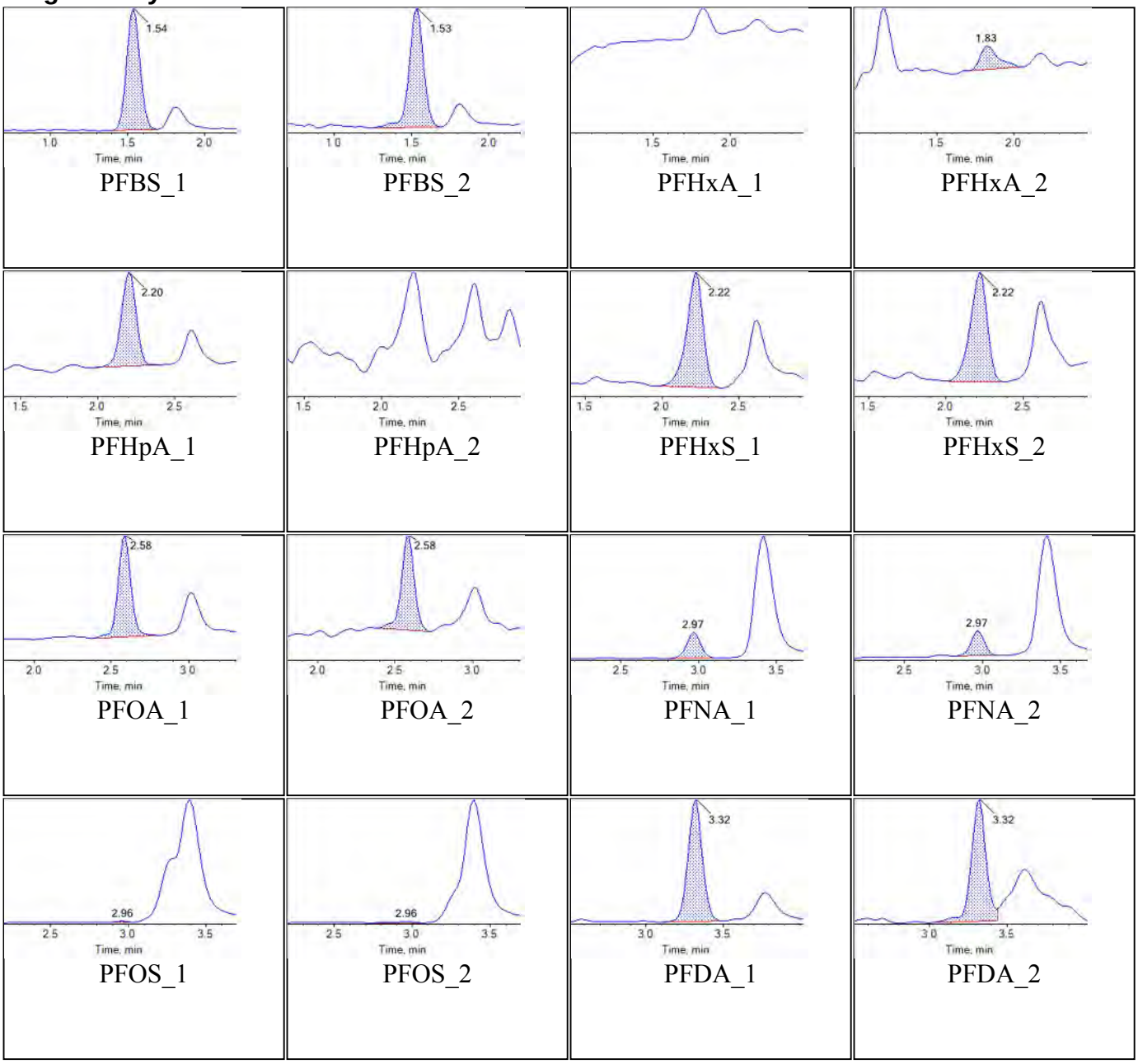

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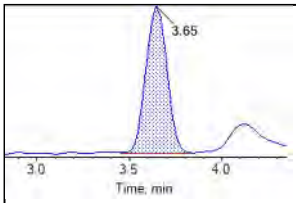
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:35 AM



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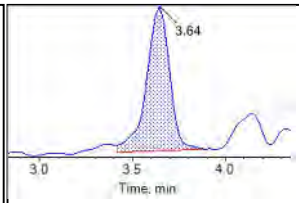

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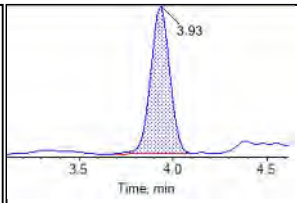

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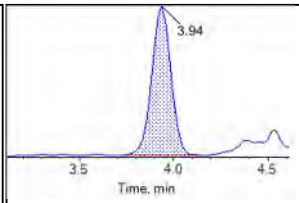

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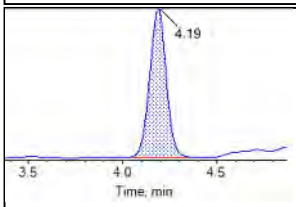

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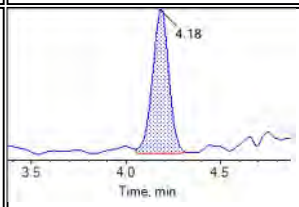

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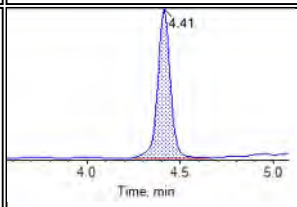

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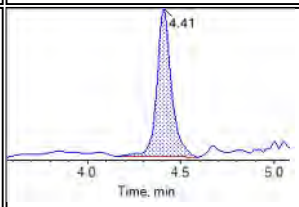

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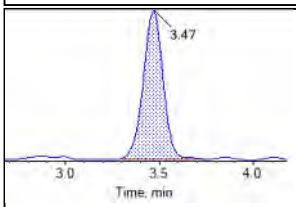

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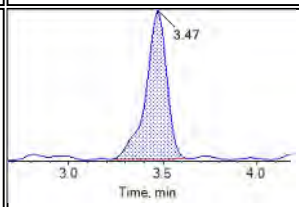

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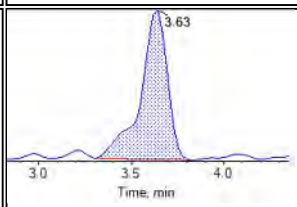

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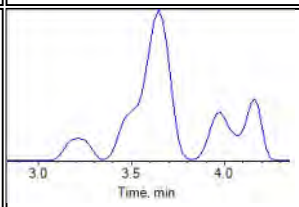

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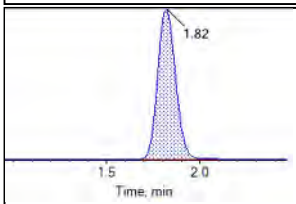

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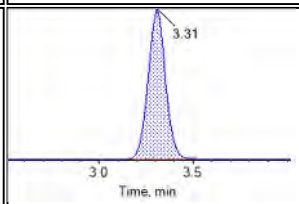

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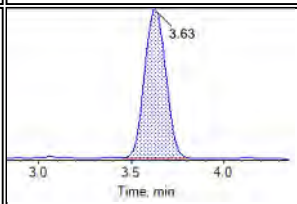

d5-EtFOSAA

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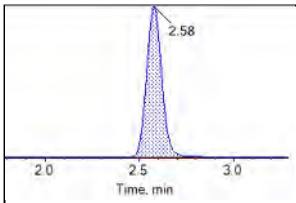

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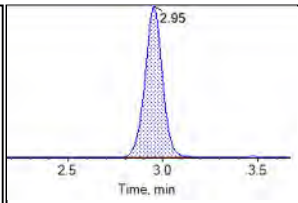

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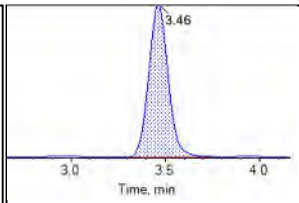

d3-MeFOSAA

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Chromatogram Report

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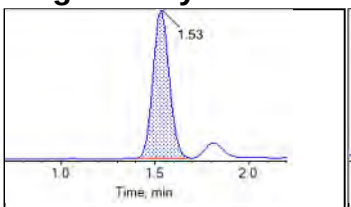
Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:05:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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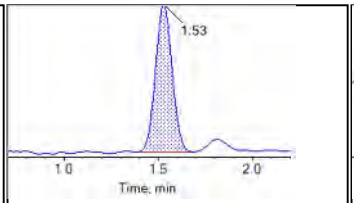

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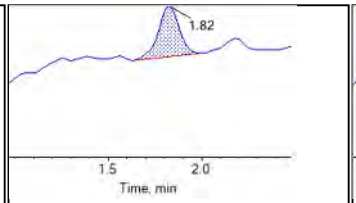

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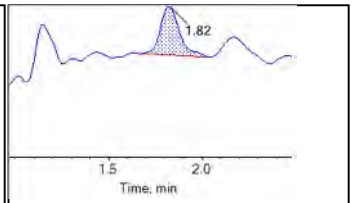

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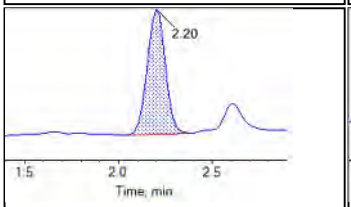

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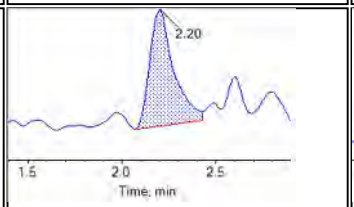

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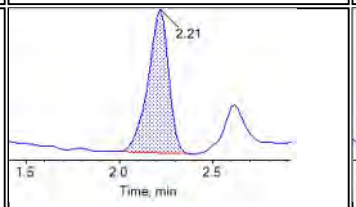

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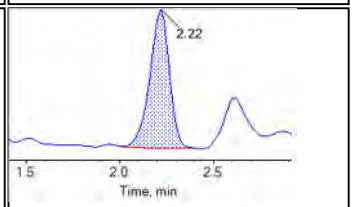

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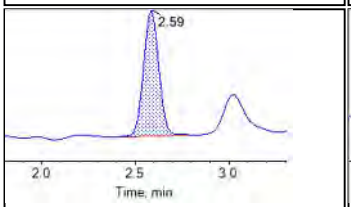

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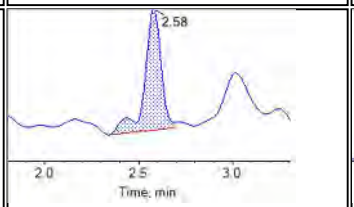

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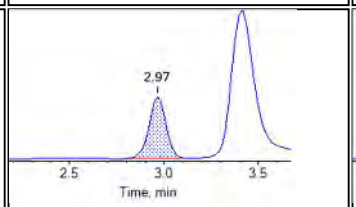

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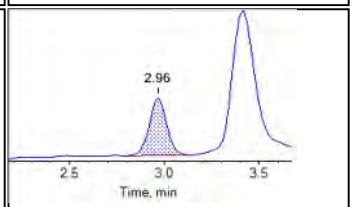

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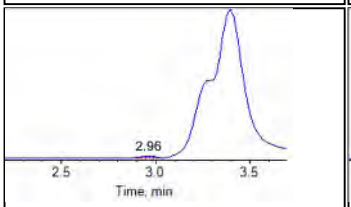

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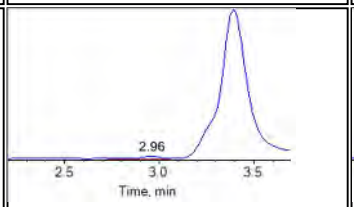

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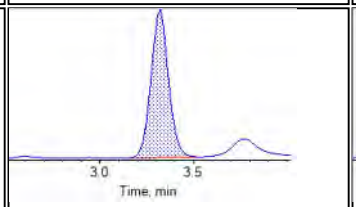

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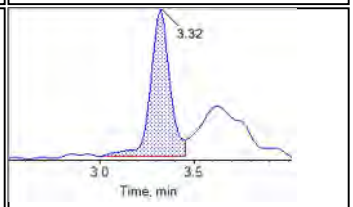

PFDA_2

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Chromatogram Report

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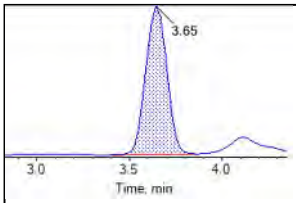

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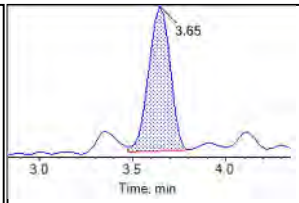

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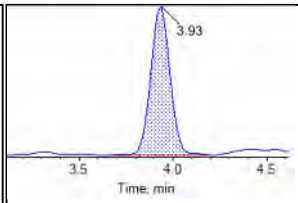

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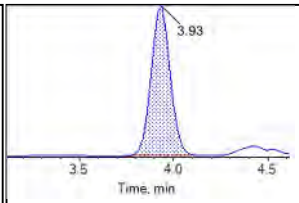

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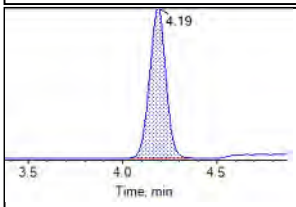

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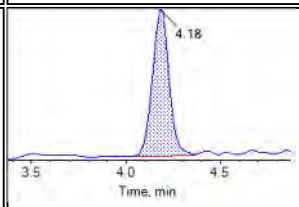

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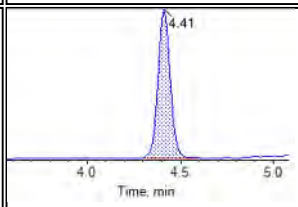

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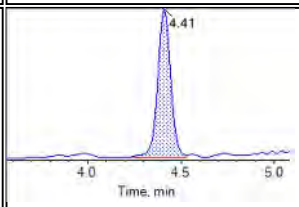

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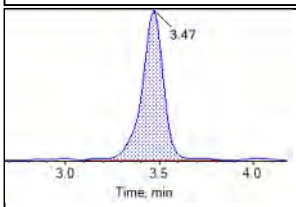

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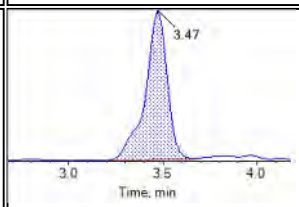

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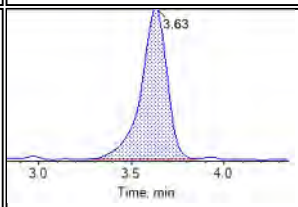

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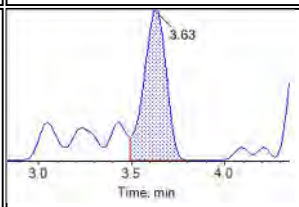

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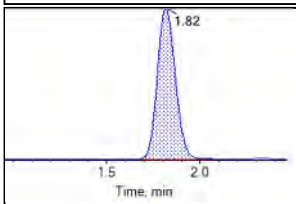
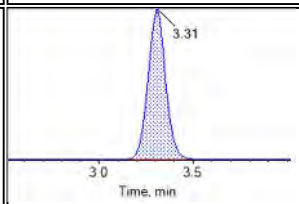
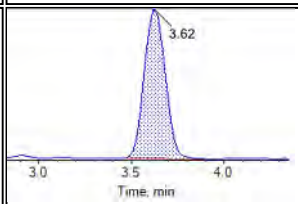


13C2-PFHxA

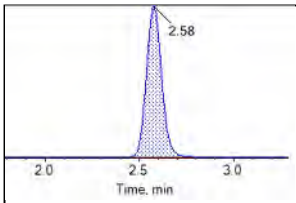


13C2-PFDA

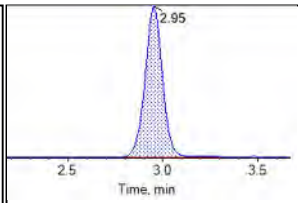


d5-EtFOSAA

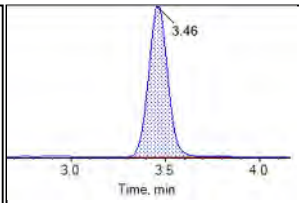
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

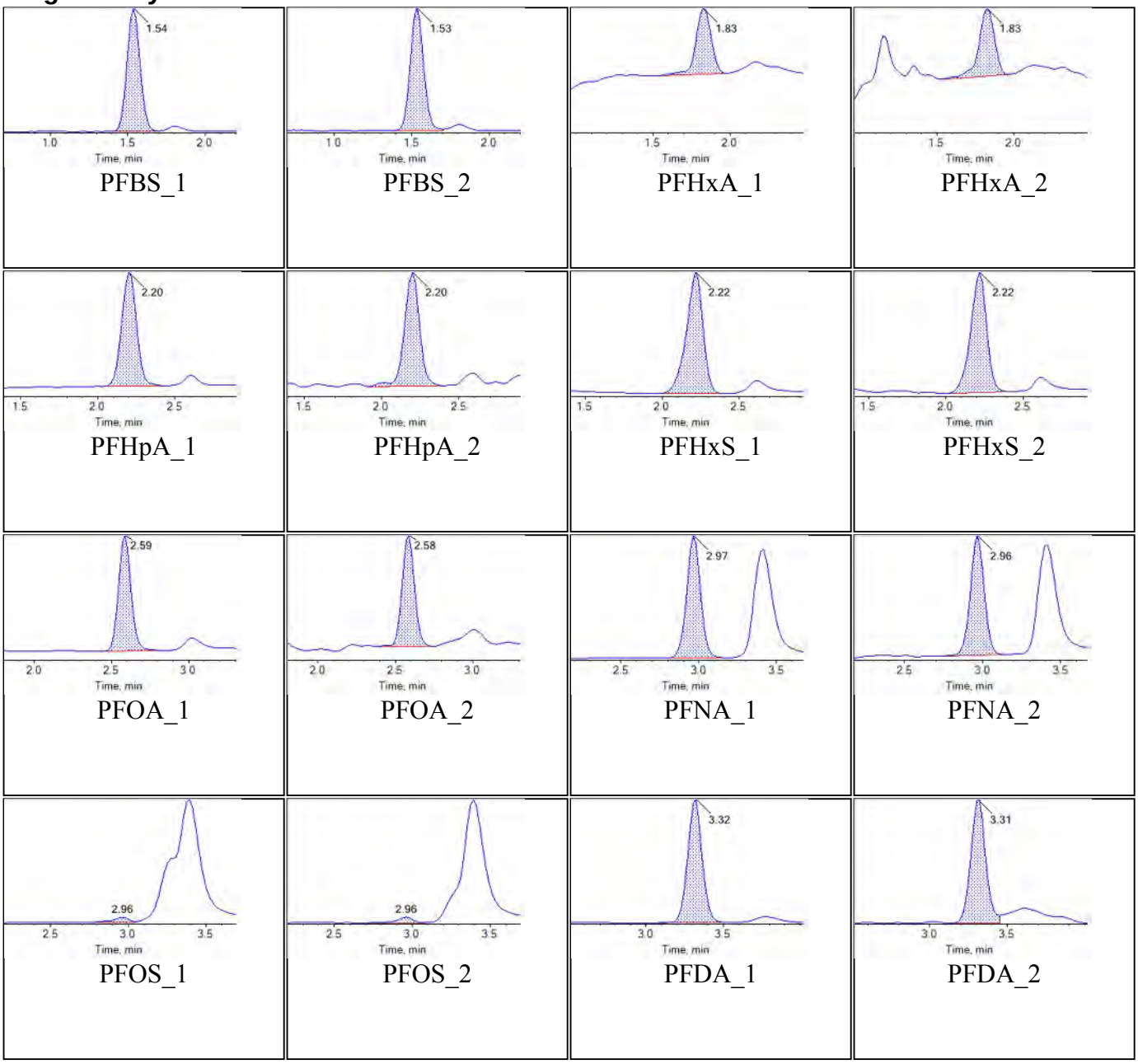
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:42 AM

Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:14:09	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

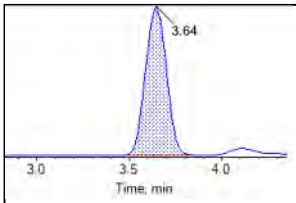
Target Analytes:



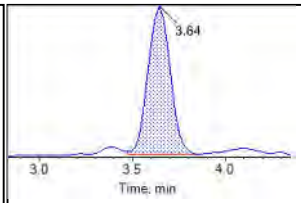
BATTELLE

Chromatogram Report

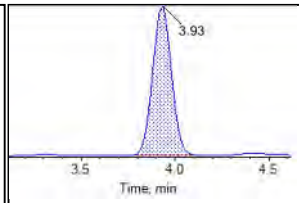
Created with Analyst Reporter
Printed: 15/06/2018 10:46:42 AM



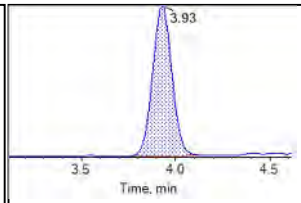
PFUnA_1



PFUnA_2



PFDoA_1



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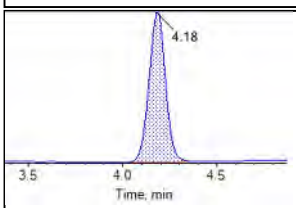
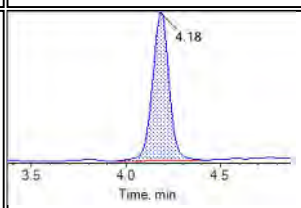
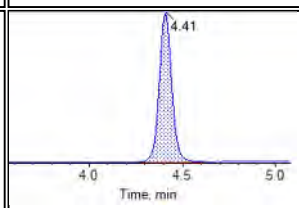


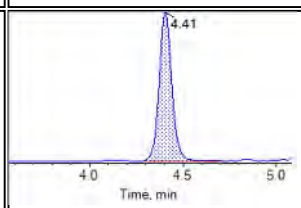
PFTrDA_1



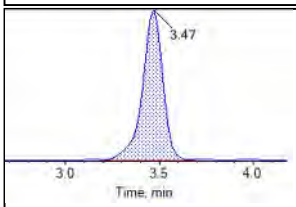
PFTrDA_2



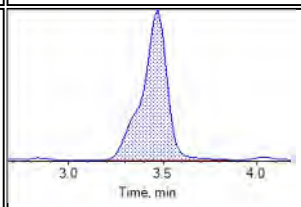
PFTeDA_1



PFTeDA_2



NMeFOSAA_1



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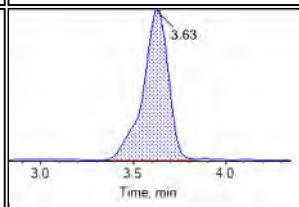
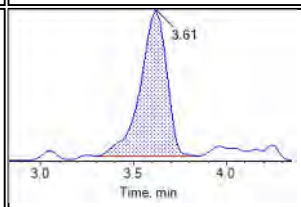
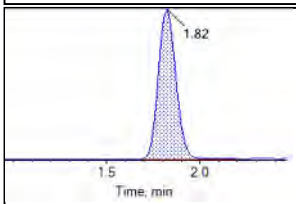


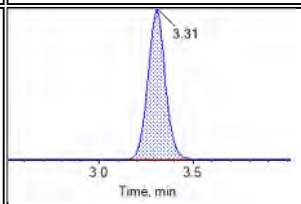
NEtFOSAA_1



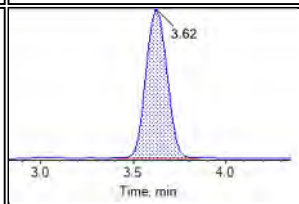
NEtFOSAA_2



13C2-PFHxA

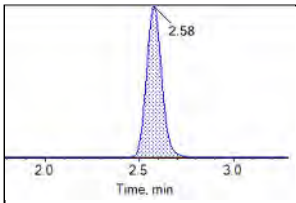


13C2-PFDA

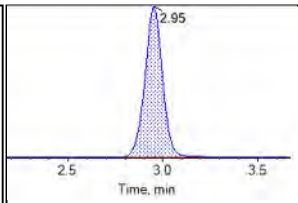


d5-EtFOSAA

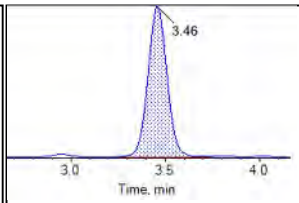
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

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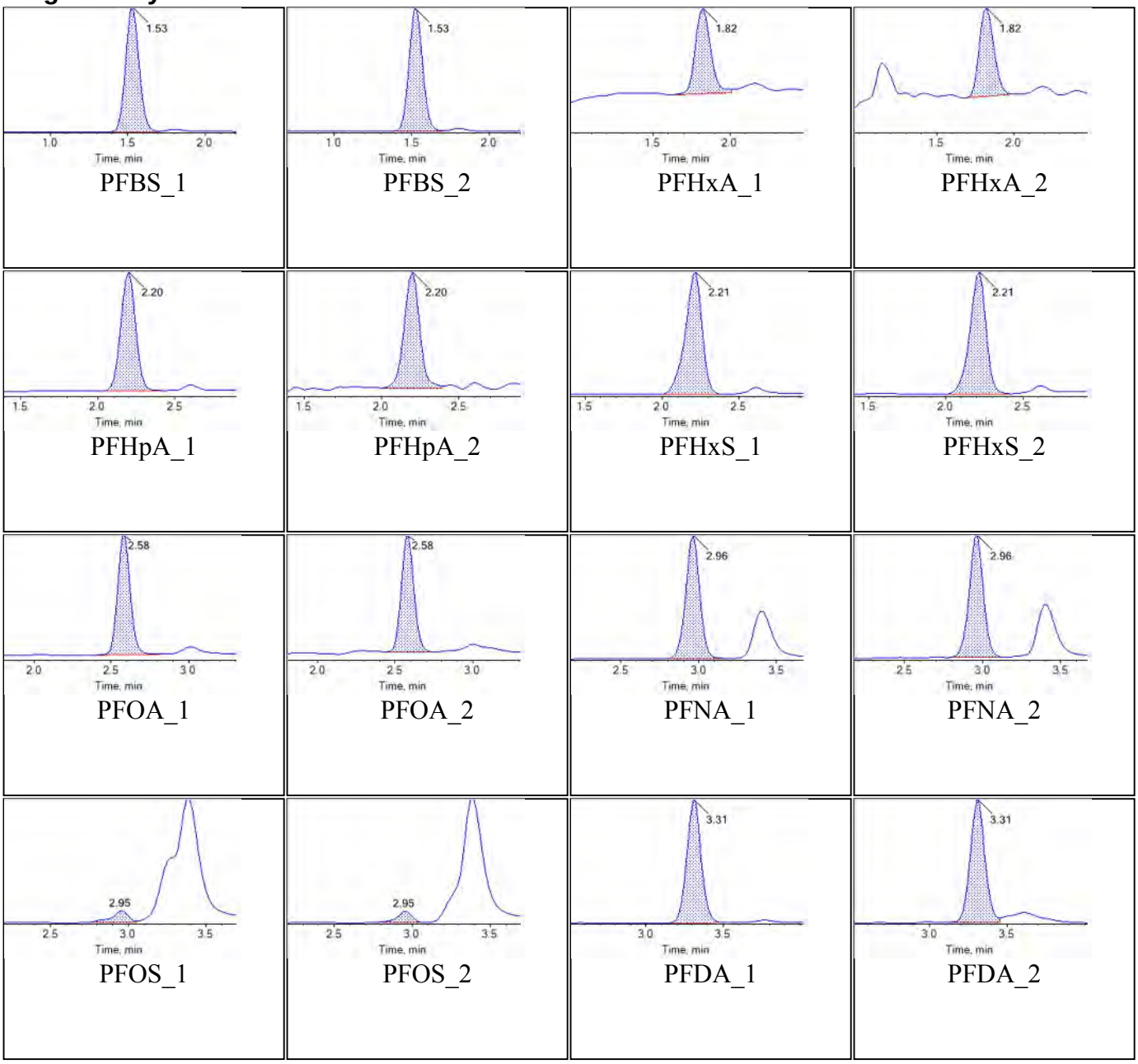
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:45 AM

Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:23:04	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

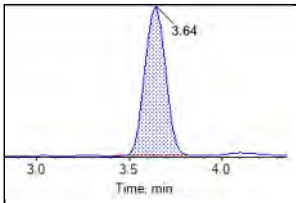
Target Analytes:



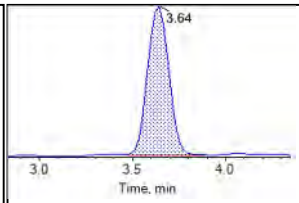
BATTELLE

Chromatogram Report

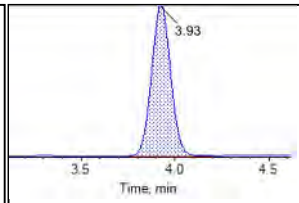
Created with Analyst Reporter
Printed: 15/06/2018 10:46:45 AM



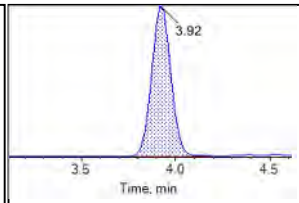
PFUnA_1



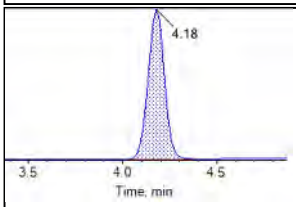
PFUnA_2



PFDoA_1



PFDoA_2



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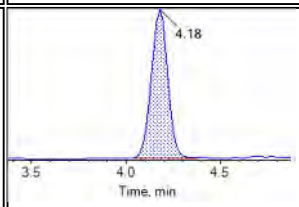
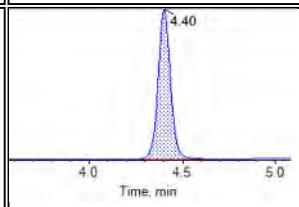
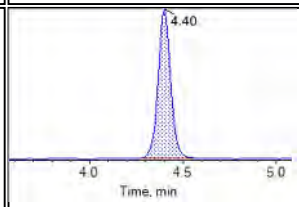


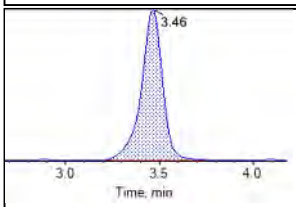
PFTrDA_2



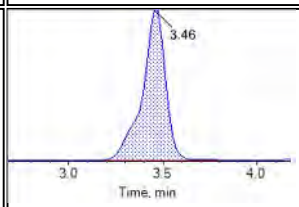
PFTeDA_1



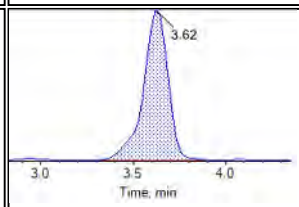
PFTeDA_2



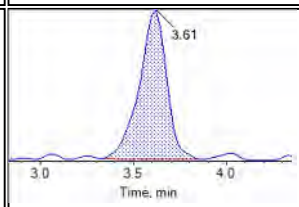
NMeFOSAA_1



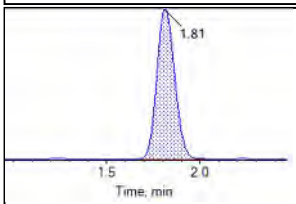
NMeFOSAA_2



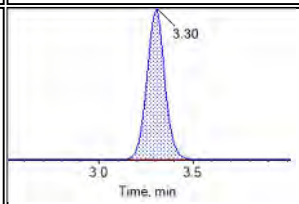
NEtFOSAA_1



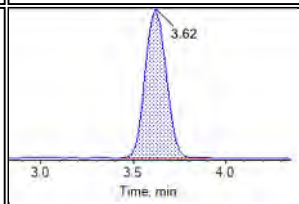
NEtFOSAA_2



13C2-PFHxA

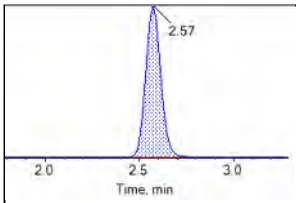


13C2-PFDA

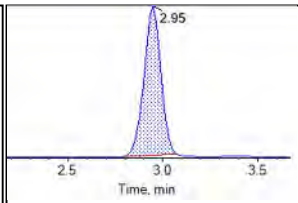


d5-EtFOSAA

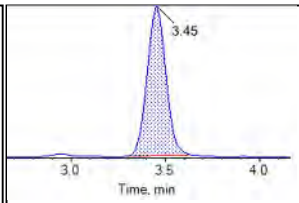
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

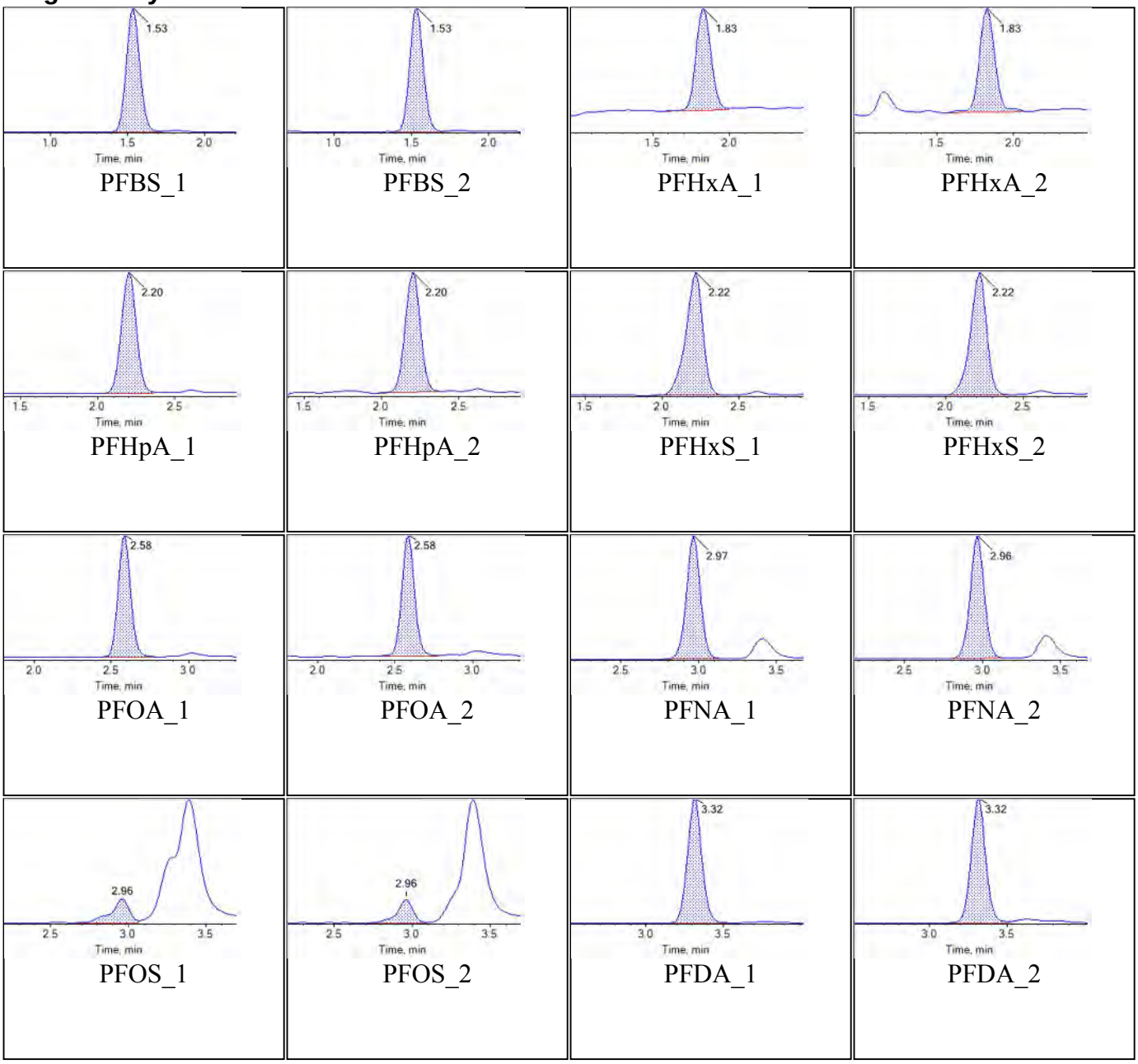
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:48 AM

Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:32:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

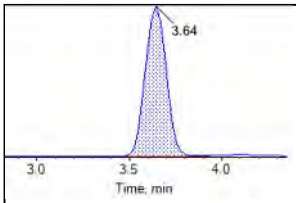
Target Analytes:



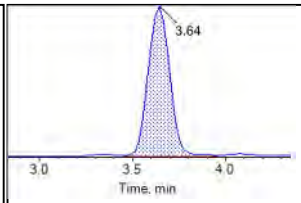
BATTELLE

Chromatogram Report

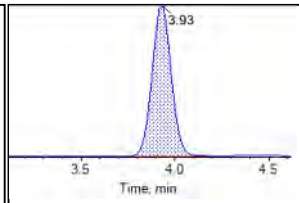
Created with Analyst Reporter
Printed: 15/06/2018 10:46:48 AM



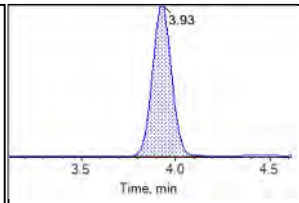
PFUnA_1



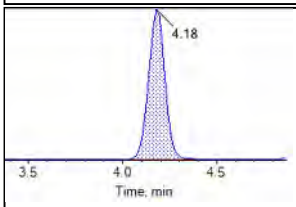
PFUnA_2



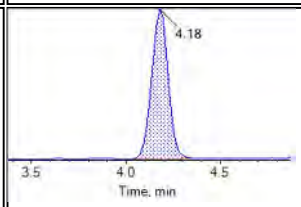
PFDoA_1



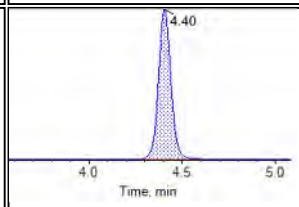
PFDoA_2



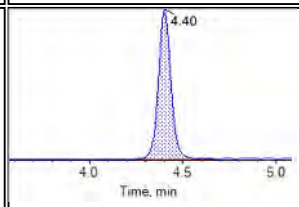
PFTrDA_1



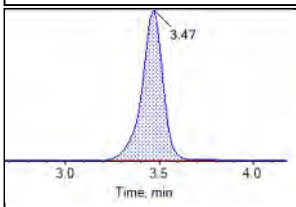
PFTrDA_2



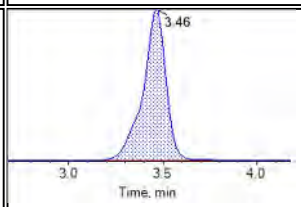
PFTeDA_1



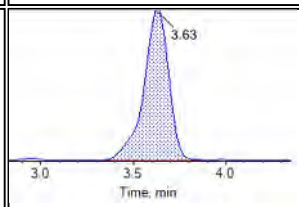
PFTeDA_2



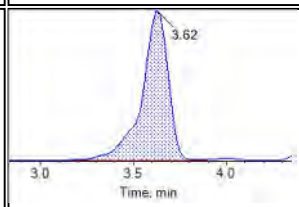
NMeFOSAA_1



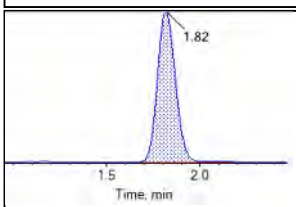
NMeFOSAA_2



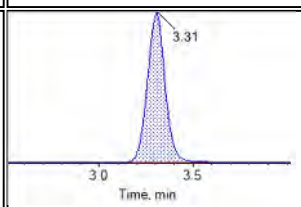
NEtFOSAA_1



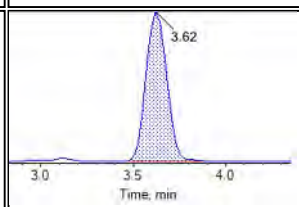
NEtFOSAA_2



13C2-PFHxA

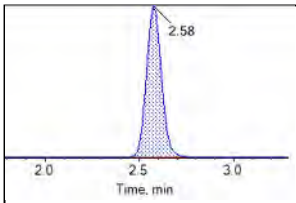


13C2-PFDA

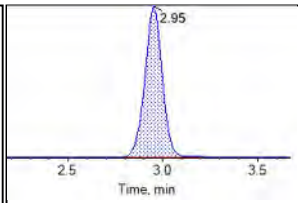


d5-EtFOSAA

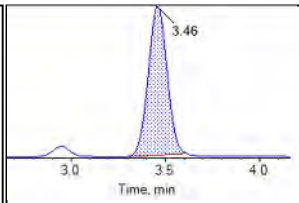
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

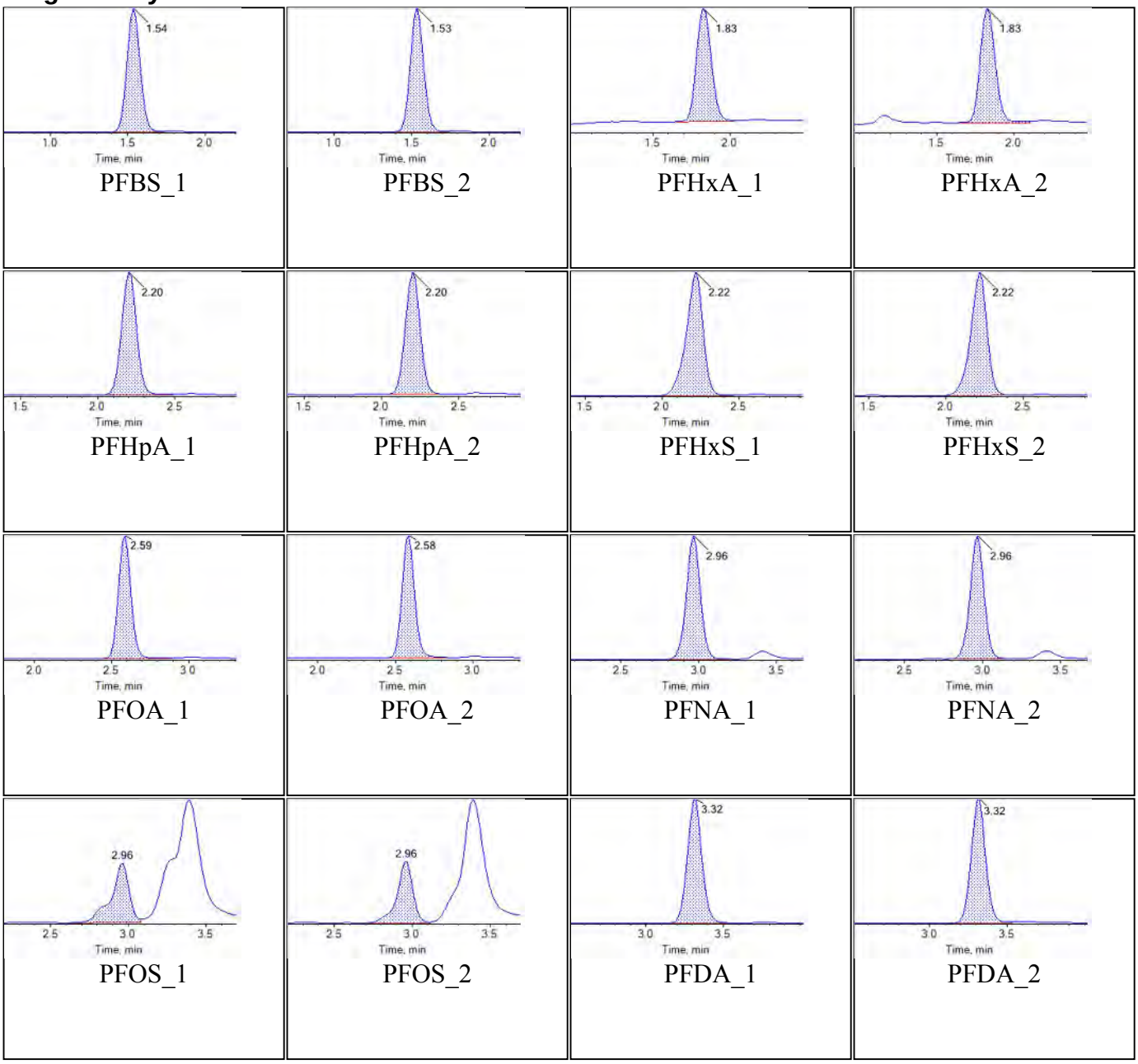
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:51 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:40:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

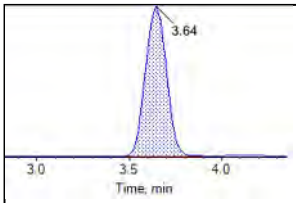
Target Analytes:



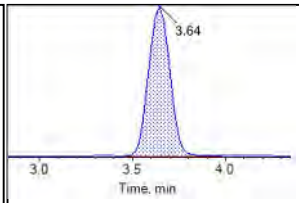
BATTELLE

Chromatogram Report

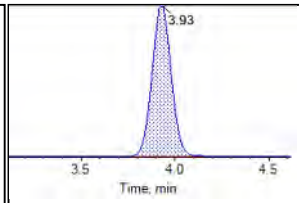
Created with Analyst Reporter
Printed: 15/06/2018 10:46:51 AM



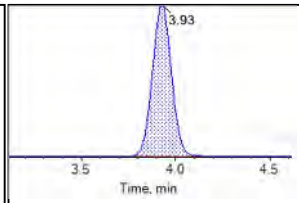
PFUnA_1



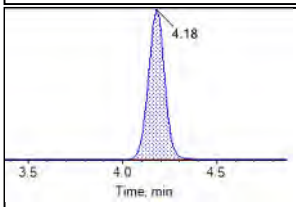
PFUnA_2



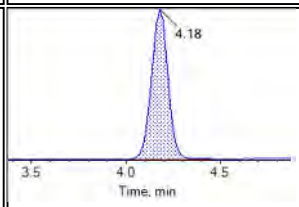
PFDoA_1



PFDoA_2



PFTrDA_1



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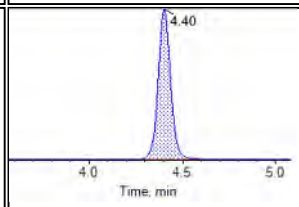

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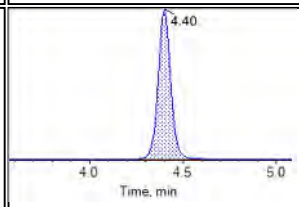

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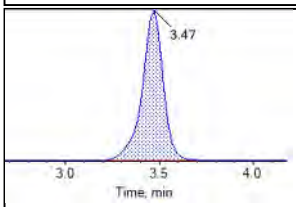
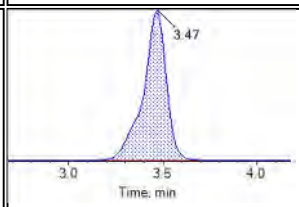


NMeFOSAA_1



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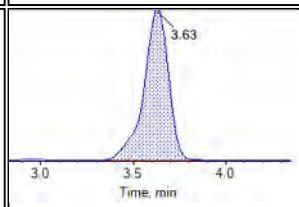
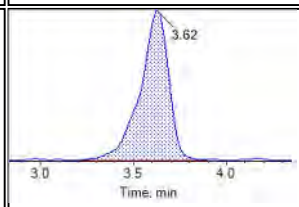
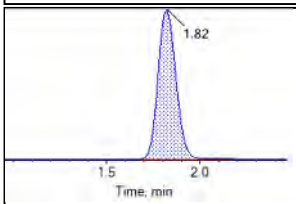


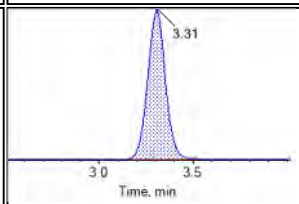
NEtFOSAA_1



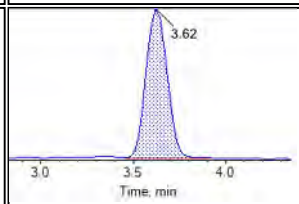
NEtFOSAA_2



13C2-PFHxA

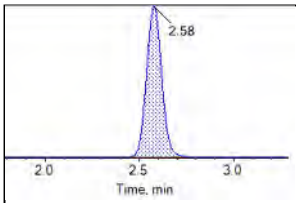


13C2-PFDA

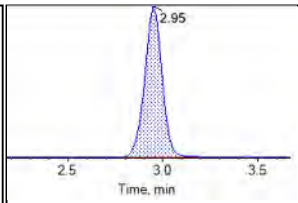


d5-EtFOSAA

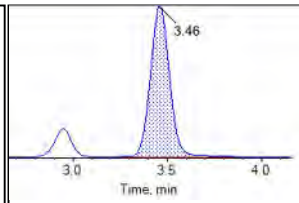
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

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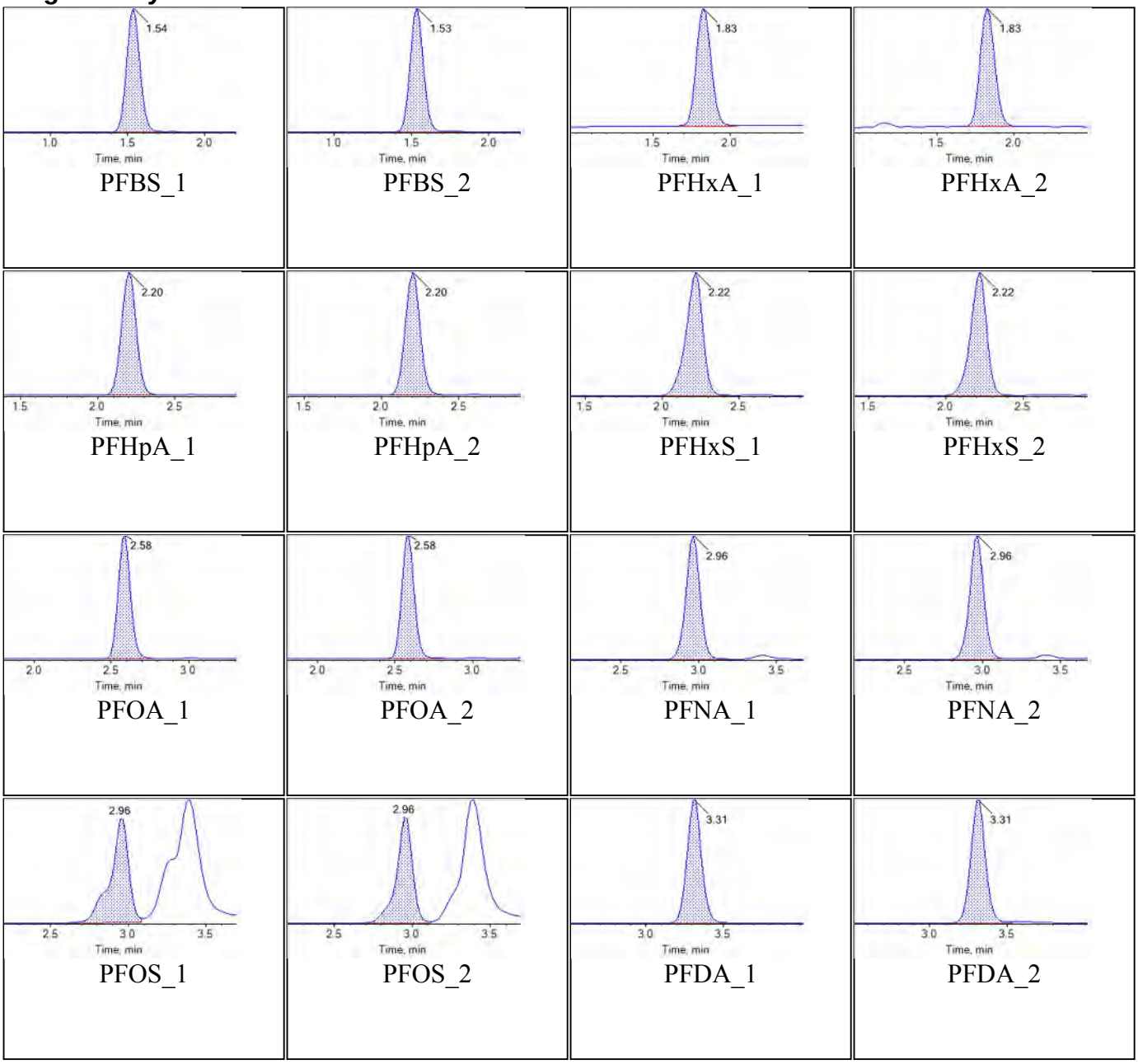
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:55 AM

Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:49:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

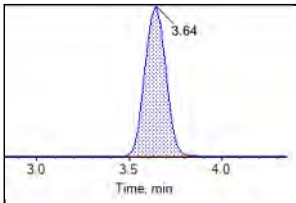
Target Analytes:



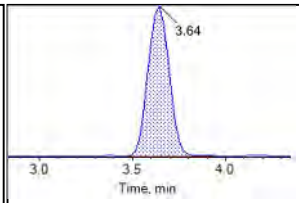
BATTELLE

Chromatogram Report

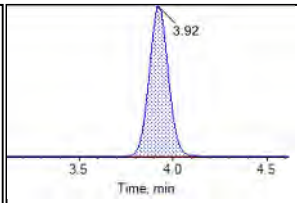
Created with Analyst Reporter
Printed: 15/06/2018 10:46:55 AM



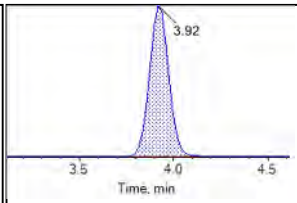
PFUnA_1



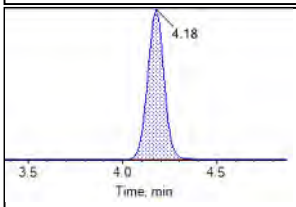
PFUnA_2



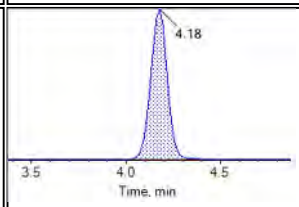
PFDoA_1



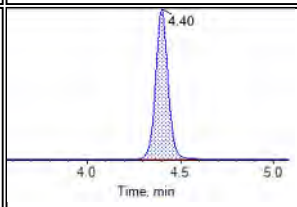
PFDoA_2



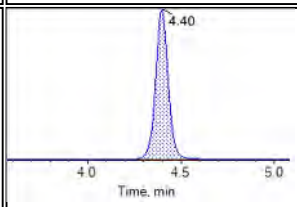
PFTrDA_1



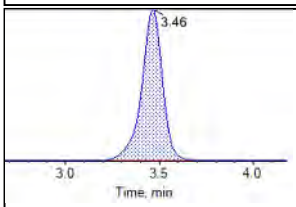
PFTrDA_2



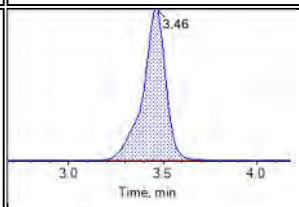
PFTeDA_1



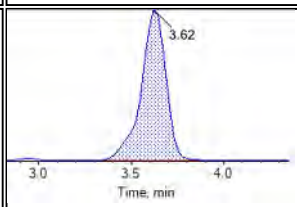
PFTeDA_2



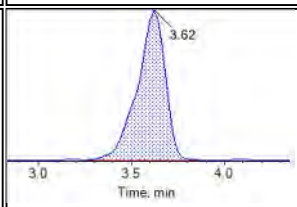
NMeFOSAA_1



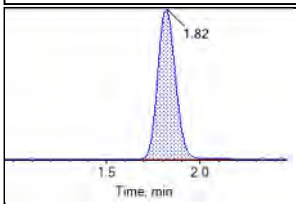
NMeFOSAA_2



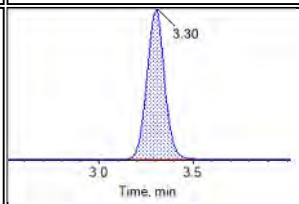
NEtFOSAA_1



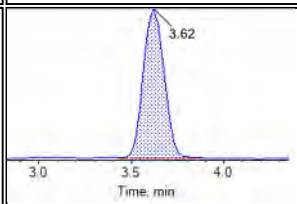
NEtFOSAA_2



13C2-PFHxA

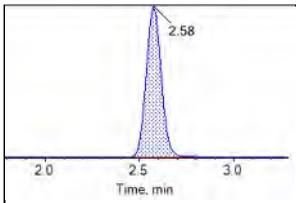


13C2-PFDA

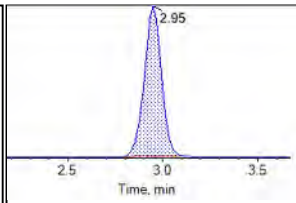


d5-EtFOSAA

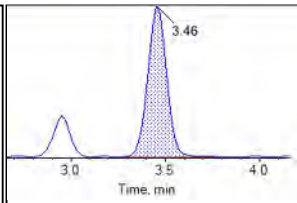
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

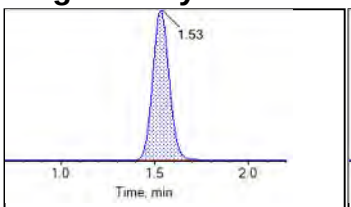
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:46:58 AM

Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:58:44	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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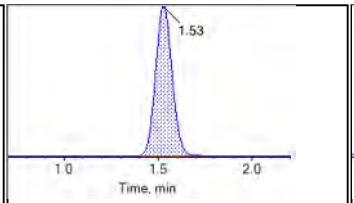

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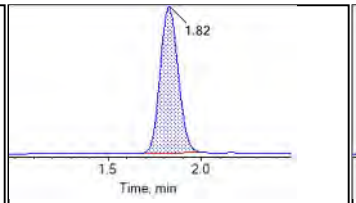

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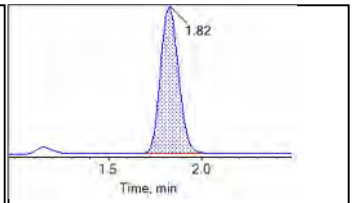

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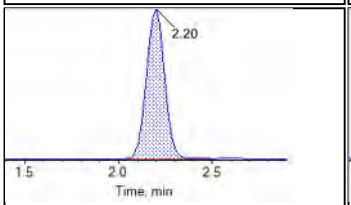

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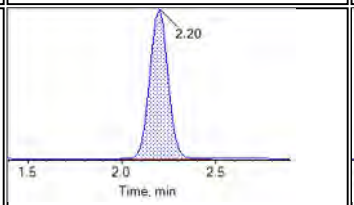

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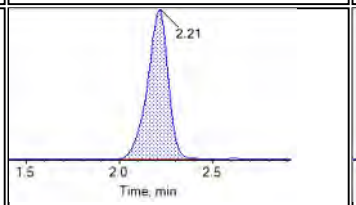

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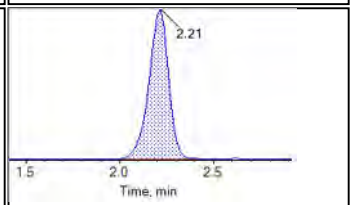

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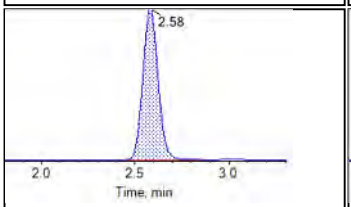

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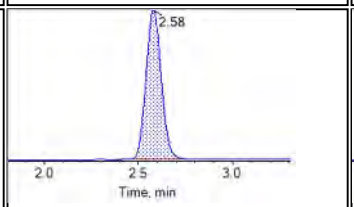

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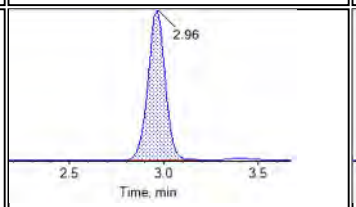

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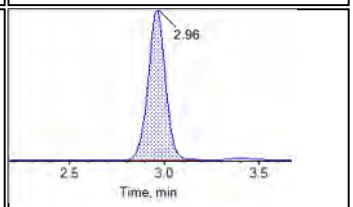

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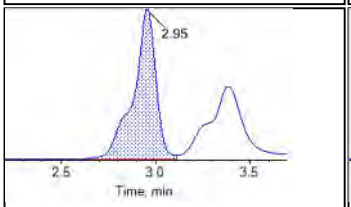

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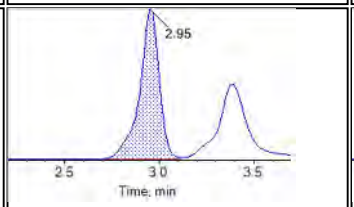

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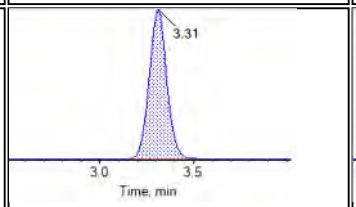

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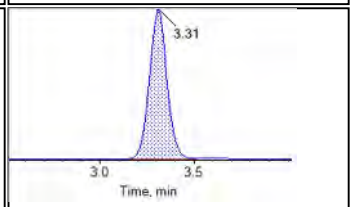

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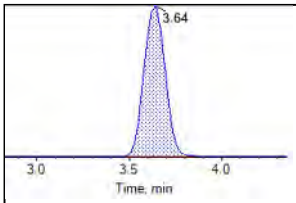

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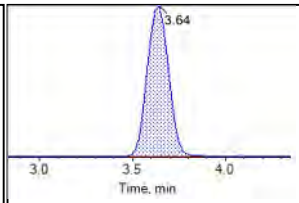

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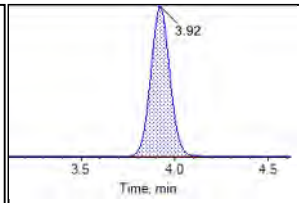

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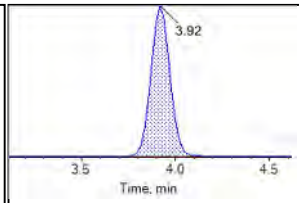

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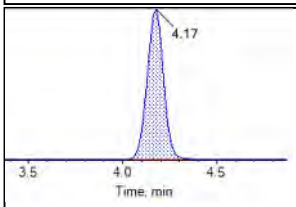

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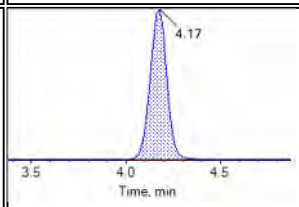

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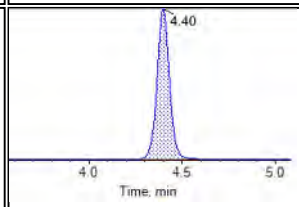

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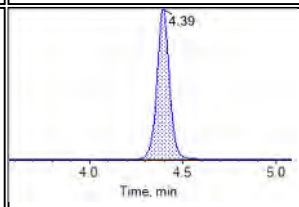

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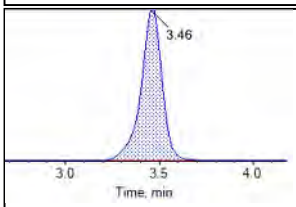

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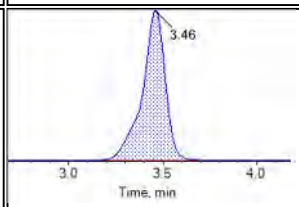

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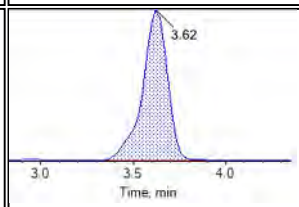

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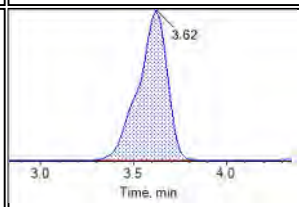

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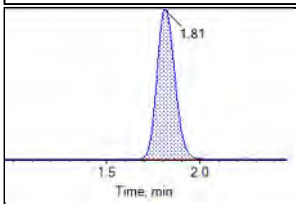

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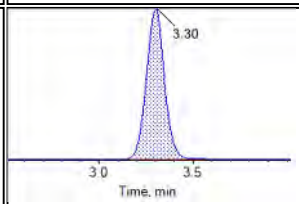

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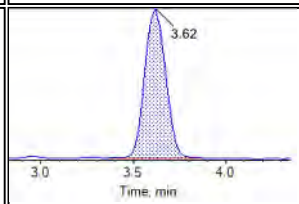
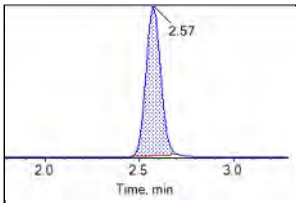


d5-EtFOSAA

Internal Standards:



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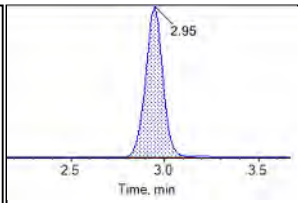

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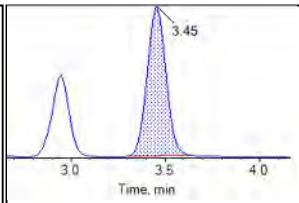

d3-MeFOSAA

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Chromatogram Report

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Printed: 15/06/2018 10:47:01 AM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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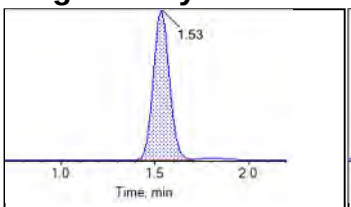

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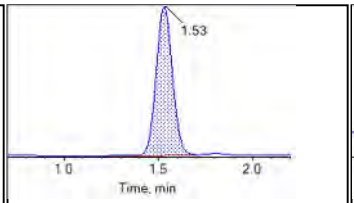

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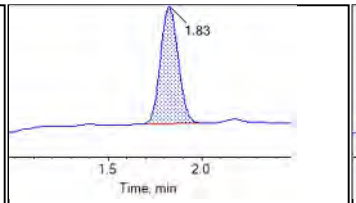

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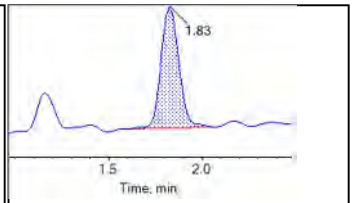

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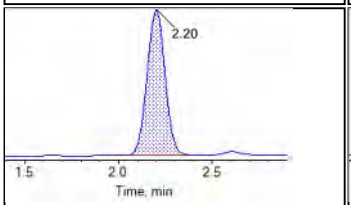

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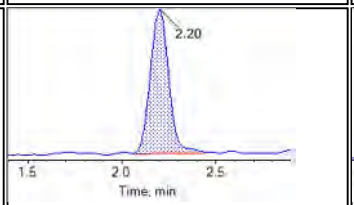

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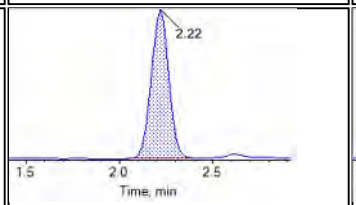

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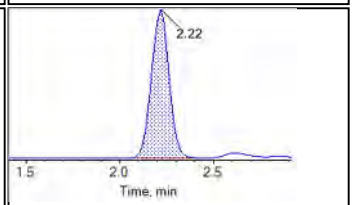

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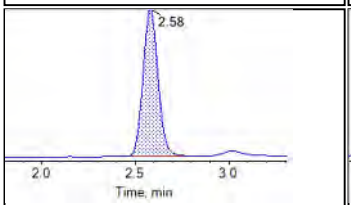

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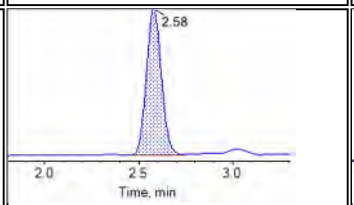

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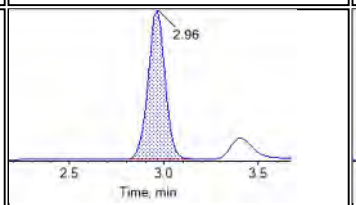

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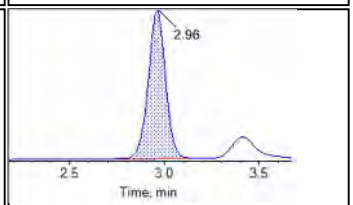

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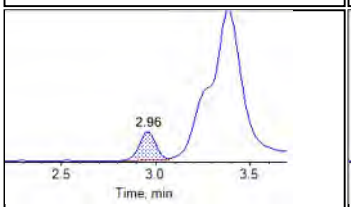

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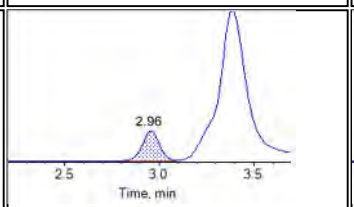

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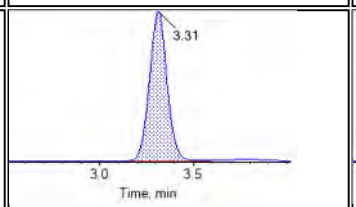

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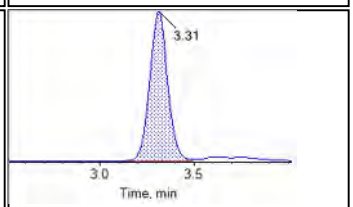

PFDA_2

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Chromatogram Report

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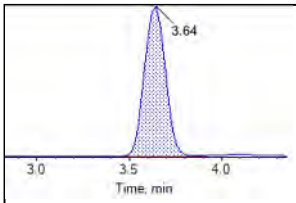

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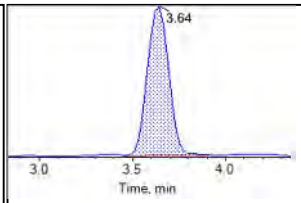

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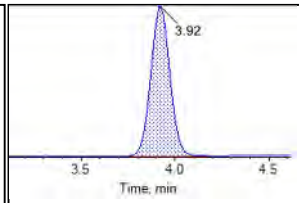
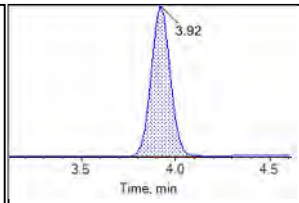


PFDoA_1



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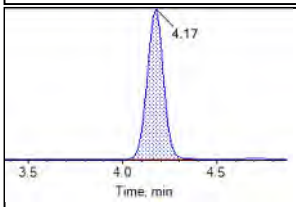

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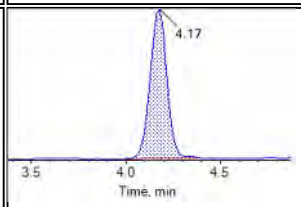

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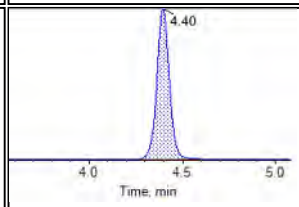

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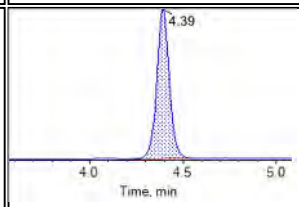

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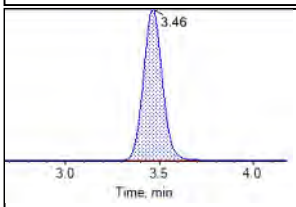

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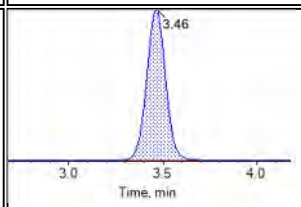

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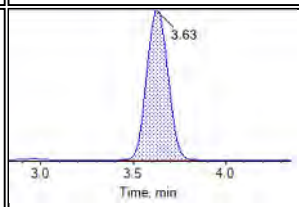

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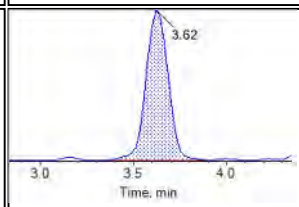

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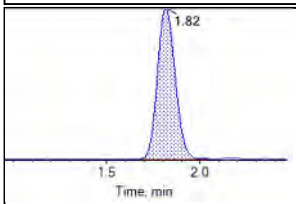
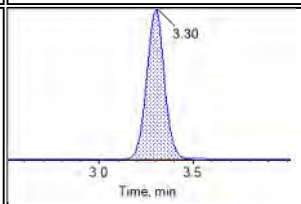
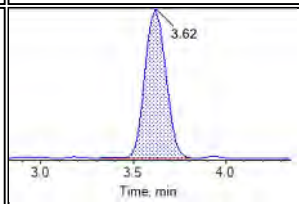


13C2-PFHxA

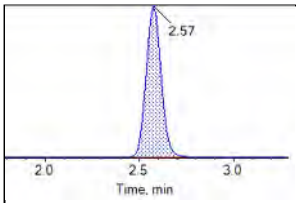


13C2-PFDA



d5-EtFOSAA

Internal Standards:



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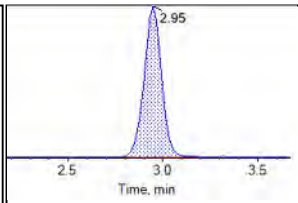

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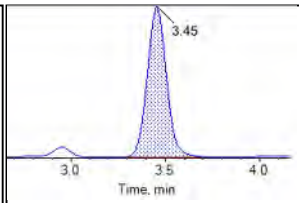

d3-MeFOSAA

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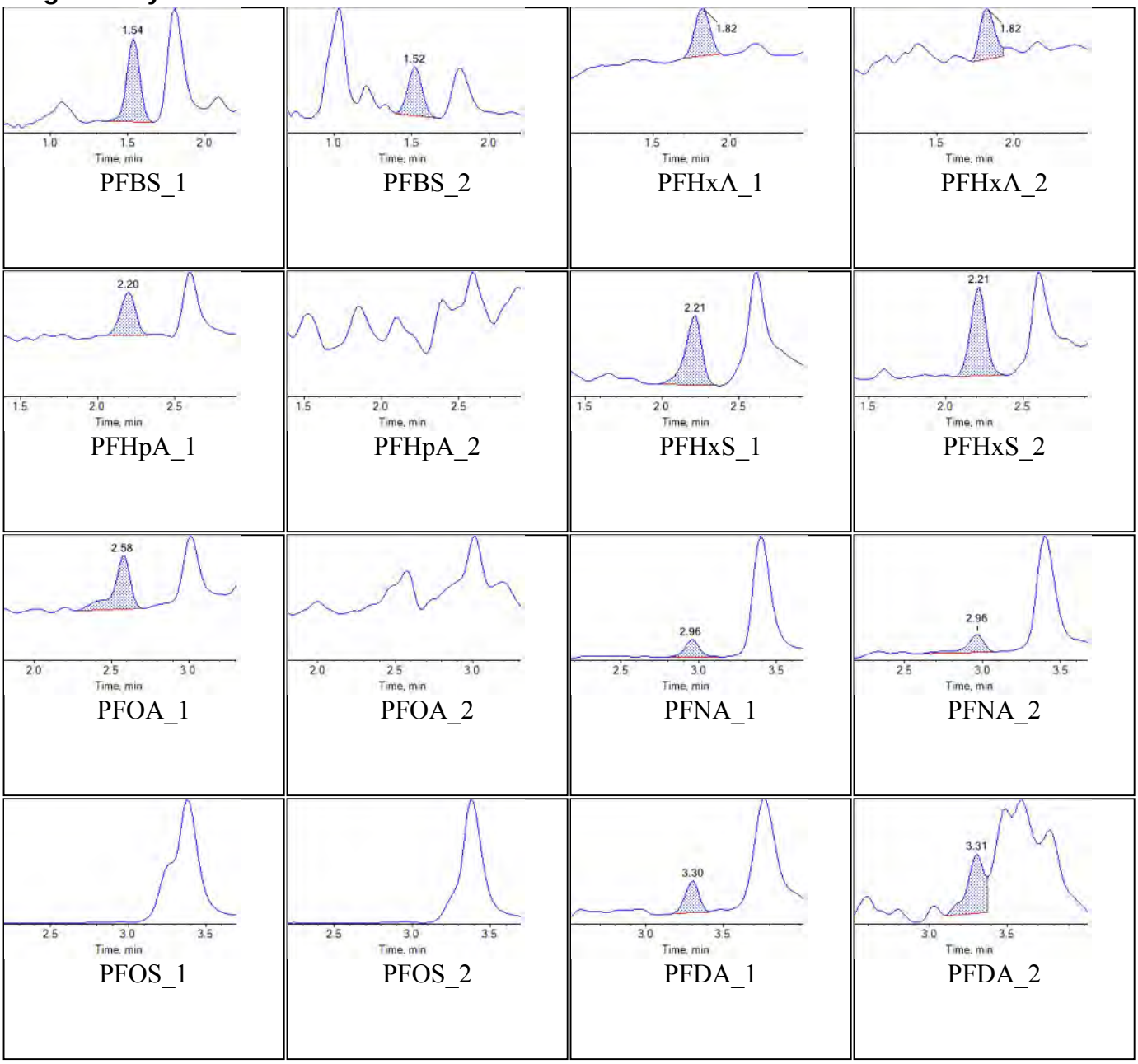
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:05 AM

Sample Name	CQ870PB-FS(0)	**Injection Vial**	12
Sample ID	Procedural Blank	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:16:36	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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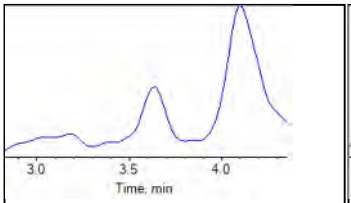
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:05 AM



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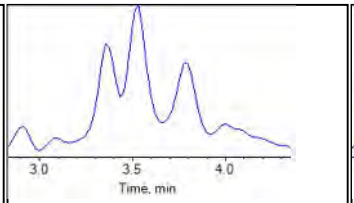
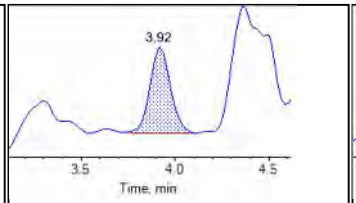


PFUnA_2



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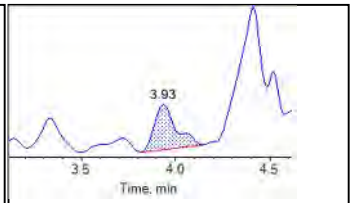

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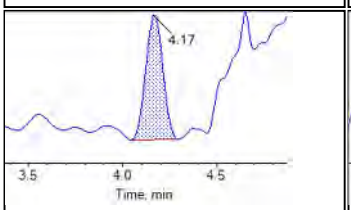

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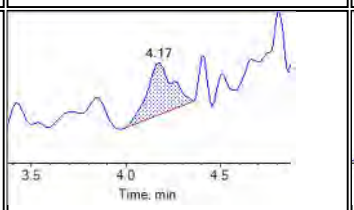

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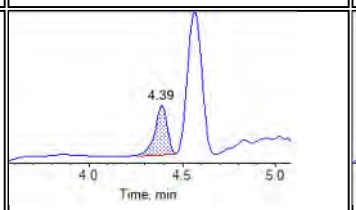

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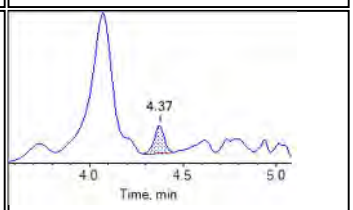

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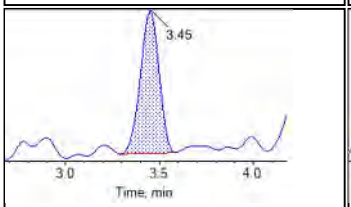

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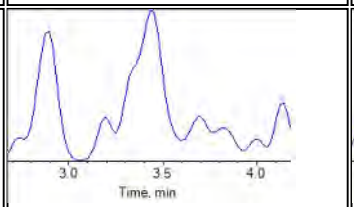

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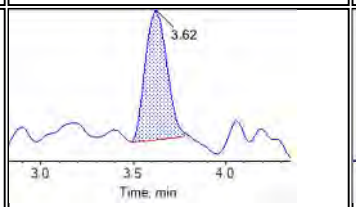

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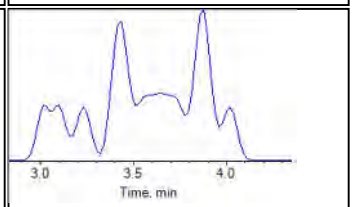

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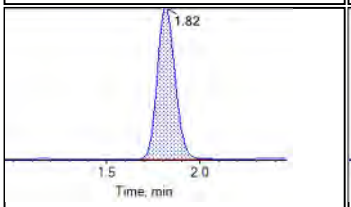
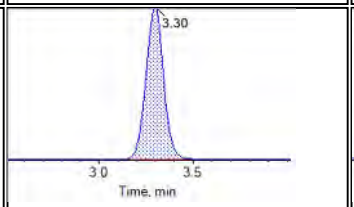


13C2-PFHxA



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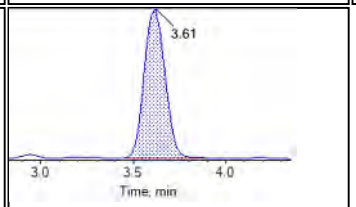
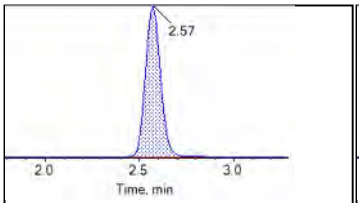
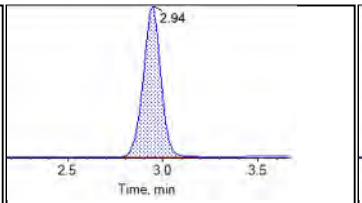


d5-EtFOSAA

Internal Standards:



13C2-PFOA



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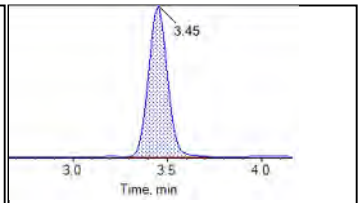

d3-MeFOSAA

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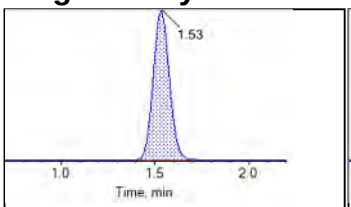
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:08 AM

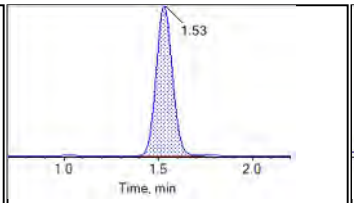
Sample Name	CQ871LCS-FS(0)	**Injection Vial**	13
Sample ID	Laboratory Control Sample	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:25:31	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

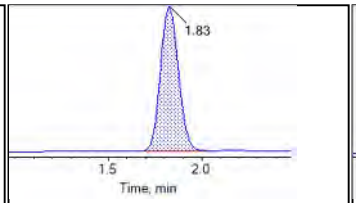
Target Analytes:



PFBS_1



PFBS_2



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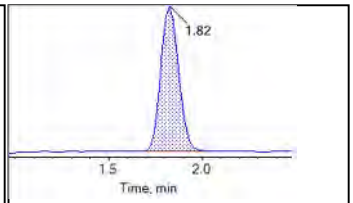

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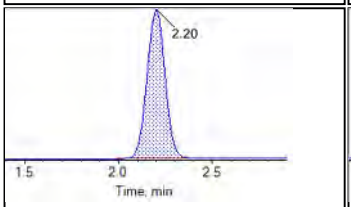

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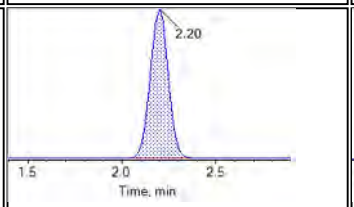

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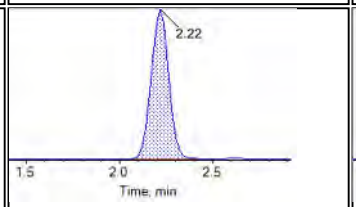

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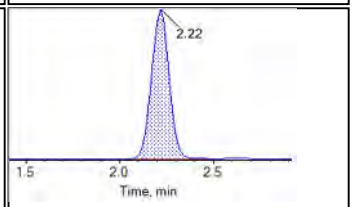

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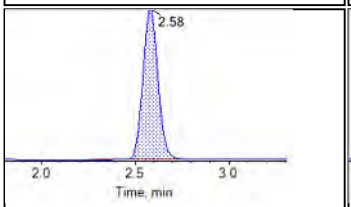
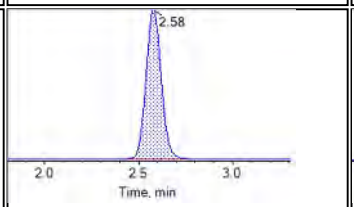


PFOA_1



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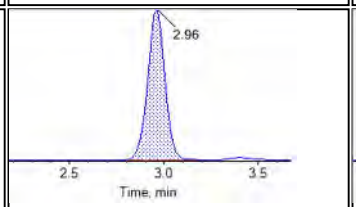

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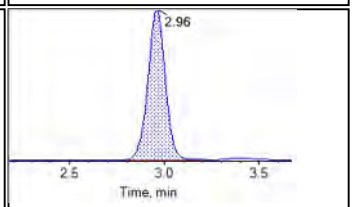

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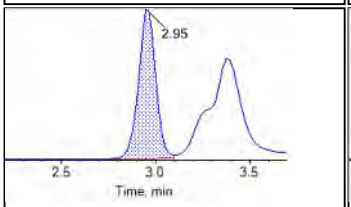
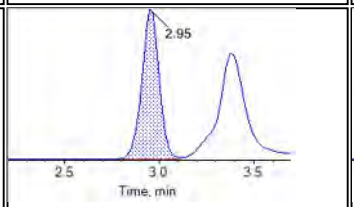


PFOS_1



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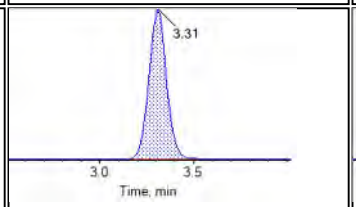

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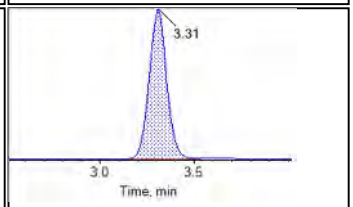

PFDA_2

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Chromatogram Report

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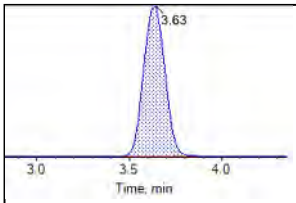
Printed: 15/06/2018 10:47:08 AM



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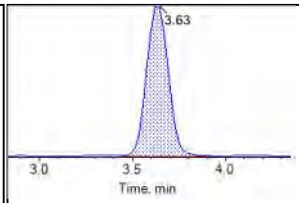

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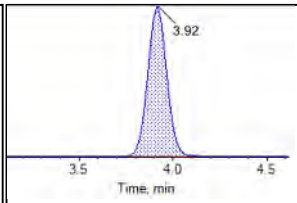

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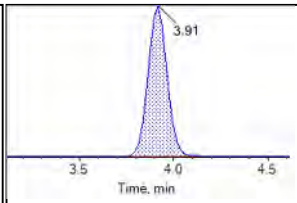

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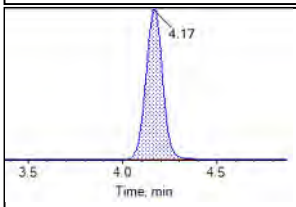

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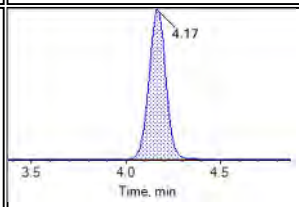

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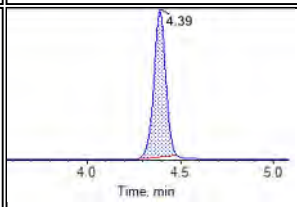

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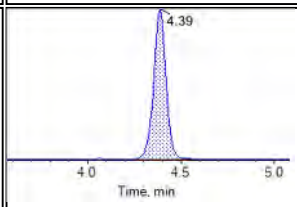

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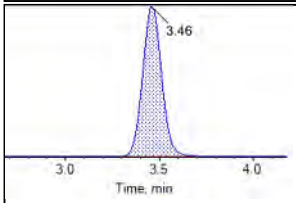

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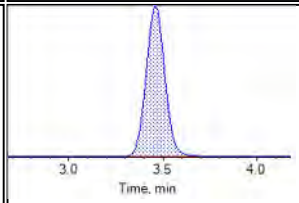

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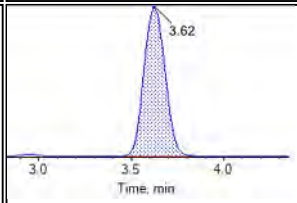

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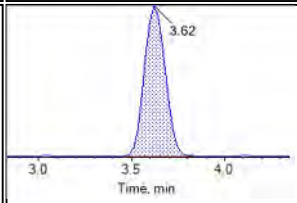

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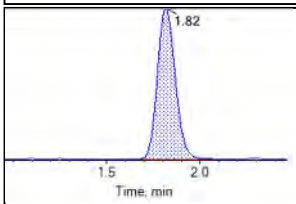

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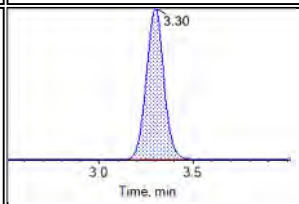

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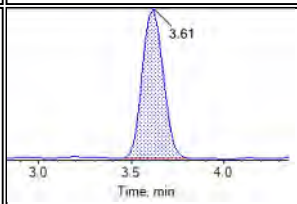
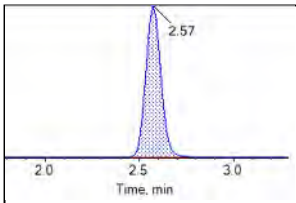


d5-EtFOSAA

Internal Standards:



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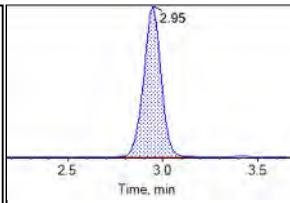

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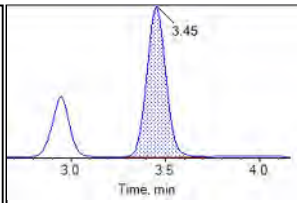

d3-MeFOSAA

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Chromatogram Report

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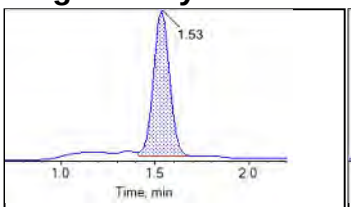
Printed: 15/06/2018 10:47:12 AM

Sample Name	J6258-FS(0)	**Injection Vial**	14
Sample ID	WGNA-052918-RW-3124	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:34:27	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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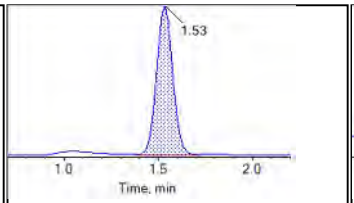

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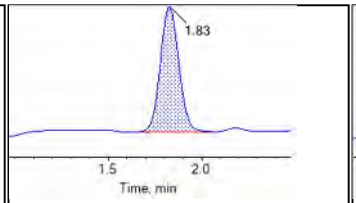

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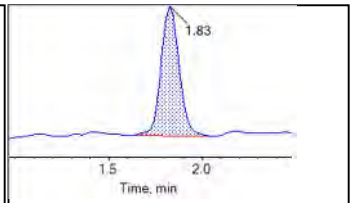

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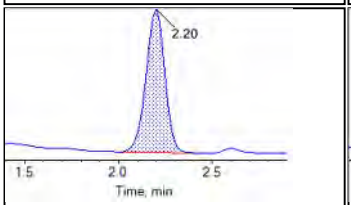

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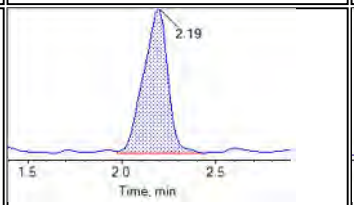

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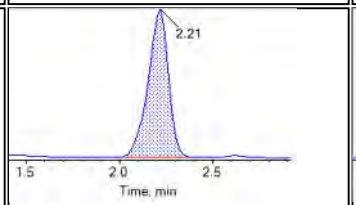

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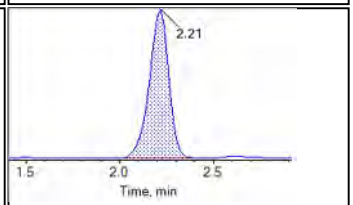

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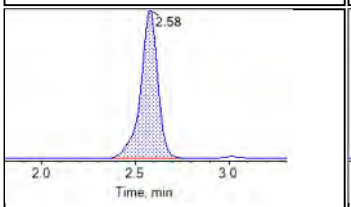

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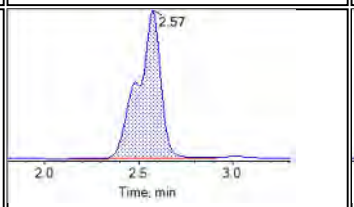

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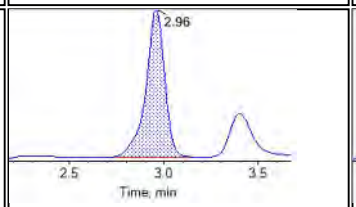

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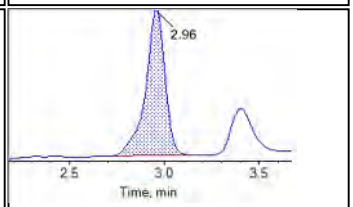

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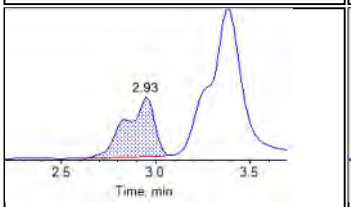

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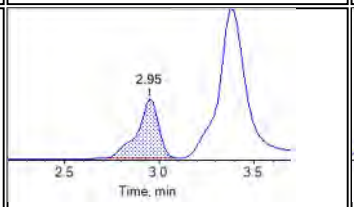

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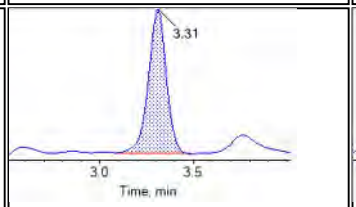

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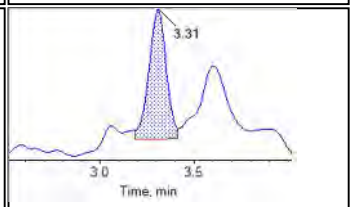

PFDA_2

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Chromatogram Report

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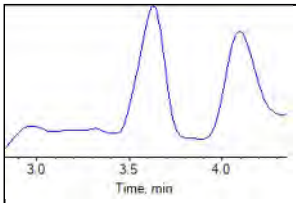

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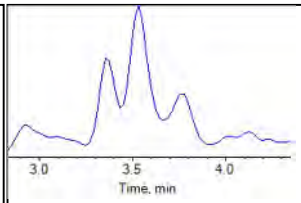

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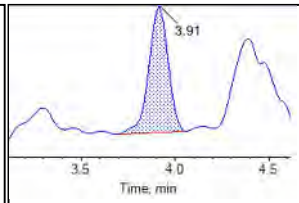

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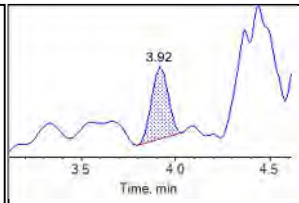

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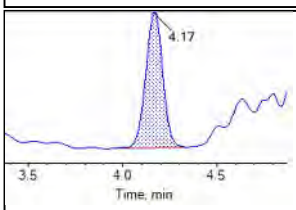

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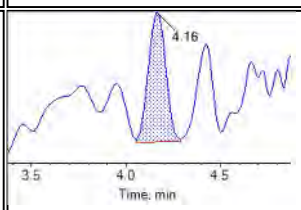

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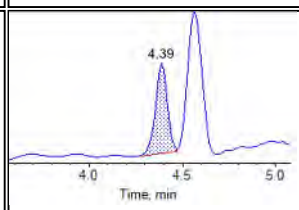

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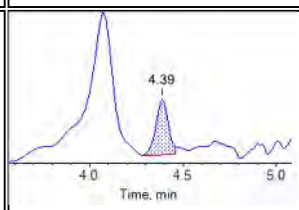

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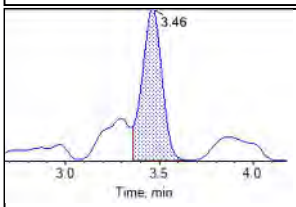

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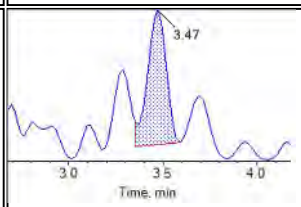

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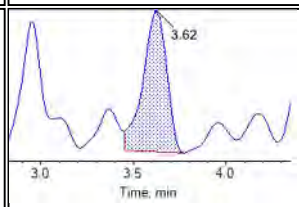

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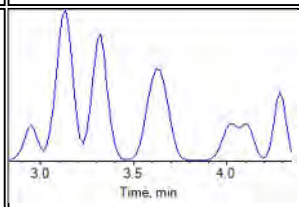

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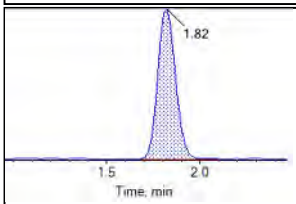

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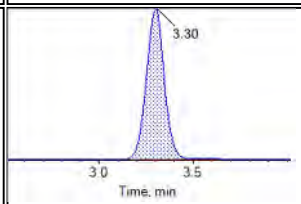

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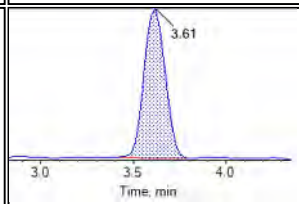

d5-EtFOSAA

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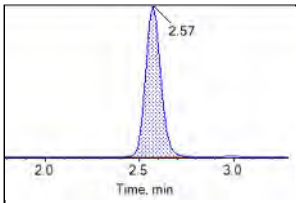

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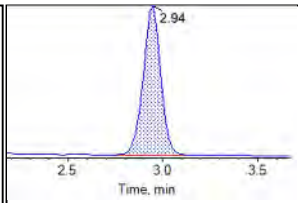

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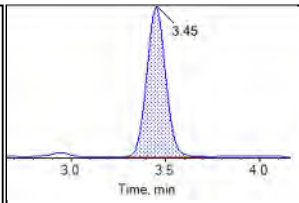

d3-MeFOSAA

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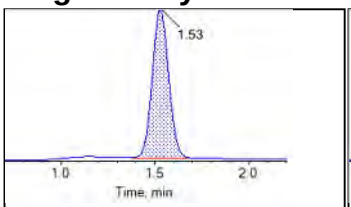
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:15 AM

Sample Name	J6260-FS(0)	**Injection Vial**	15
Sample ID	WGNA-052918-RW-3493	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:43:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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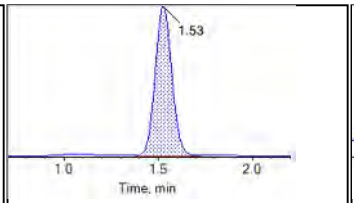

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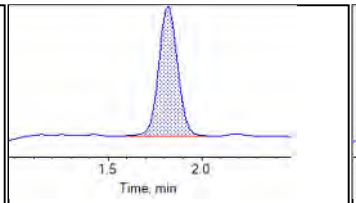

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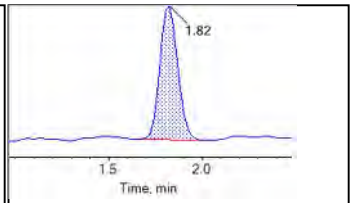

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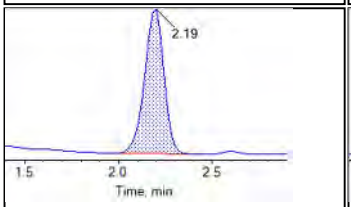

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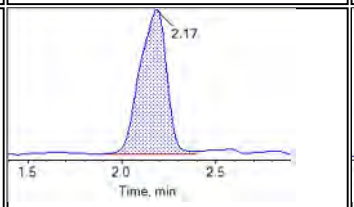

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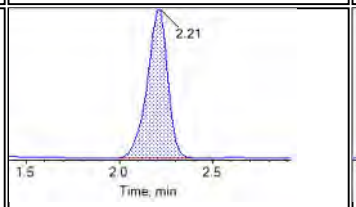

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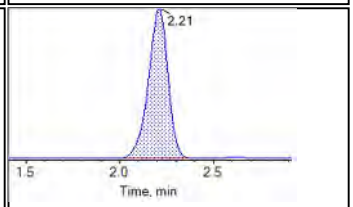

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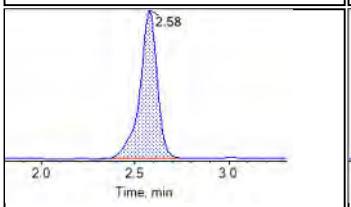

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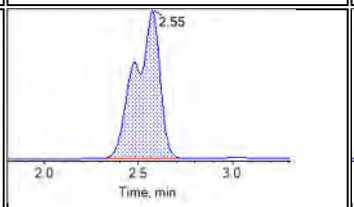

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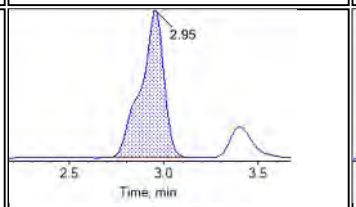

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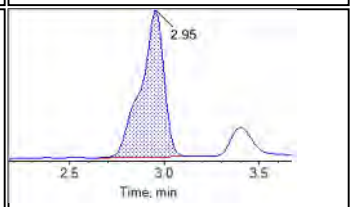

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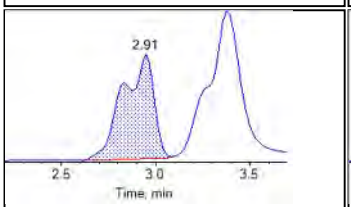

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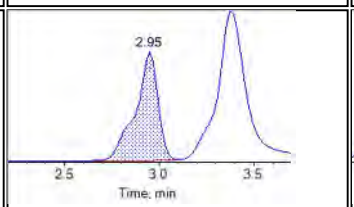

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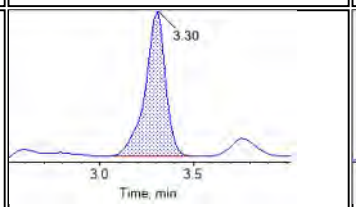

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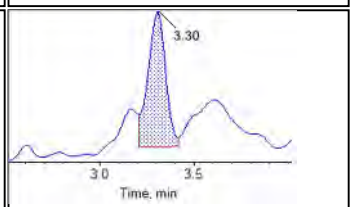

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Chromatogram Report

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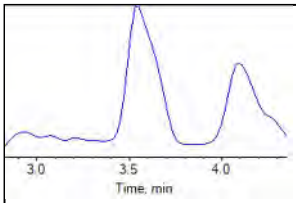

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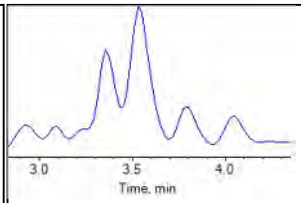

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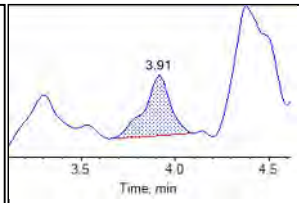

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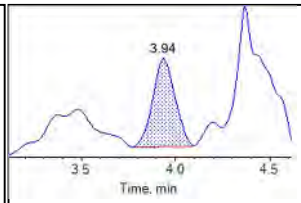

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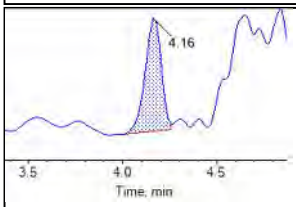

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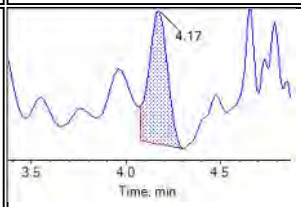

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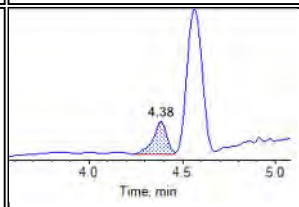

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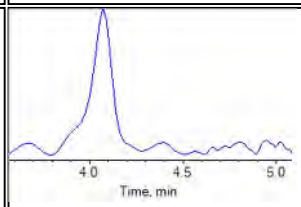

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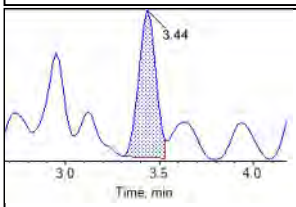

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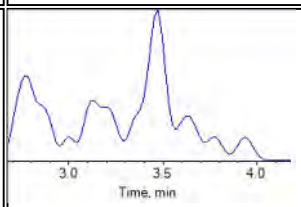

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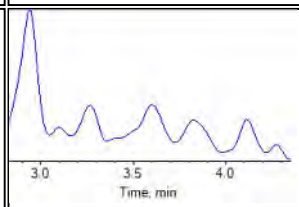

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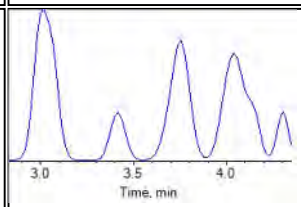

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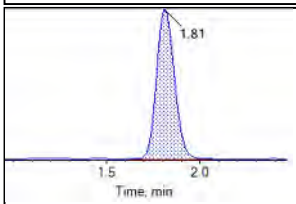

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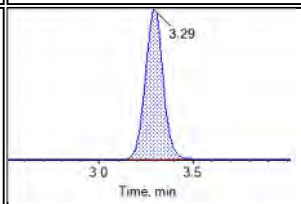

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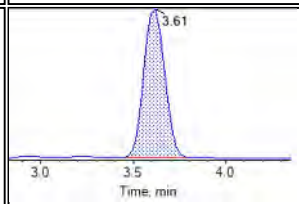
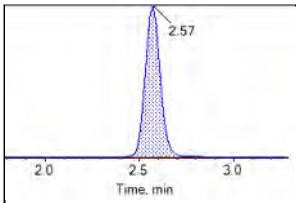


d5-EtFOSAA

Internal Standards:



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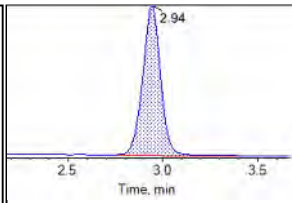

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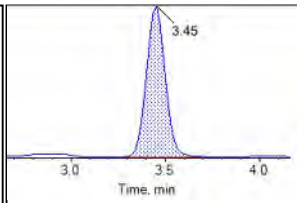

d3-MeFOSAA

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Chromatogram Report

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Sample Name	J6262-FS(0)	**Injection Vial**	16
Sample ID	WGNA-052918-RW-3882	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:52:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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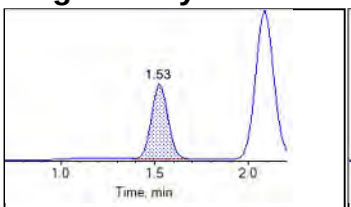

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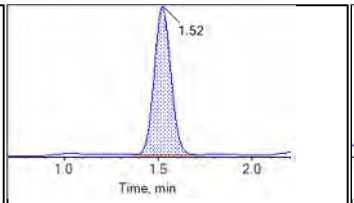

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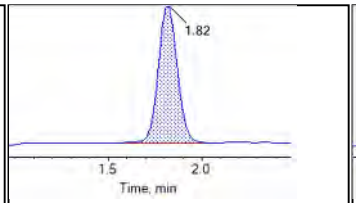

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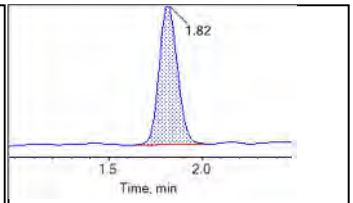

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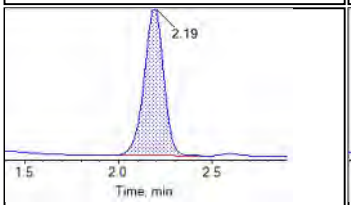

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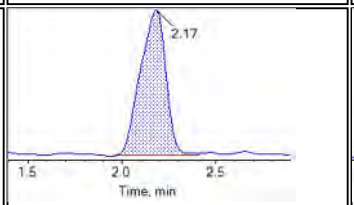

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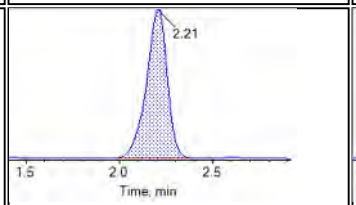

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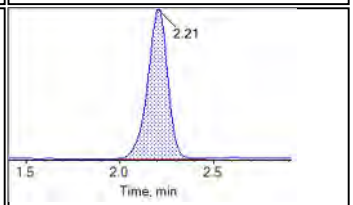

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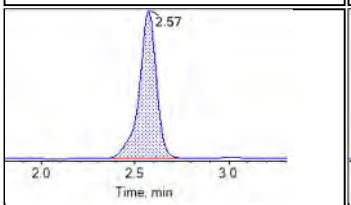

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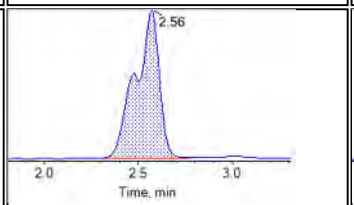

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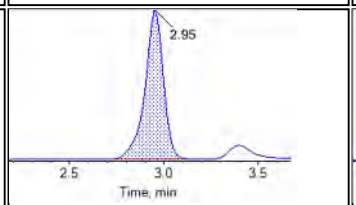

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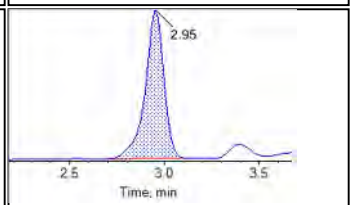

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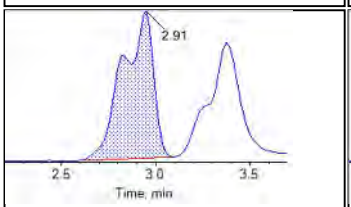

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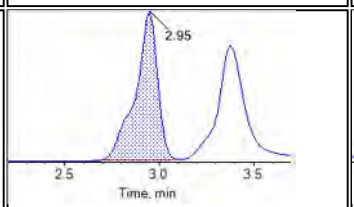

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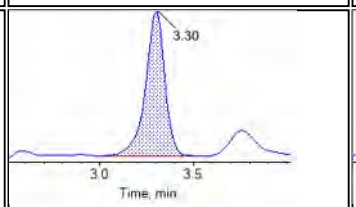

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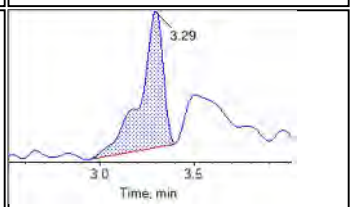

PFDA_2

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Chromatogram Report

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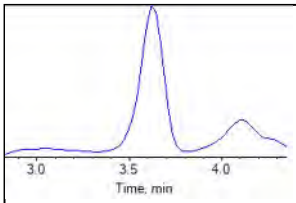

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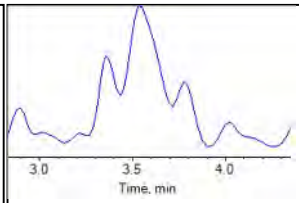

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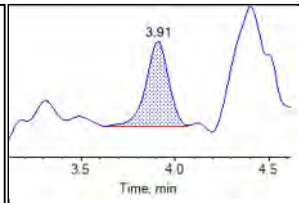

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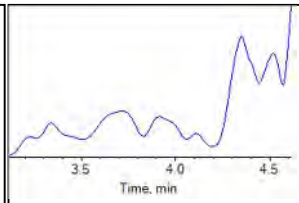

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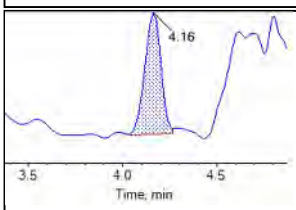

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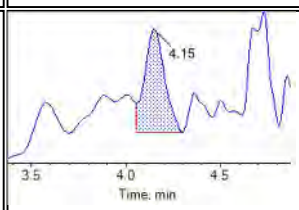

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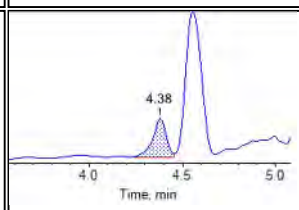

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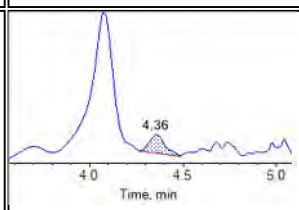

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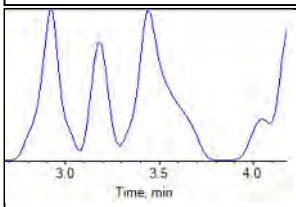

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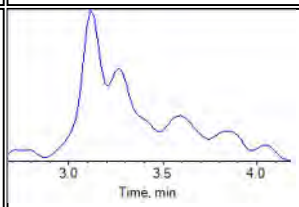

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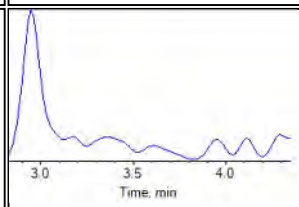

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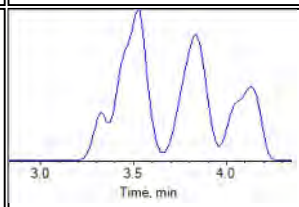

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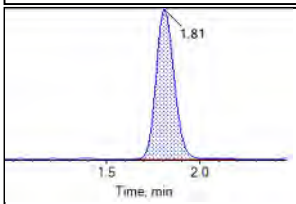
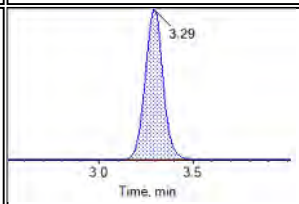


13C2-PFHxA



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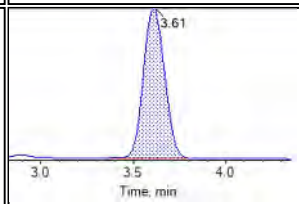

d5-EtFOSAA

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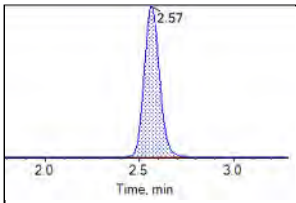

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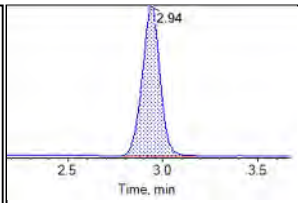

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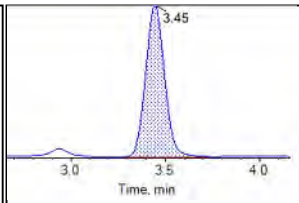

d3-MeFOSAA

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Chromatogram Report

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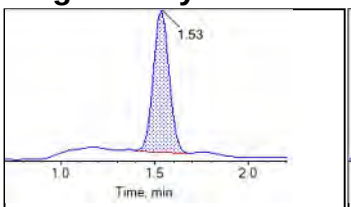
Printed: 15/06/2018 10:47:22 AM

Sample Name	J6264-FS(0)	**Injection Vial**	17
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:01:12	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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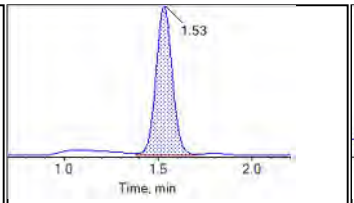

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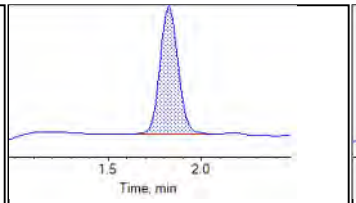

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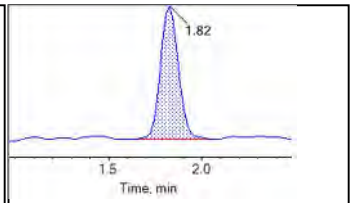

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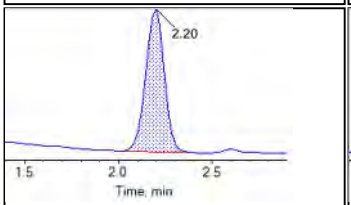

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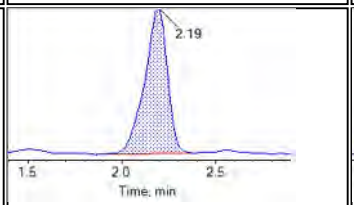

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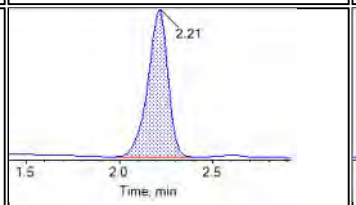

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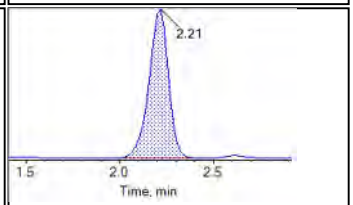

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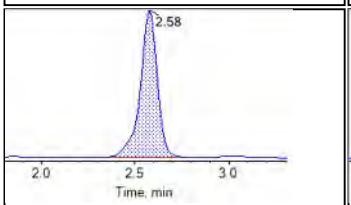

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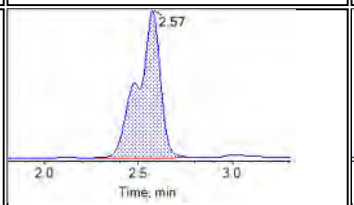

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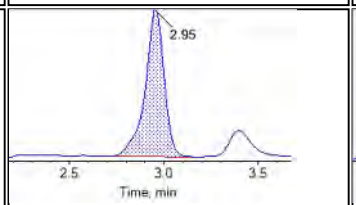

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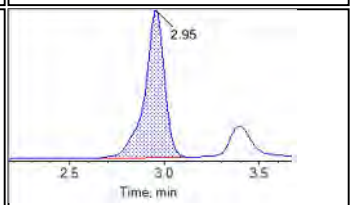

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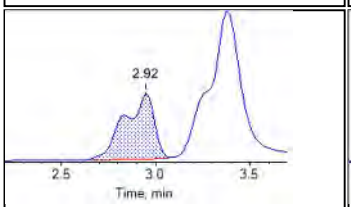

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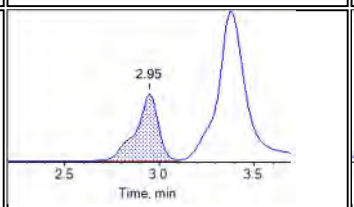

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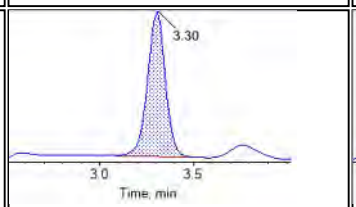

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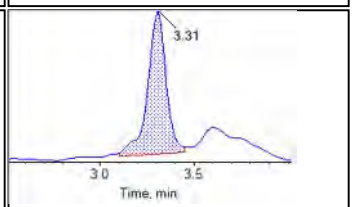

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Chromatogram Report

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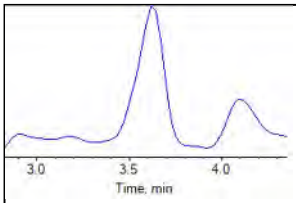

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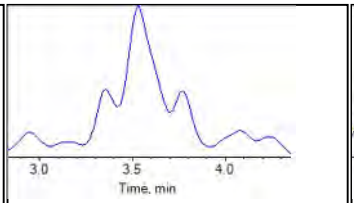

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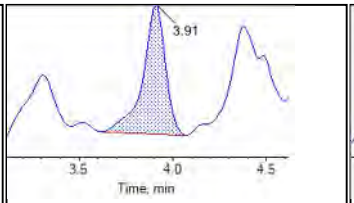

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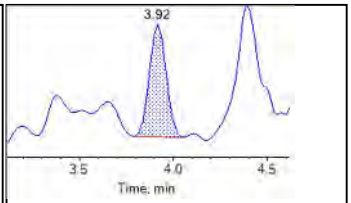

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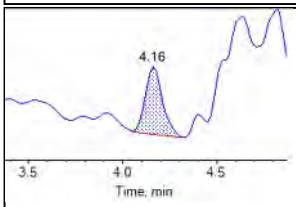

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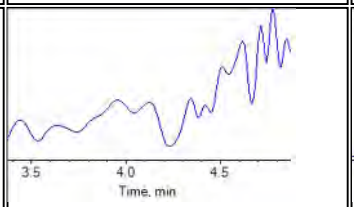

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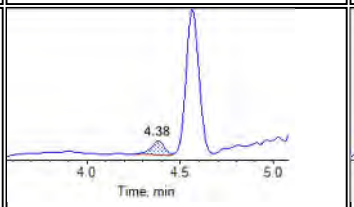

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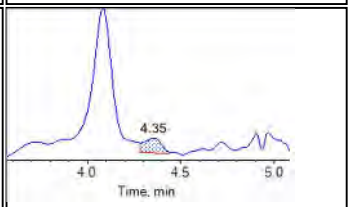

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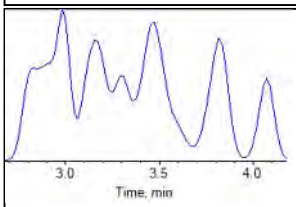

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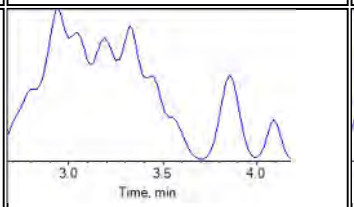

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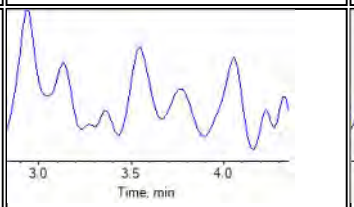

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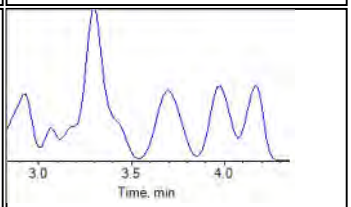

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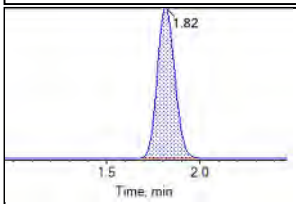

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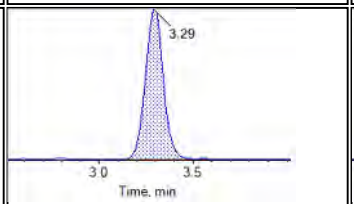

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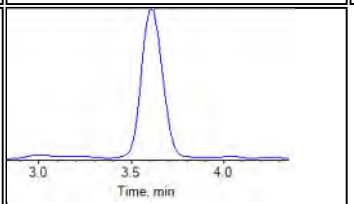
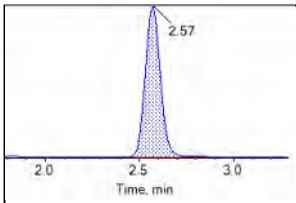


d5-EtFOSAA

Internal Standards:



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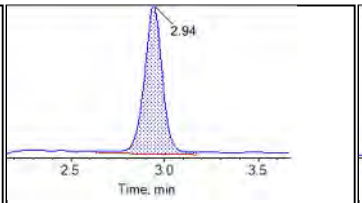

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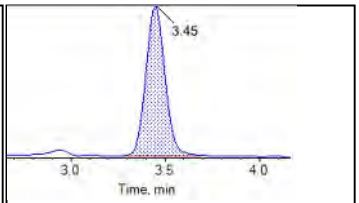

d3-MeFOSAA

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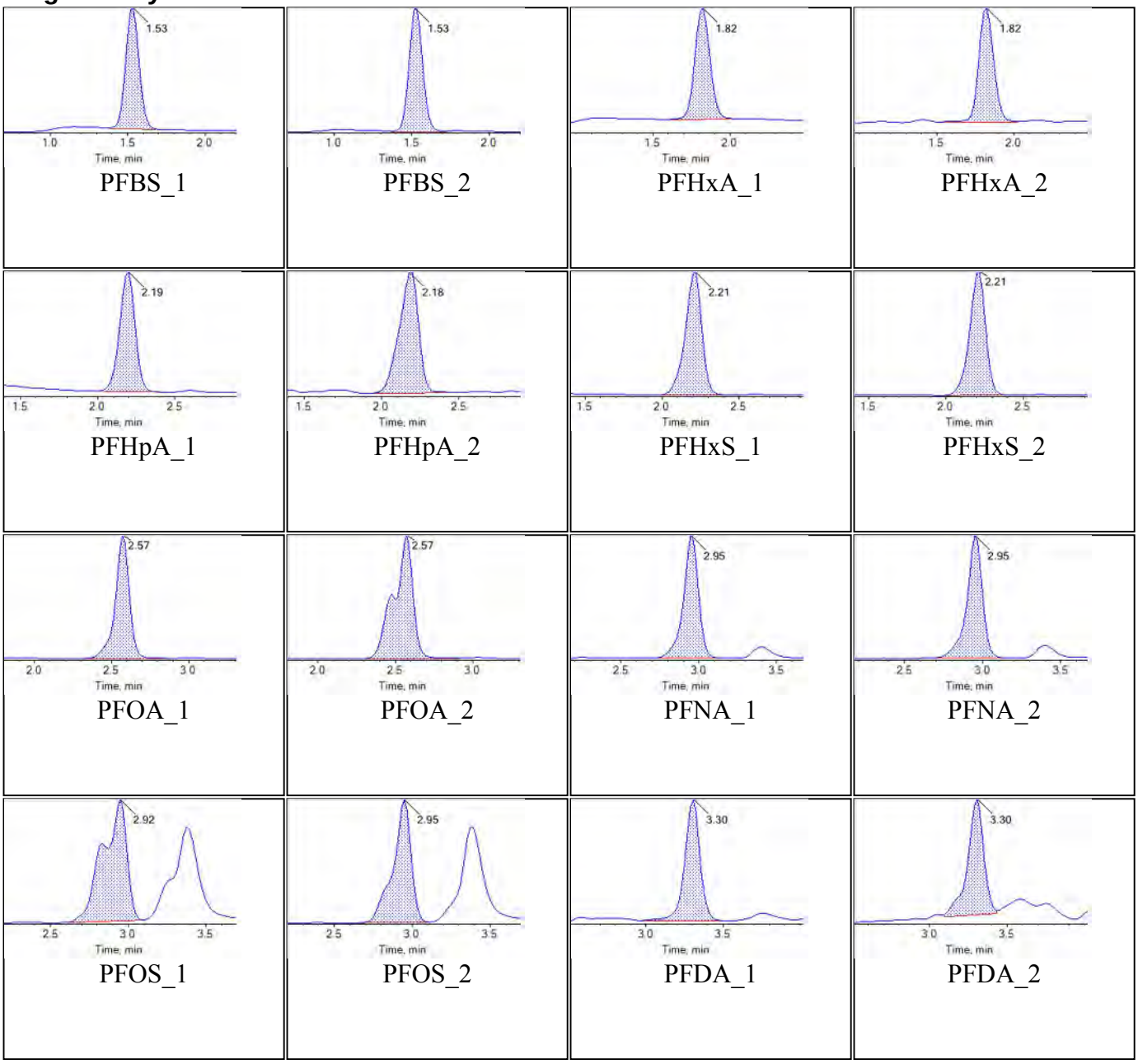
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:25 AM

Sample Name	J6266-FS(0)	**Injection Vial**	18
Sample ID	NAWC-052918-RW-161	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:10:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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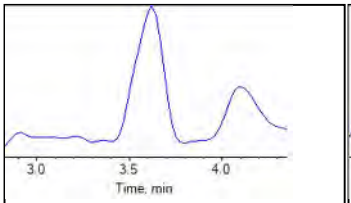
Printed: 15/06/2018 10:47:25 AM



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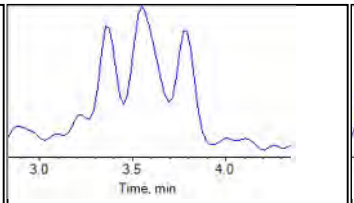

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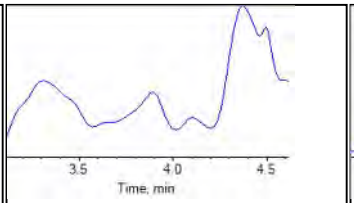

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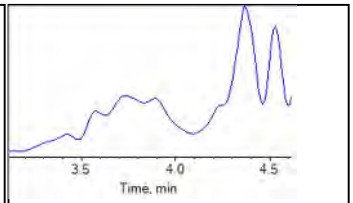

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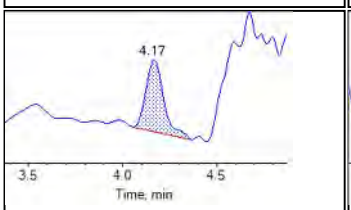

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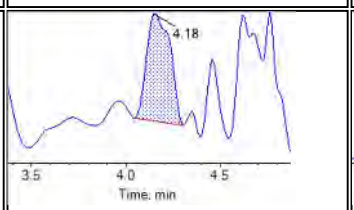

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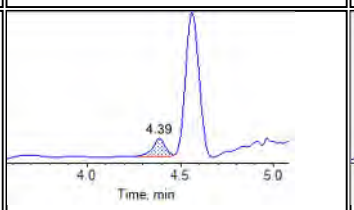

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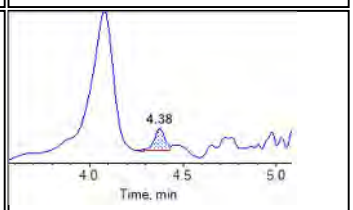

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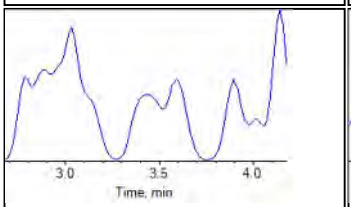

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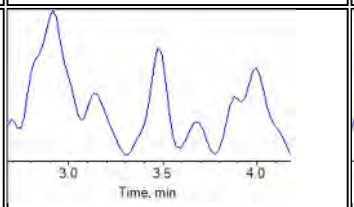

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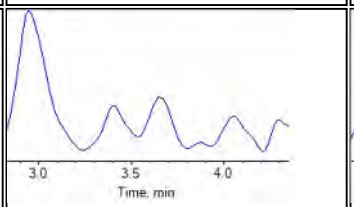

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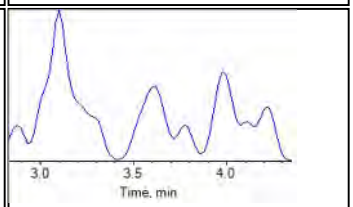

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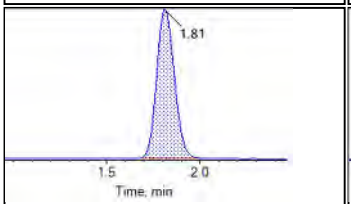
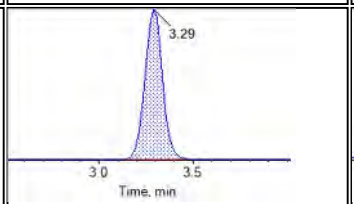


13C2-PFHxA



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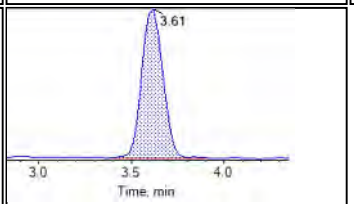
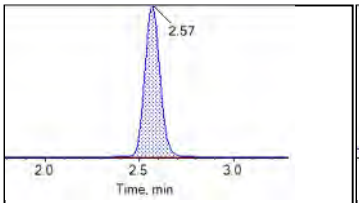


d5-EtFOSAA

Internal Standards:



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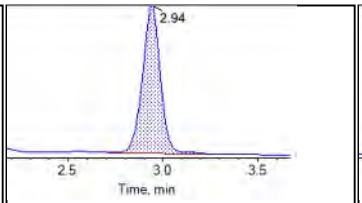
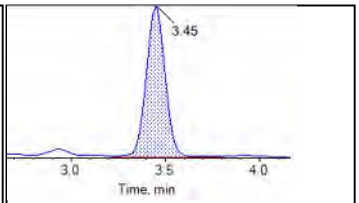


13C4-PFOS



d3-MeFOSAA

BATTELLE

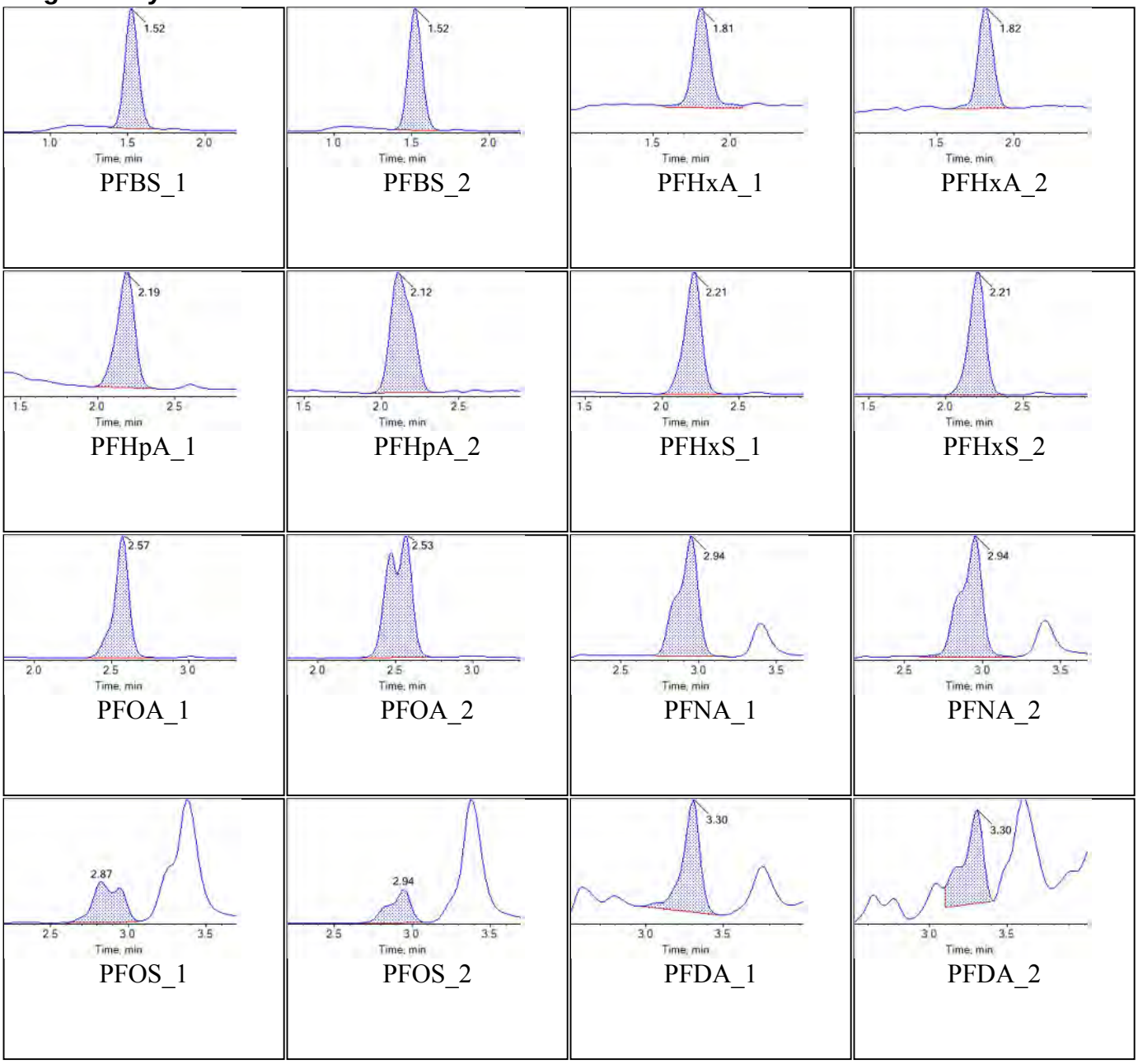
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:28 AM

Sample Name	J6270-FS(0)	**Injection Vial**	19
Sample ID	WGNA-053018-RW-3876	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:19:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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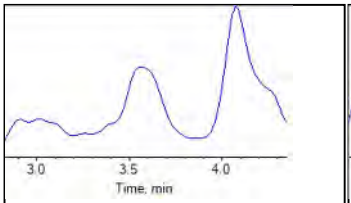
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:28 AM



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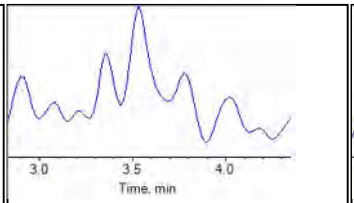
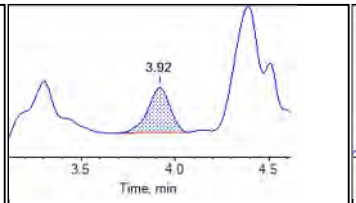
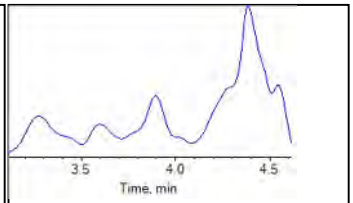


PFUnA_2



PFDoA_1



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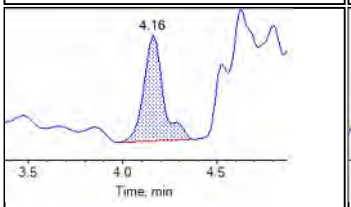

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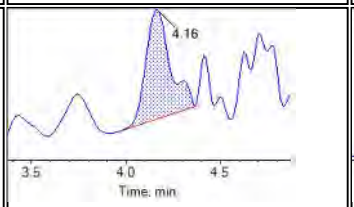

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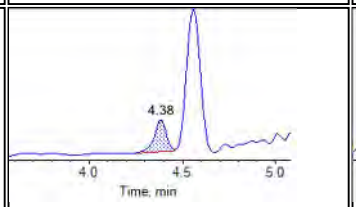

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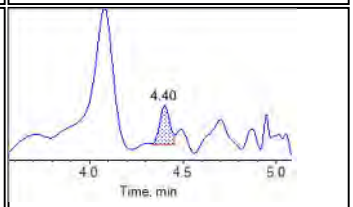

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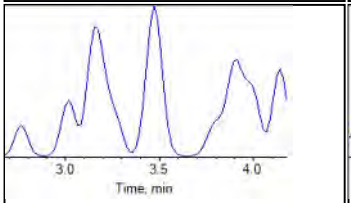

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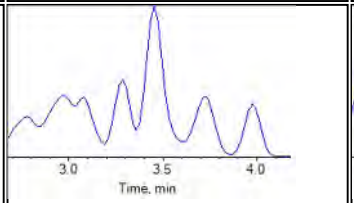

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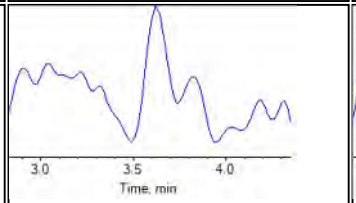

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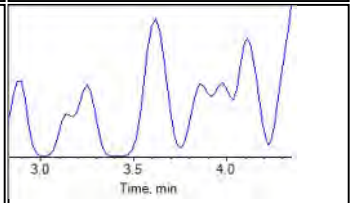

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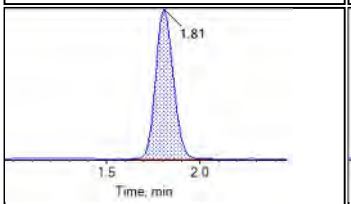
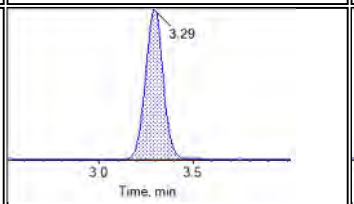
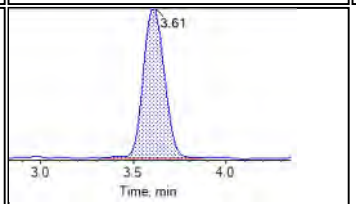


13C2-PFHxA

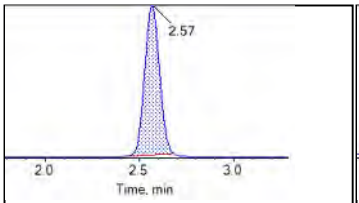


13C2-PFDA



d5-EtFOSAA

Internal Standards:



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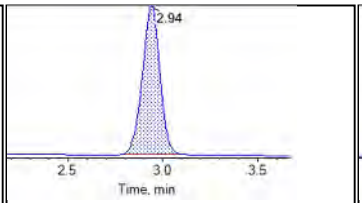

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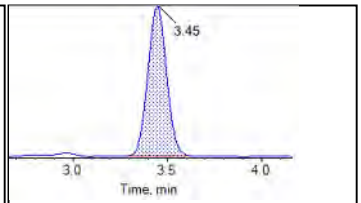

d3-MeFOSAA

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Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:31 AM

Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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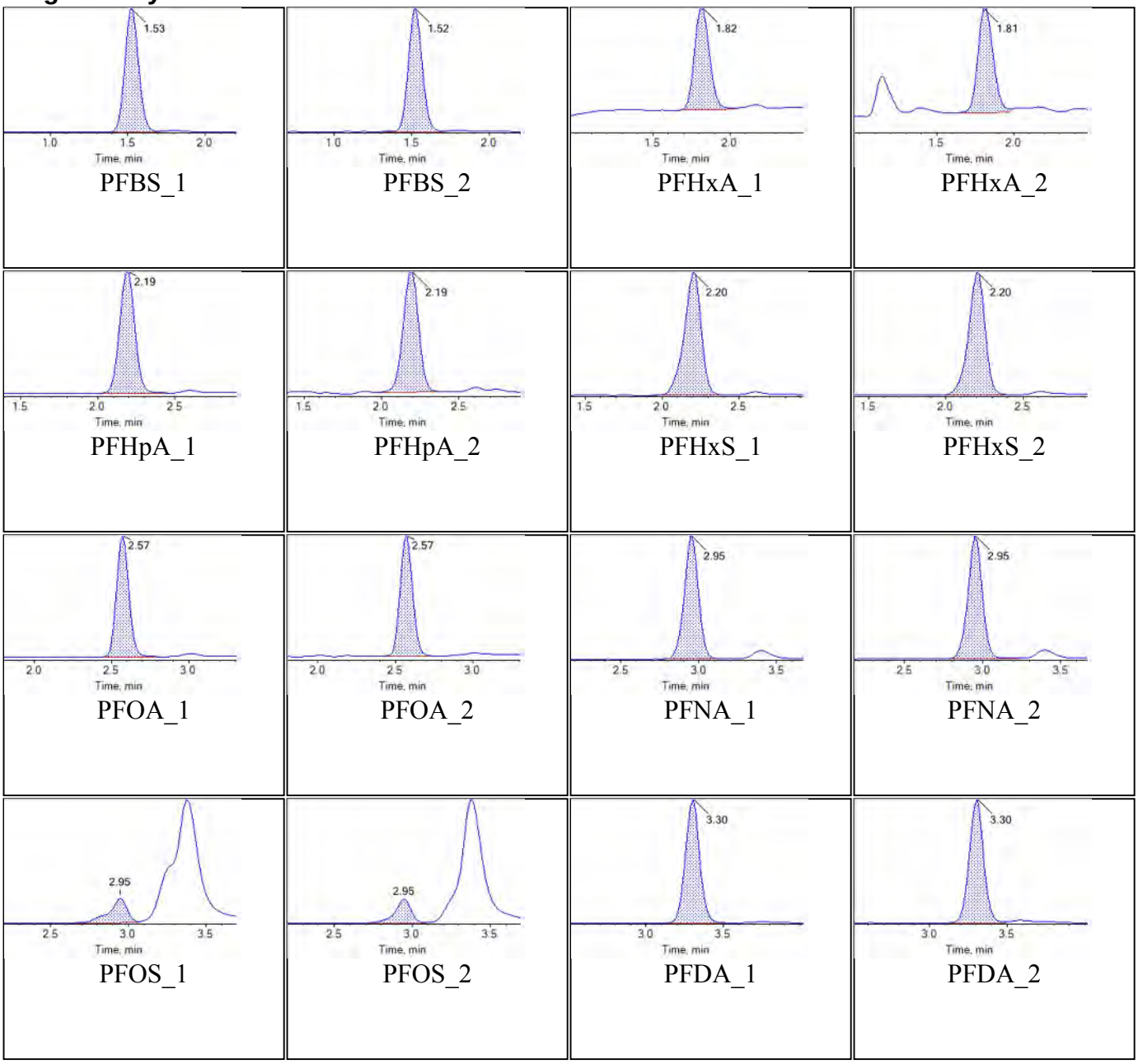
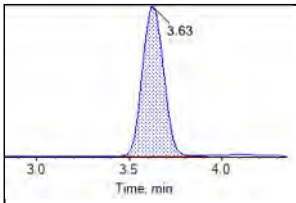


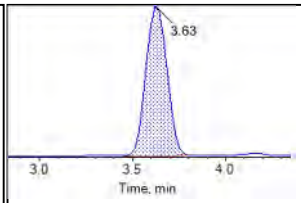
BATTELLE

Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:31 AM



PFUnA_1



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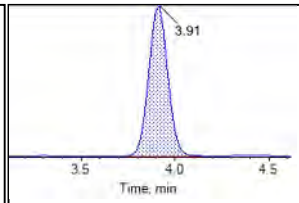

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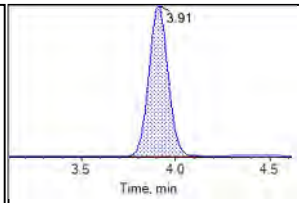

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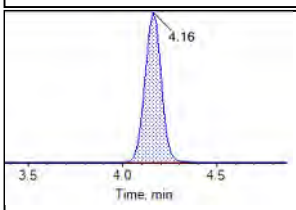

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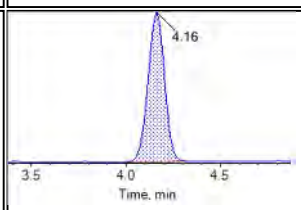

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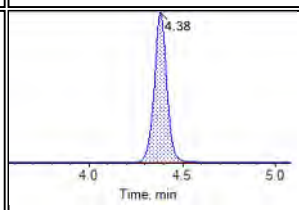

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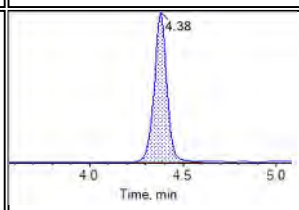

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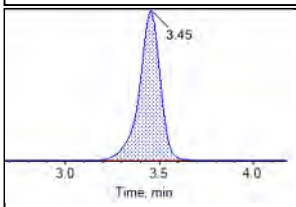

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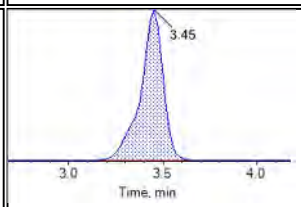

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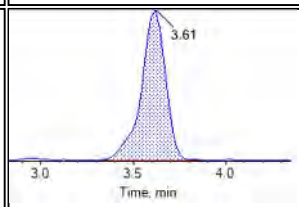

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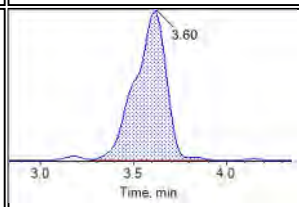

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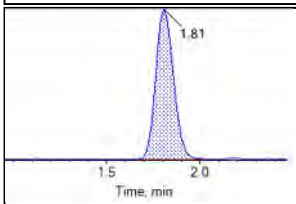
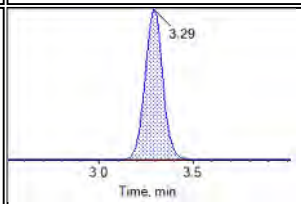


13C2-PFHxA



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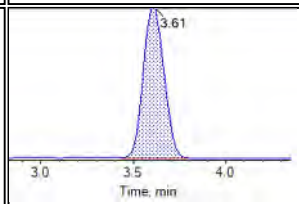

d5-EtFOSAA

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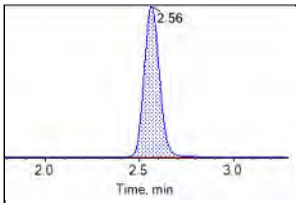

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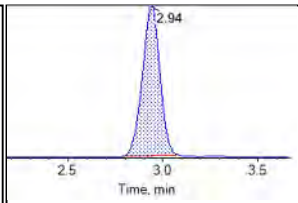

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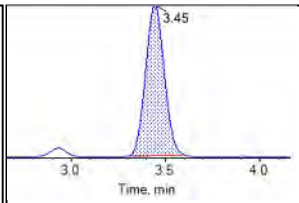

d3-MeFOSAA

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Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:35 AM

Sample Name	J6272-FS(0)	**Injection Vial**	21
Sample ID	WGNA-053018-DUP-37	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:36:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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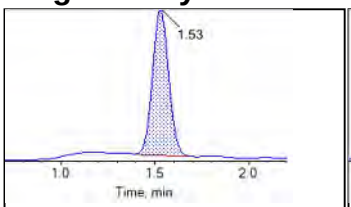

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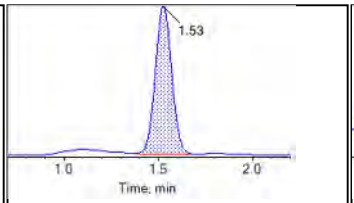

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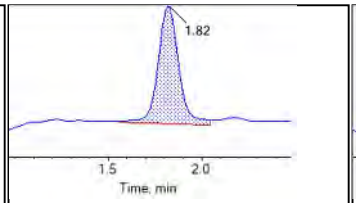

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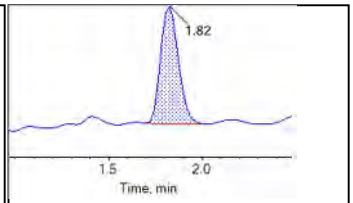

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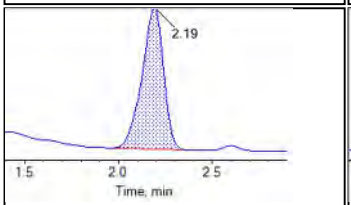

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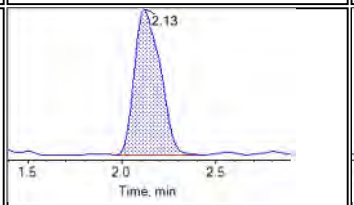

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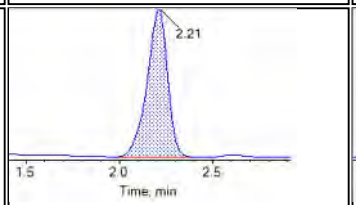

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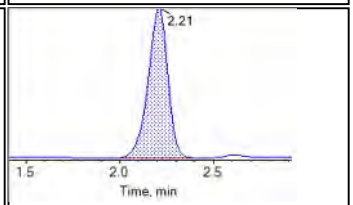

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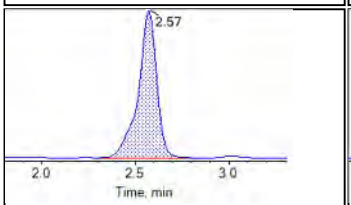

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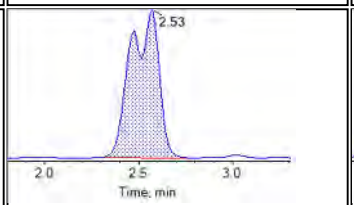

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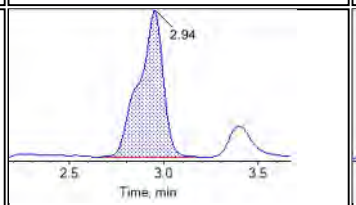

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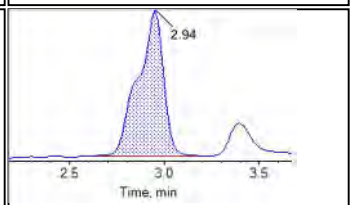

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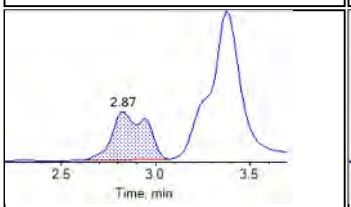

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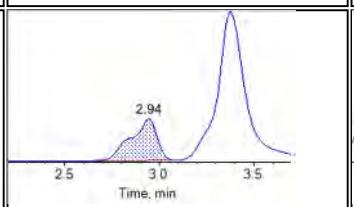

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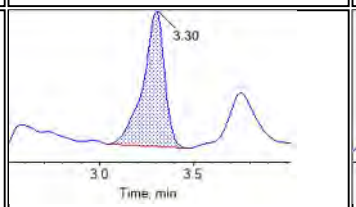

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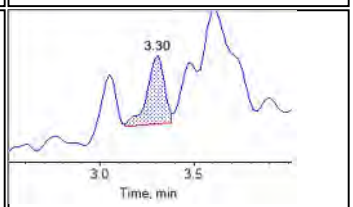

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Chromatogram Report

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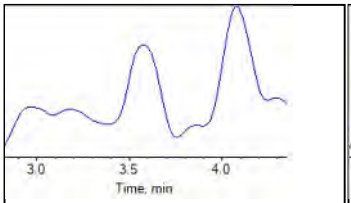

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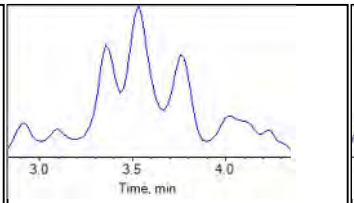

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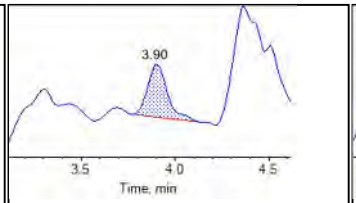

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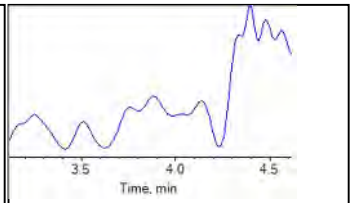

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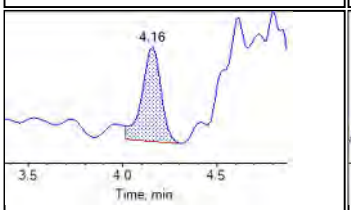

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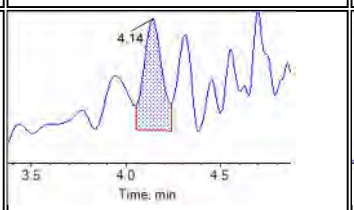

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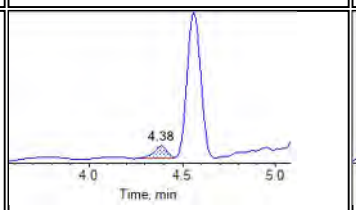

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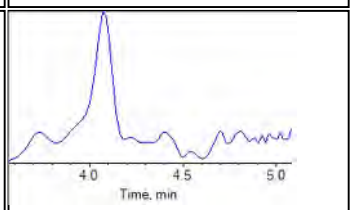

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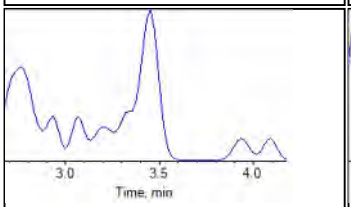

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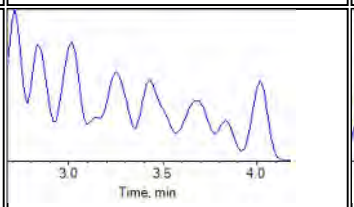

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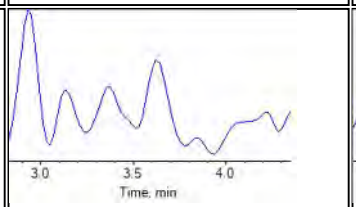

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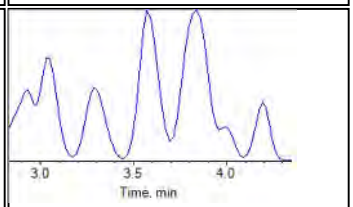

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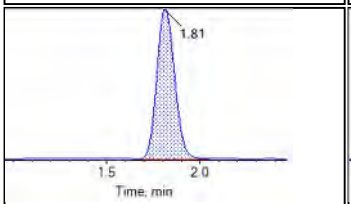

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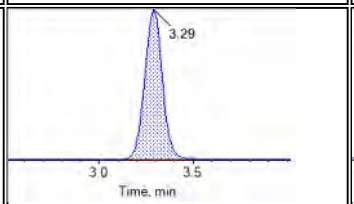

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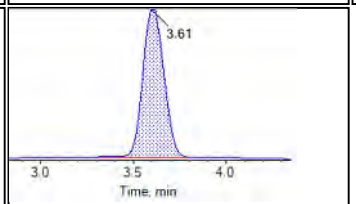
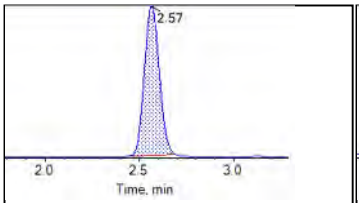


d5-EtFOSAA

Internal Standards:



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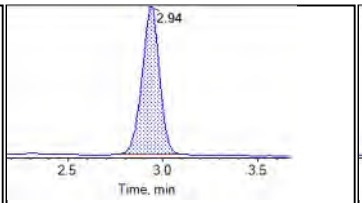

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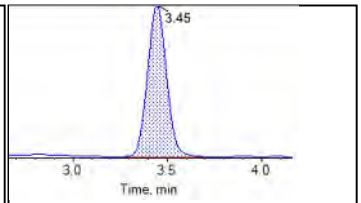

d3-MeFOSAA

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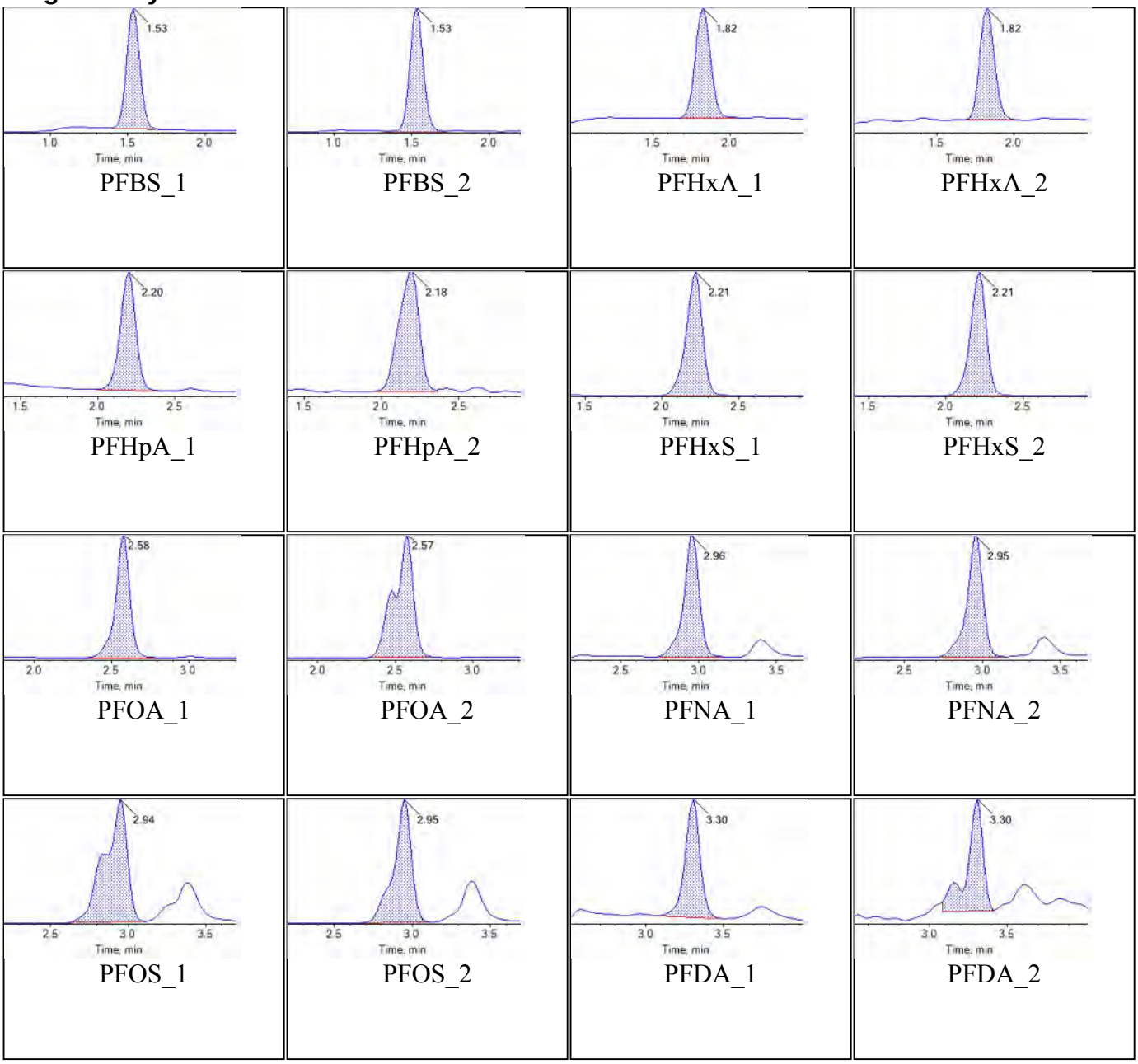
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:38 AM

Sample Name	J6273-FS(0)	**Injection Vial**	22
Sample ID	NAWC-053018-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:45:47	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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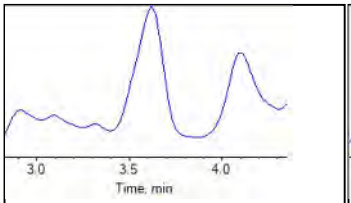

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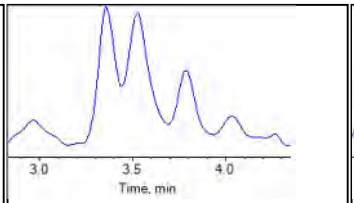

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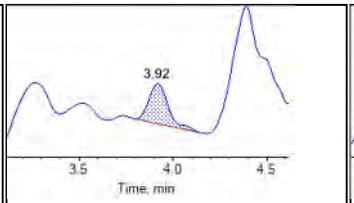

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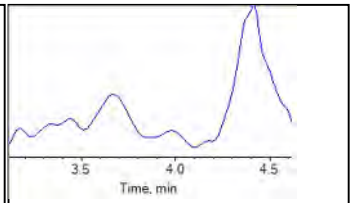

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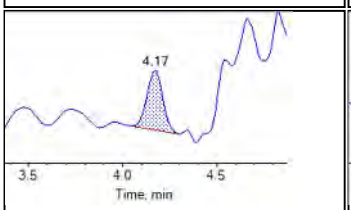

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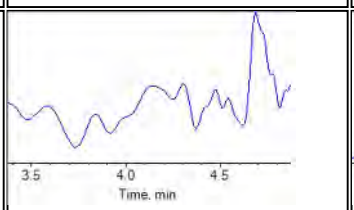

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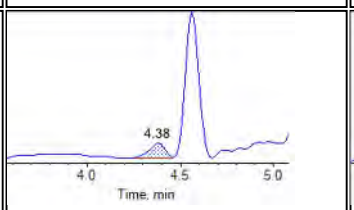

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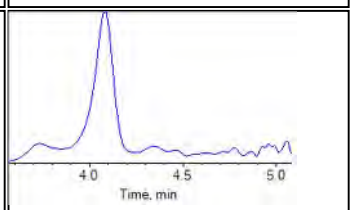

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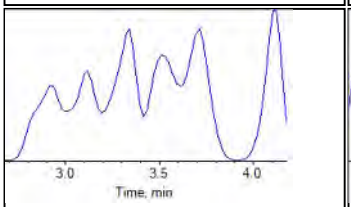

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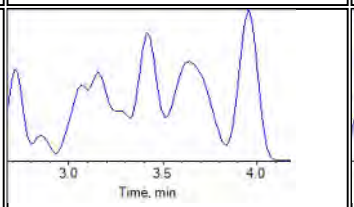

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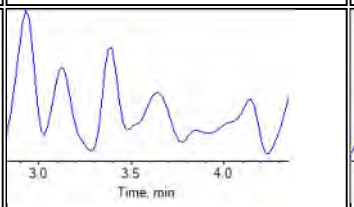

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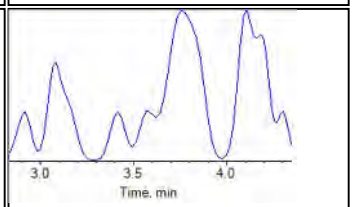

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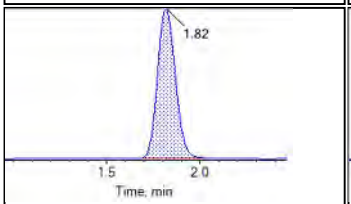
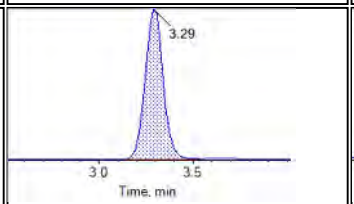


13C2-PFHxA



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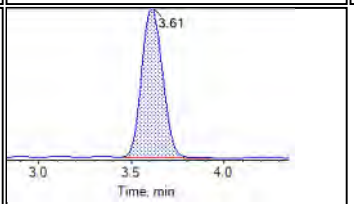

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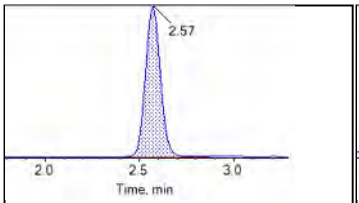

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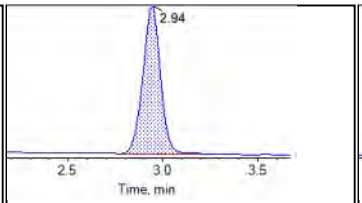

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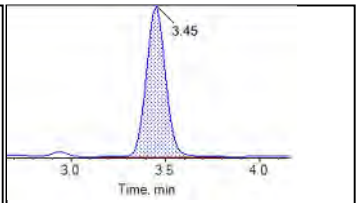

d3-MeFOSAA

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Chromatogram Report

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Printed: 15/06/2018 10:47:41 AM

Sample Name	J6275-FS(0)	**Injection Vial**	23
Sample ID	WGNA-053018-RW-3933	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:54:42	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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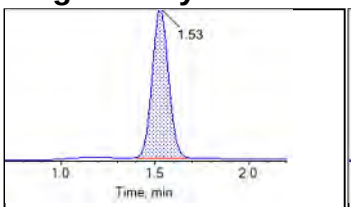

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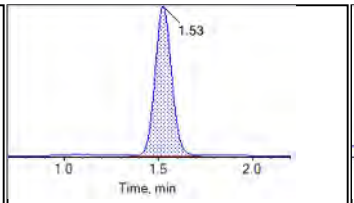

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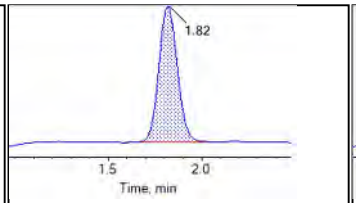

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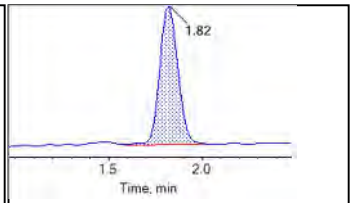

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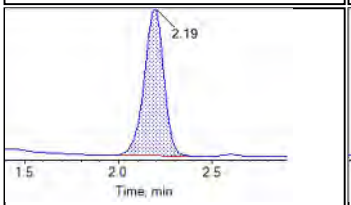

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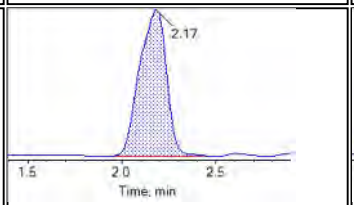

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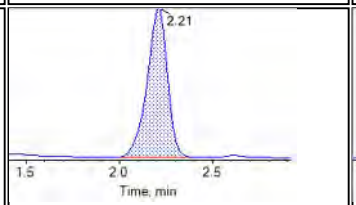

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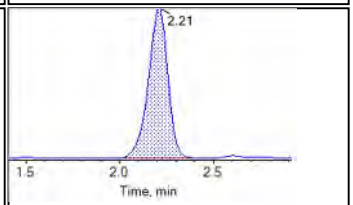

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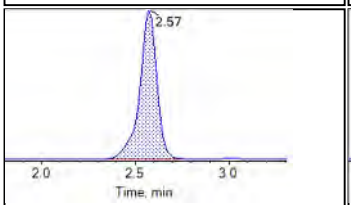

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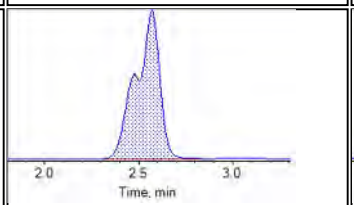

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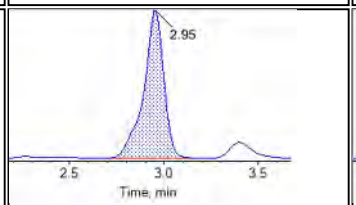

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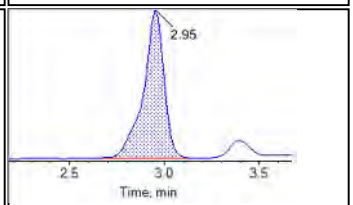

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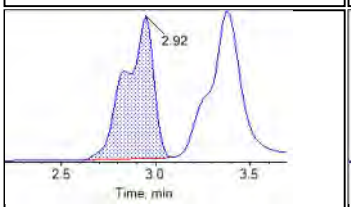

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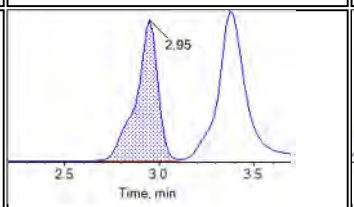

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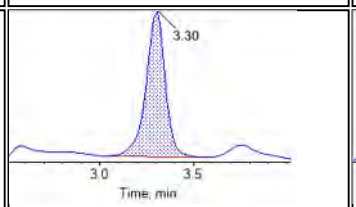

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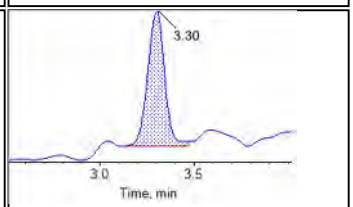

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Chromatogram Report

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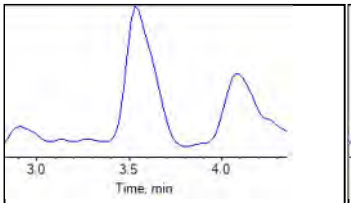

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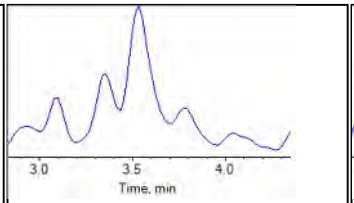

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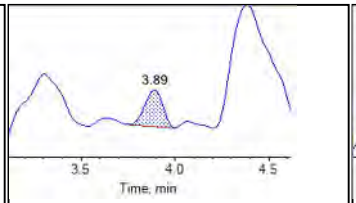

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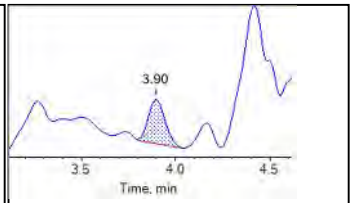

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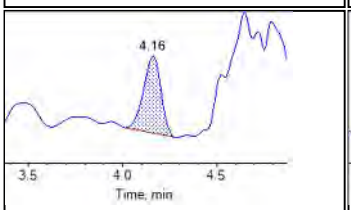

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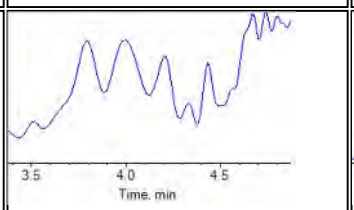

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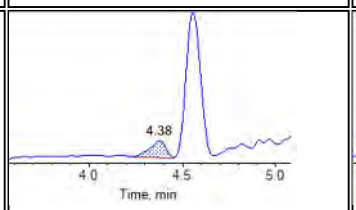

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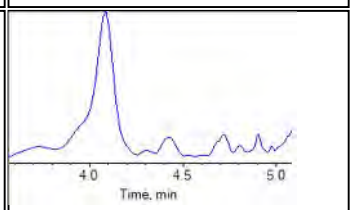

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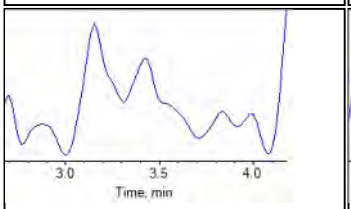

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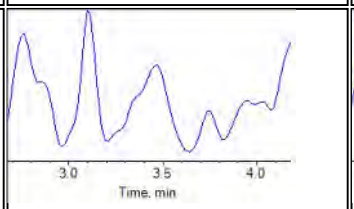

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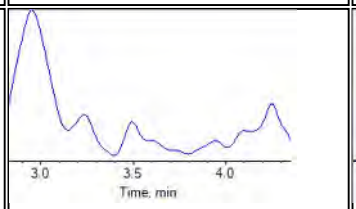

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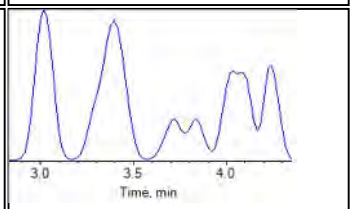

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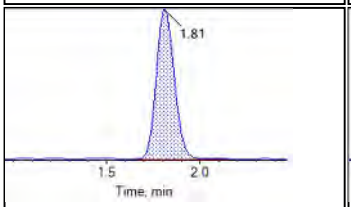

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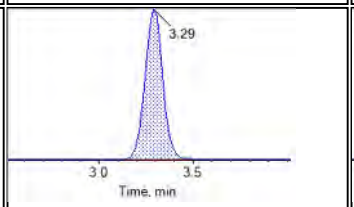

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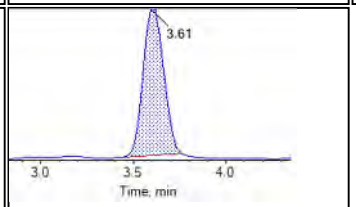

d5-EtFOSAA

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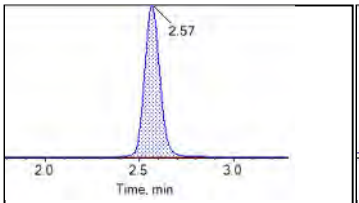

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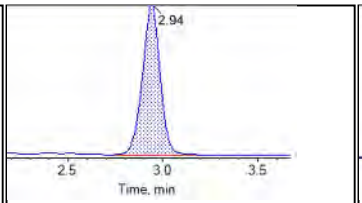

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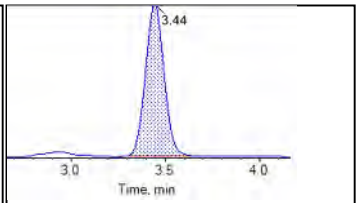

d3-MeFOSAA

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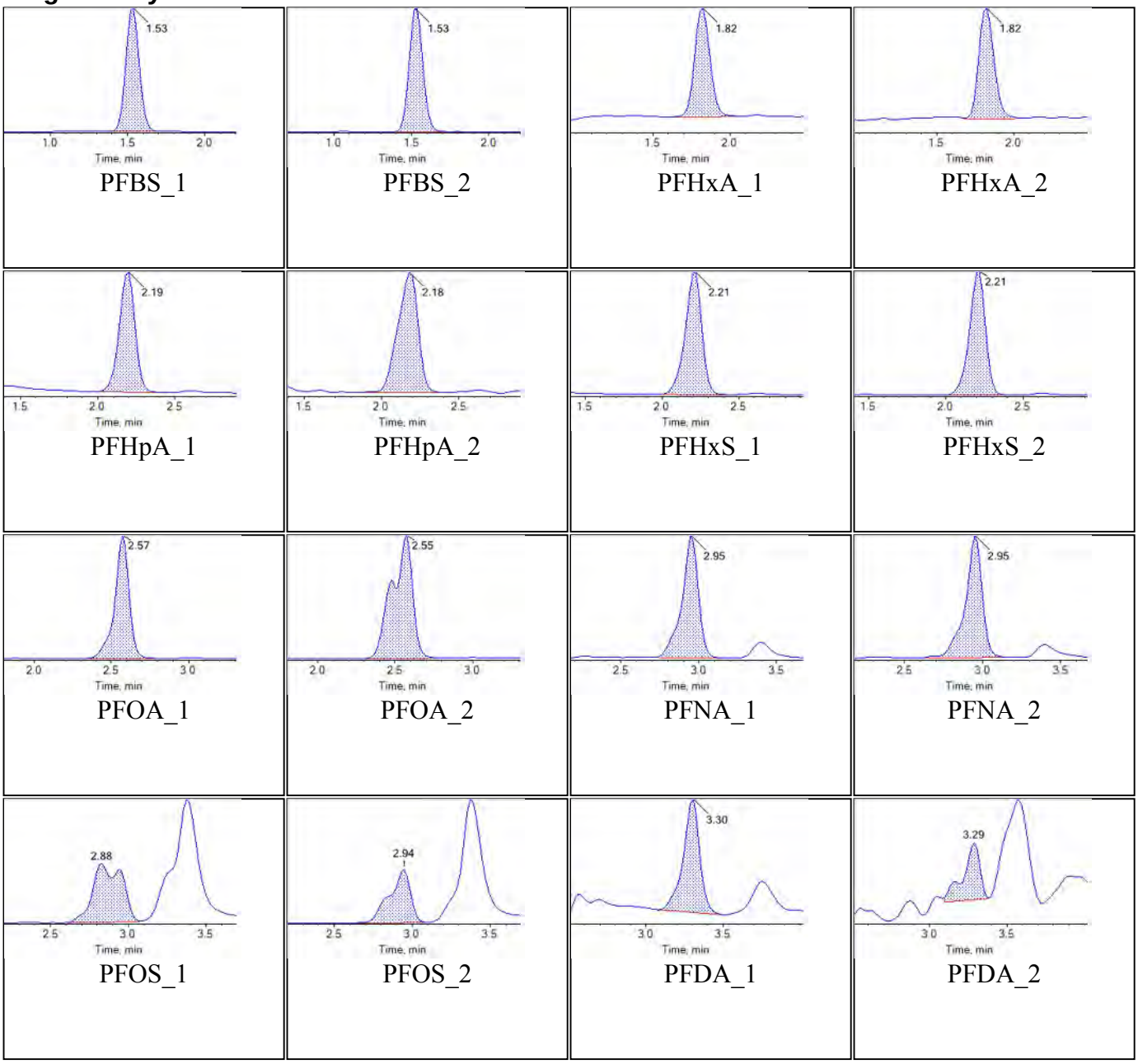
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:44 AM

Sample Name	J6277-FS(0)	**Injection Vial**	24
Sample ID	NAWC-053018-RW-164	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:03:37	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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Chromatogram Report

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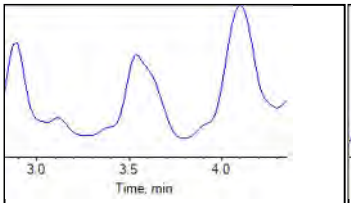
Printed: 15/06/2018 10:47:44 AM



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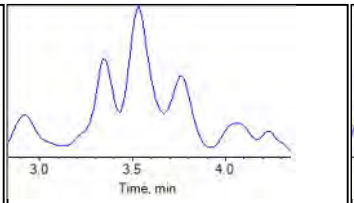

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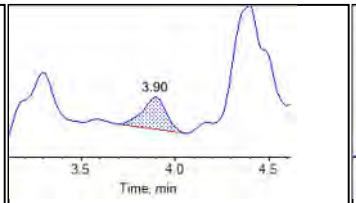

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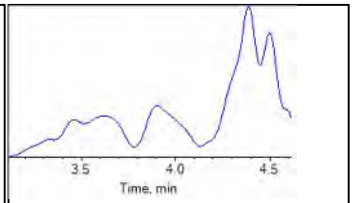

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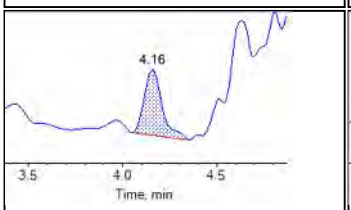

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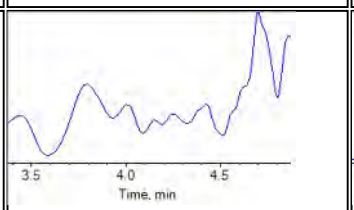

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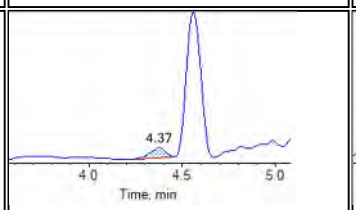
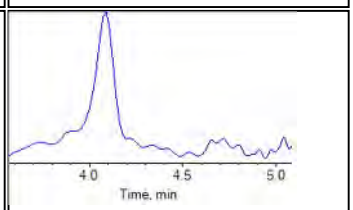


PFTeDA_1



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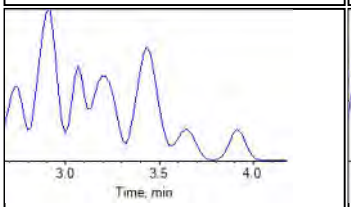
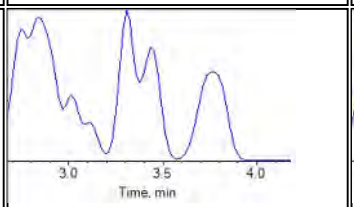


NMeFOSAA_1



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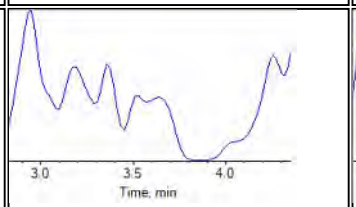
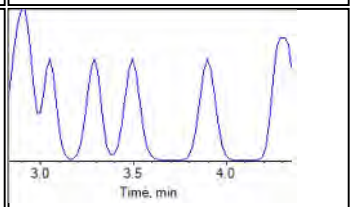
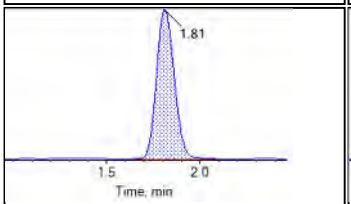


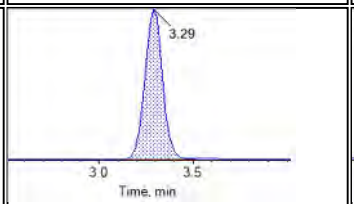
NEtFOSAA_1



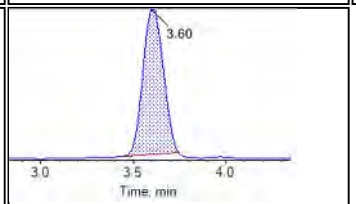
NEtFOSAA_2



13C2-PFHxA

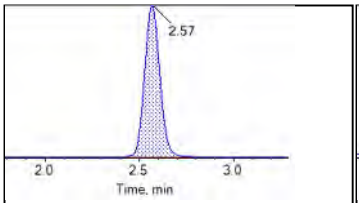


13C2-PFDA

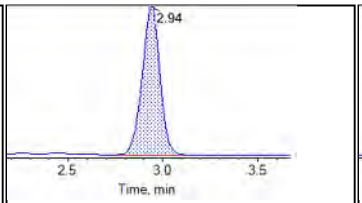


d5-EtFOSAA

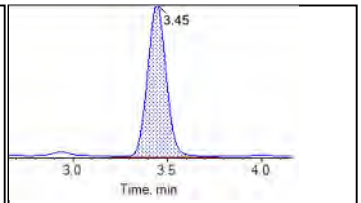
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

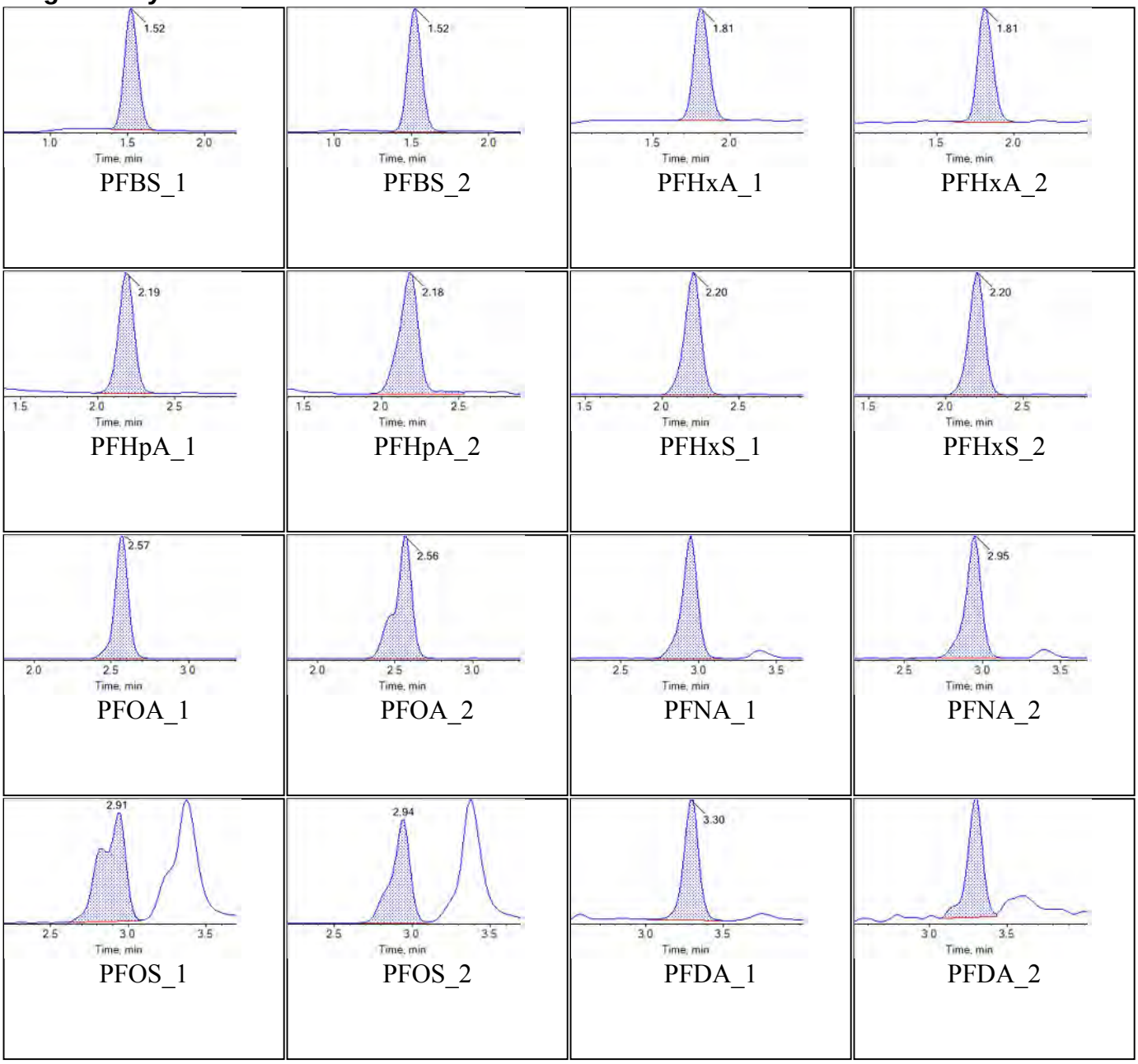
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:47 AM

Sample Name	J6279-FS(0)	**Injection Vial**	25
Sample ID	NAWC-053018-RW-292	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:12:32	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

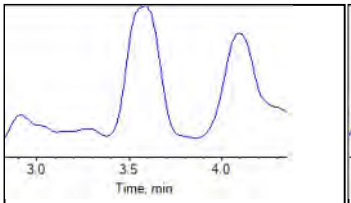
Target Analytes:



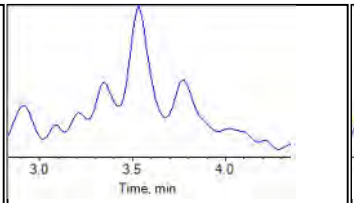
BATTELLE

Chromatogram Report

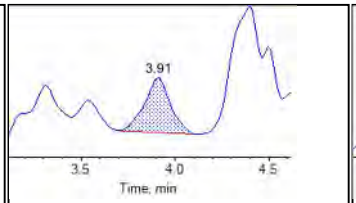
Created with Analyst Reporter
Printed: 15/06/2018 10:47:47 AM



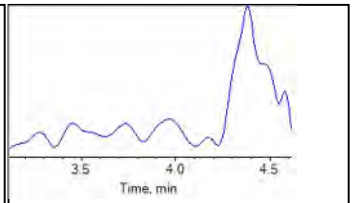
PFUnA_1



PFUnA_2



PFDoA_1



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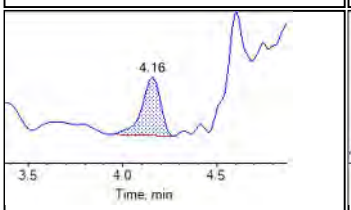
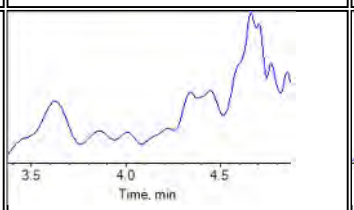


PFTrDA_1



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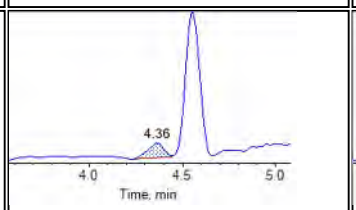

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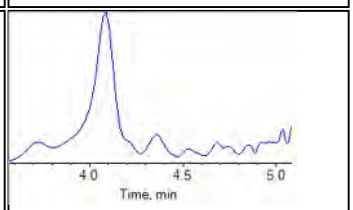

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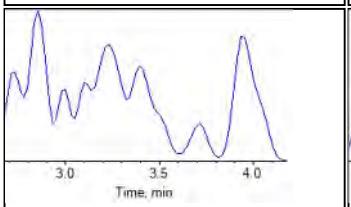
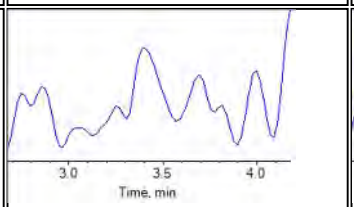


NMeFOSAA_1



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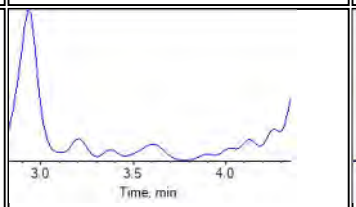
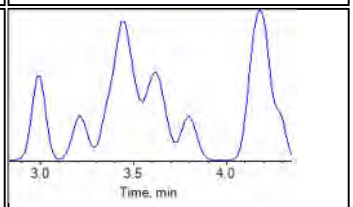


NEtFOSAA_1



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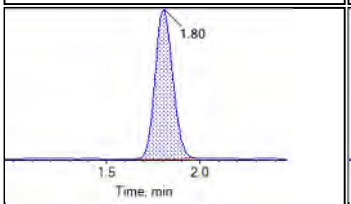
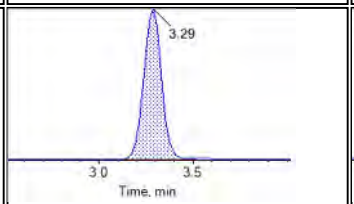


13C2-PFHxA



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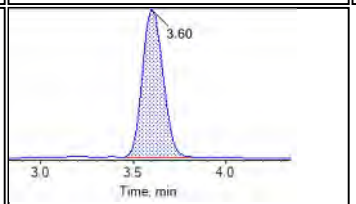
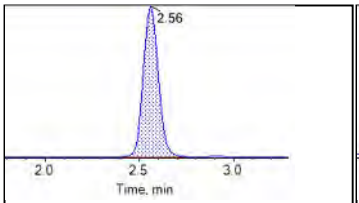


d5-EtFOSAA

Internal Standards:



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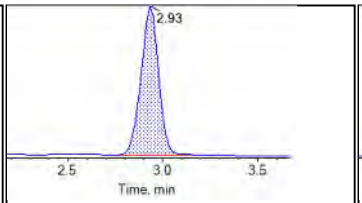
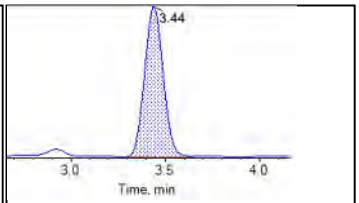


13C4-PFOS



d3-MeFOSAA

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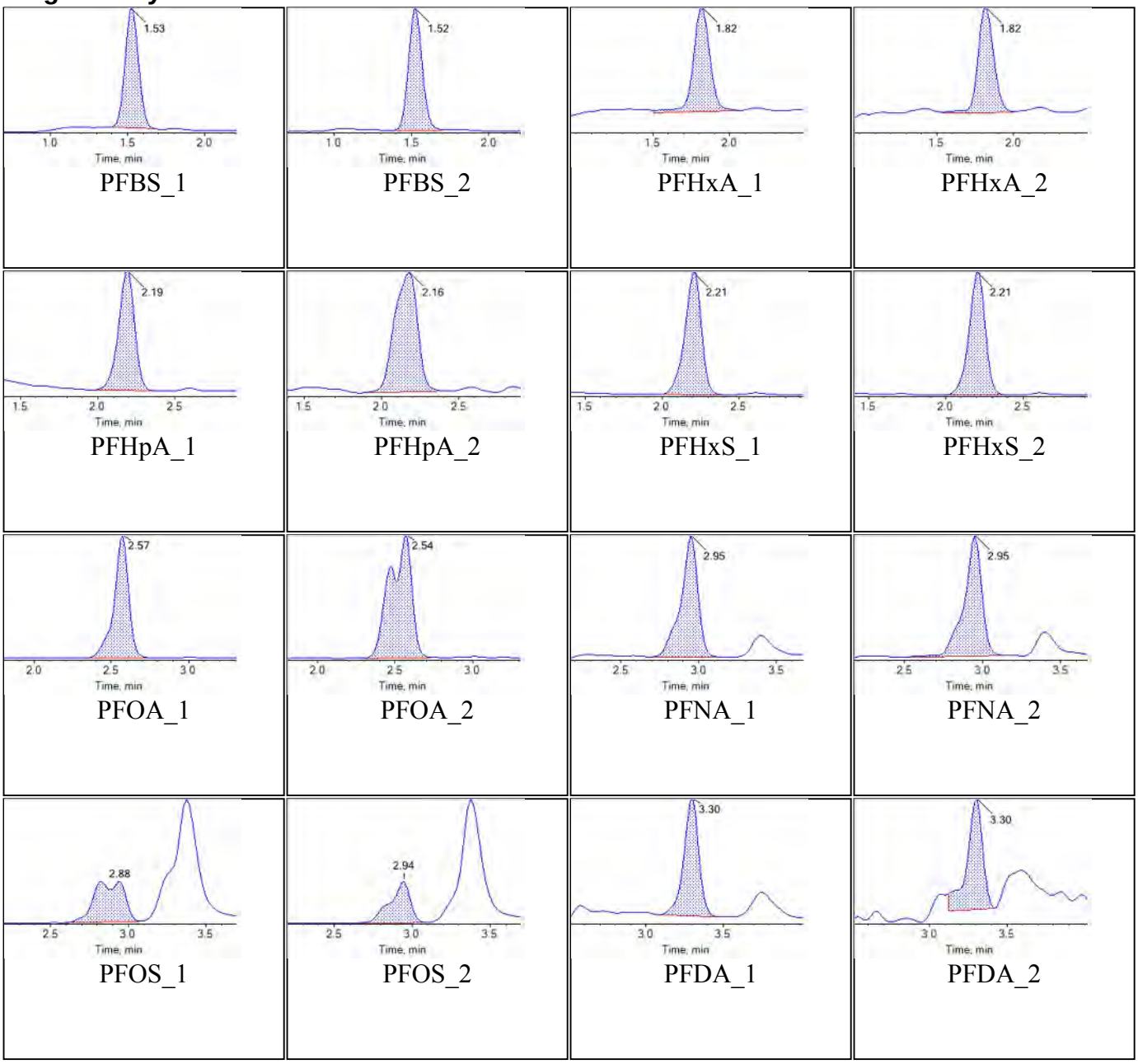
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:51 AM

Sample Name	J6281-FS(0)	**Injection Vial**	26
Sample ID	NAWC-053018-RW-271	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:21:26	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

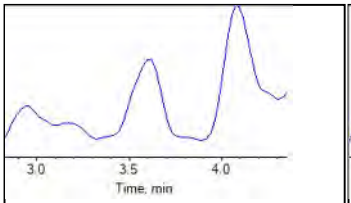
Target Analytes:



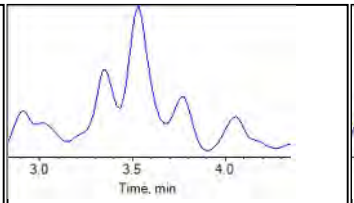
BATTELLE

Chromatogram Report

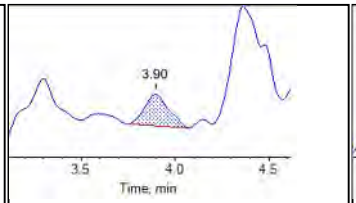
Created with Analyst Reporter
Printed: 15/06/2018 10:47:51 AM



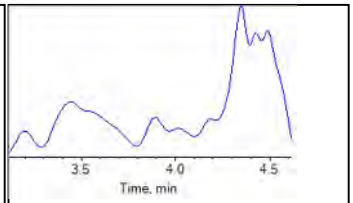
PFUnA_1



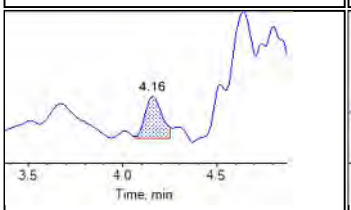
PFUnA_2



PFDoA_1



PFDoA_2



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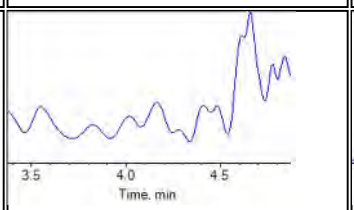
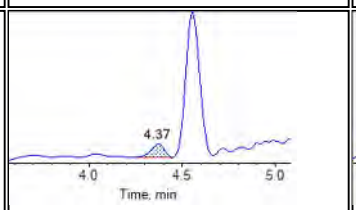
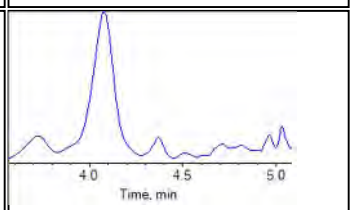


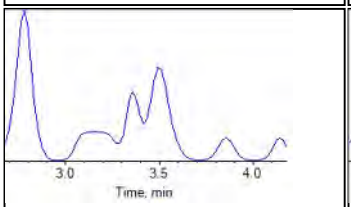
PFTrDA_2



PFTeDA_1



PFTeDA_2



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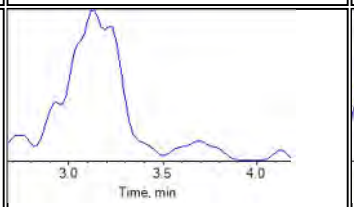

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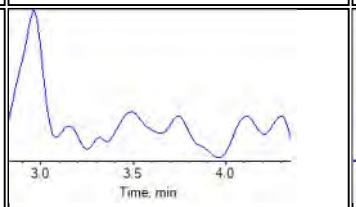
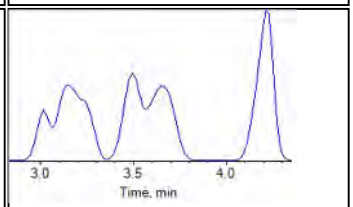
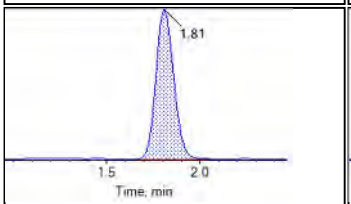


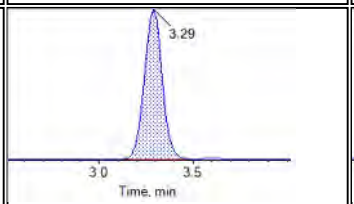
NEtFOSAA_1



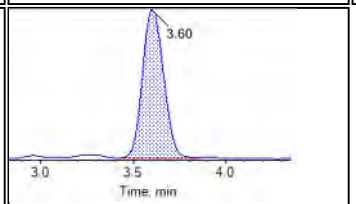
NEtFOSAA_2



13C2-PFHxA

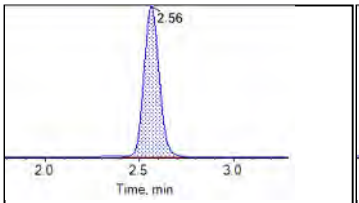


13C2-PFDA

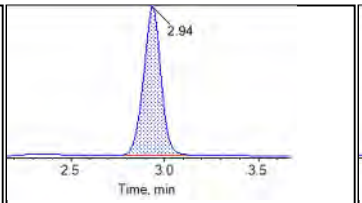


d5-EtFOSAA

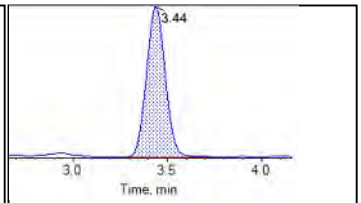
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

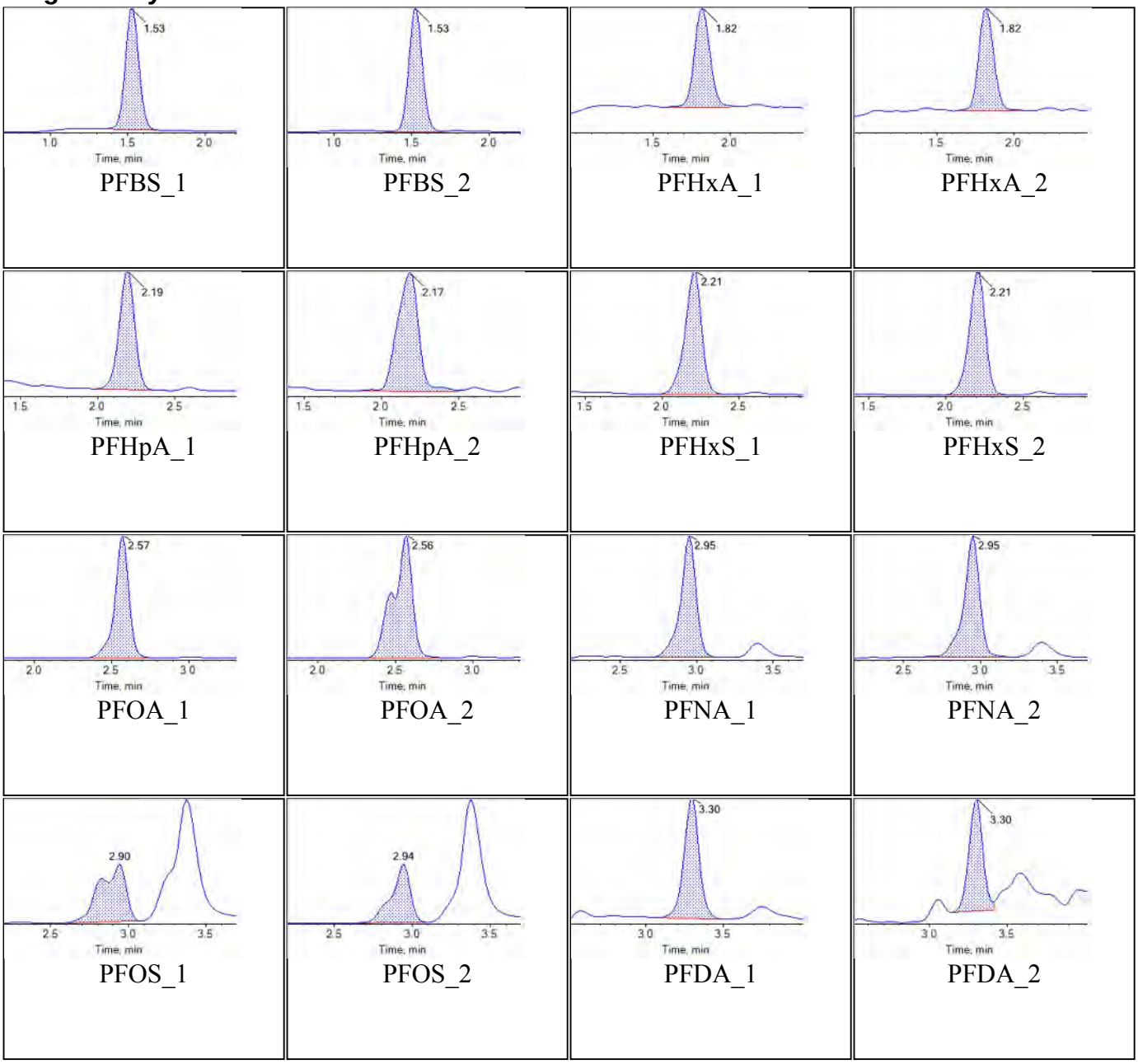
Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:54 AM

Sample Name	J6283-FS(0)	**Injection Vial**	27
Sample ID	NAWC-053018-RW-270	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:30:21	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

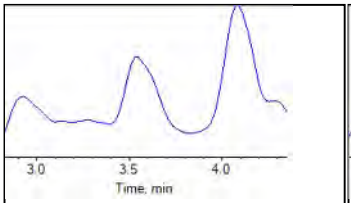
Target Analytes:



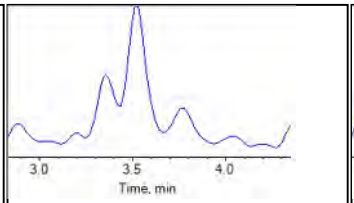
BATTELLE

Chromatogram Report

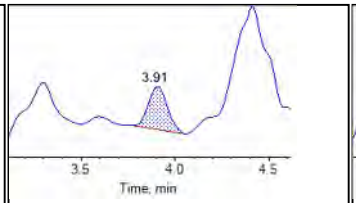
Created with Analyst Reporter
Printed: 15/06/2018 10:47:54 AM



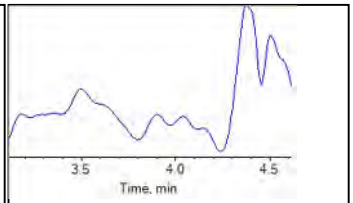
PFUnA_1



PFUnA_2



PFDoA_1



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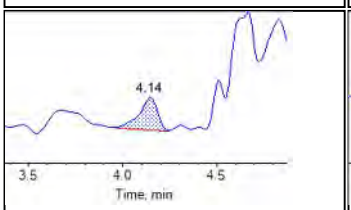
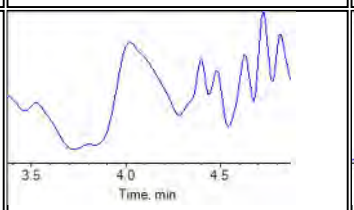


PFTrDA_1



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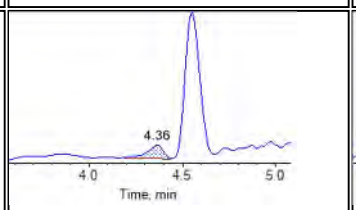
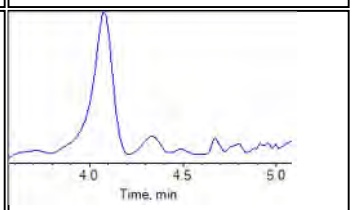


PFTeDA_1



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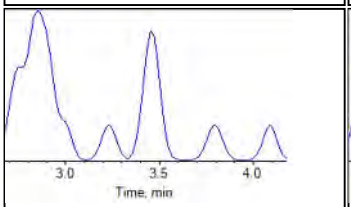
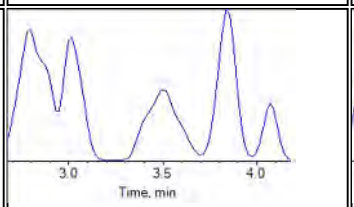


NMeFOSAA_1



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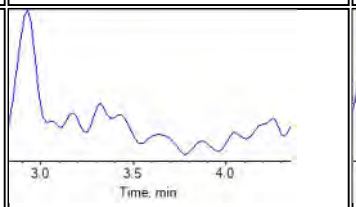

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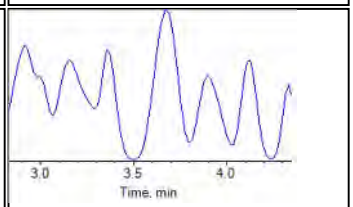

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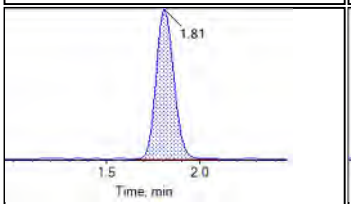
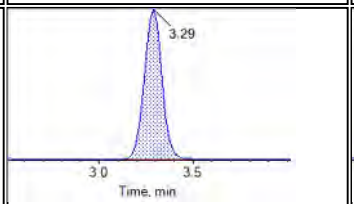
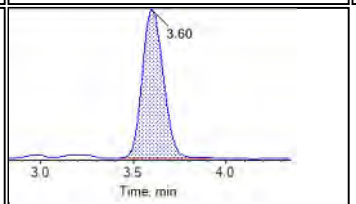


13C2-PFHxA

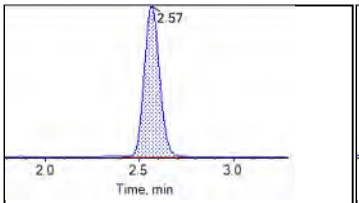


13C2-PFDA



d5-EtFOSAA

Internal Standards:



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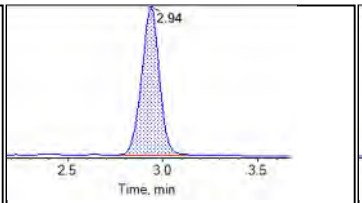
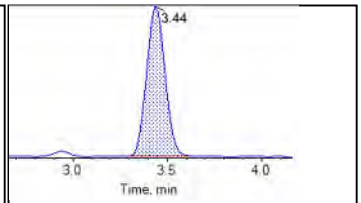


13C4-PFOS



d3-MeFOSAA

BATTELLE

Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:57 AM

Sample Name	J6285-FS(0)	**Injection Vial**	28
Sample ID	NAWC-053018-RW-196	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:39:16	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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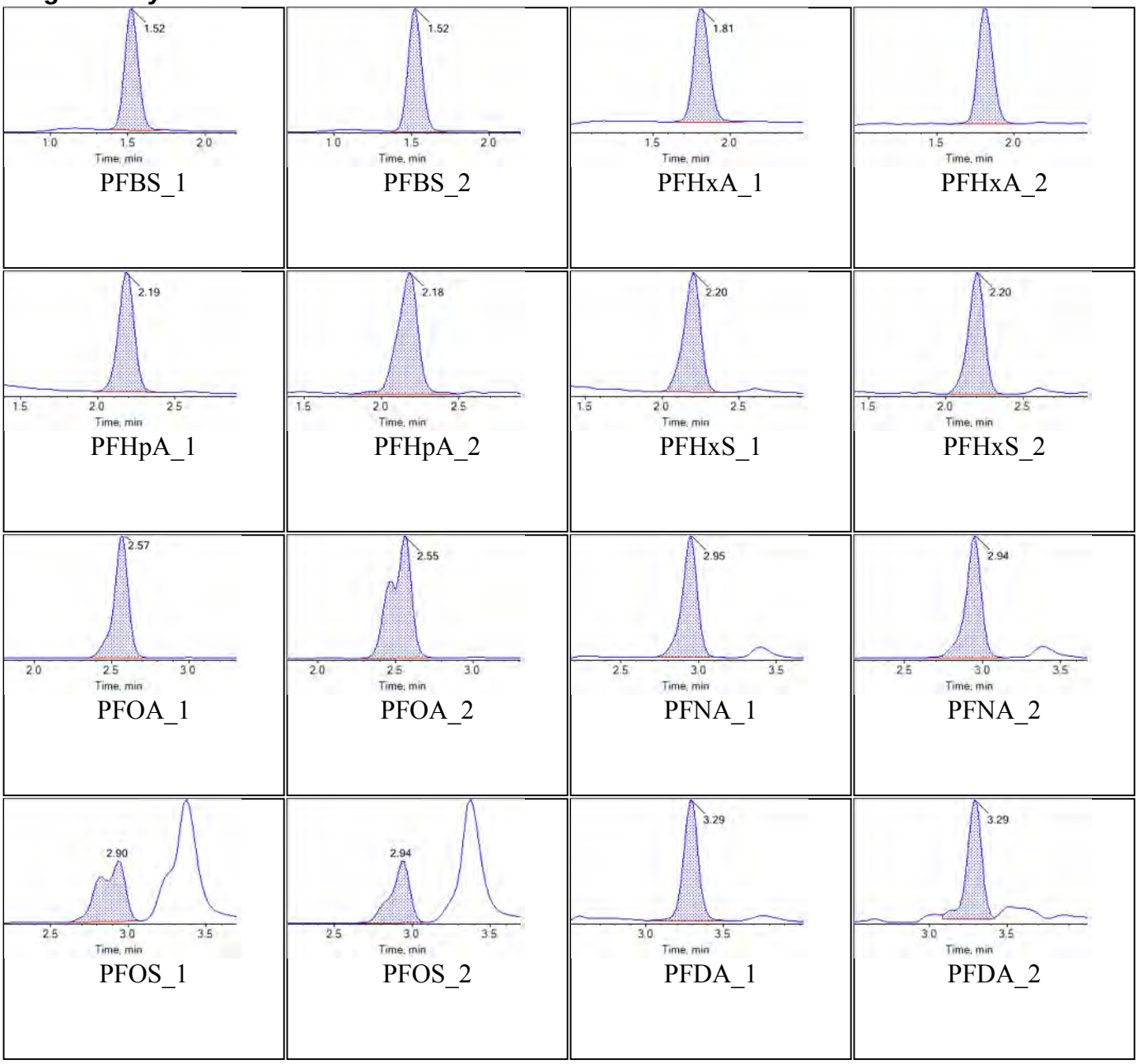
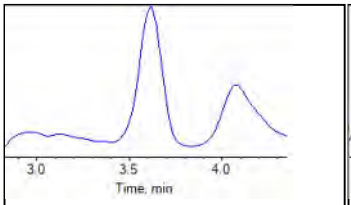


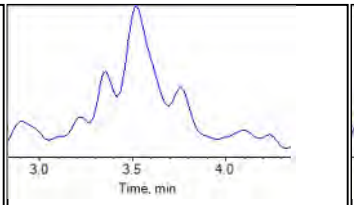
BATTELLE

Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:47:57 AM



PFUnA_1



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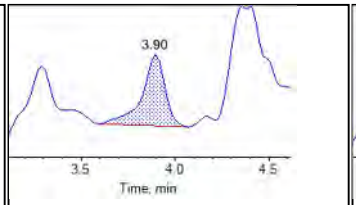

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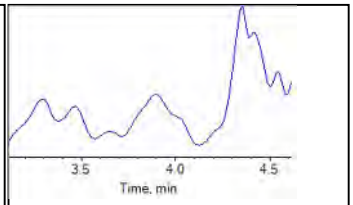

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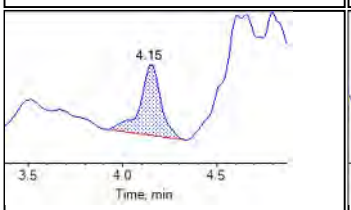

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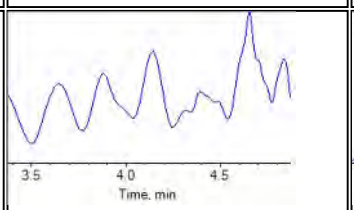

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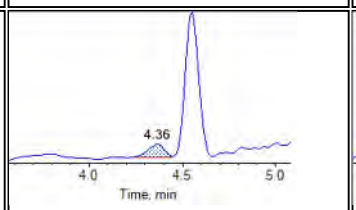

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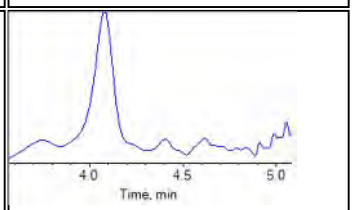

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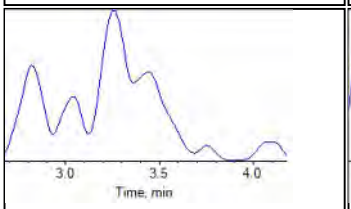
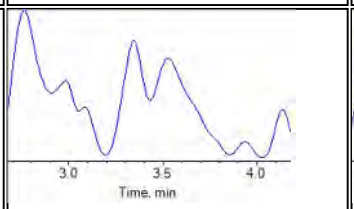
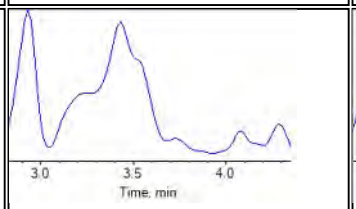


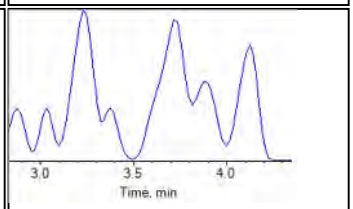
NMeFOSAA_1



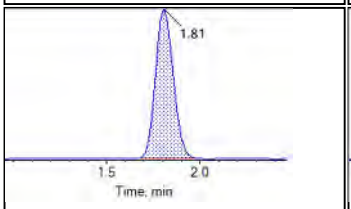
NMeFOSAA_2



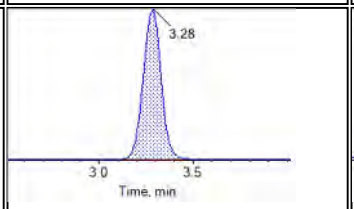
NEtFOSAA_1



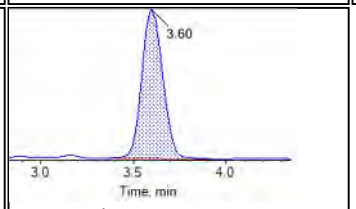
NEtFOSAA_2



13C2-PFHxA

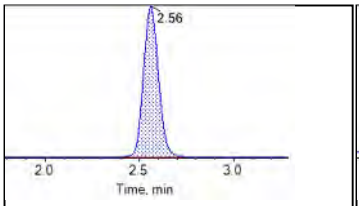


13C2-PFDA

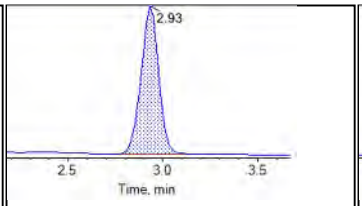


d5-EtFOSAA

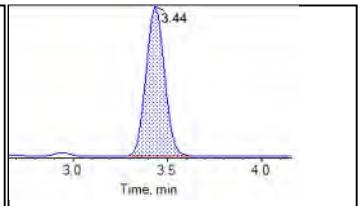
Internal Standards:



13C2-PFOA



13C4-PFOS



d3-MeFOSAA

BATTELLE

Chromatogram Report

Created with Analyst Reporter
Printed: 15/06/2018 10:48:00 AM

Sample Name	J6287-FS(0)	**Injection Vial**	29
Sample ID	NAWC-053018-RW-172	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:48:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

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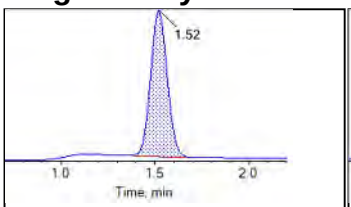
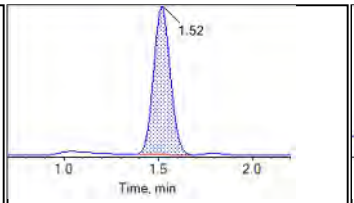
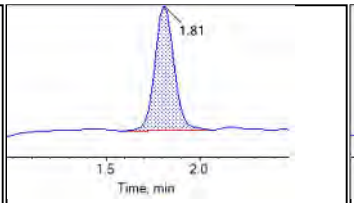


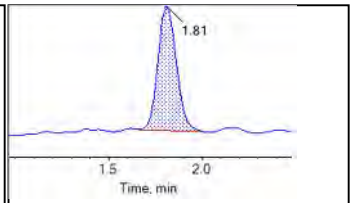
PFBS_1



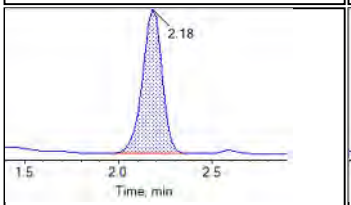
PFBS_2



PFHxA_1



PFHxA_2



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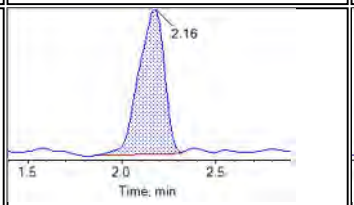

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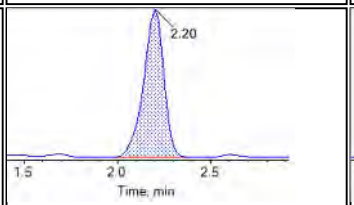
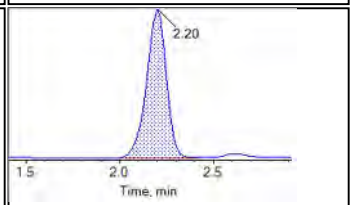
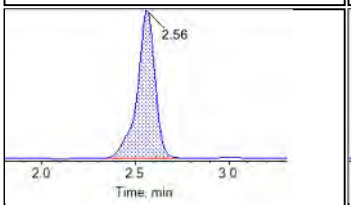


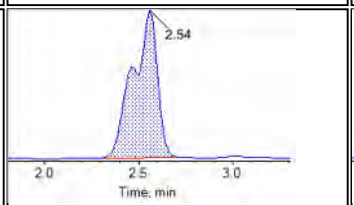
PFHxS_1



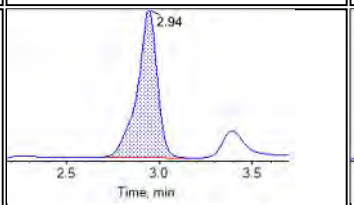
PFHxS_2



PFOA_1



PFOA_2



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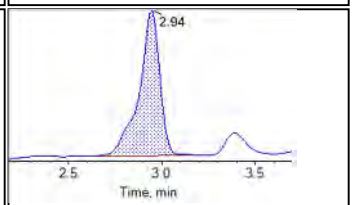
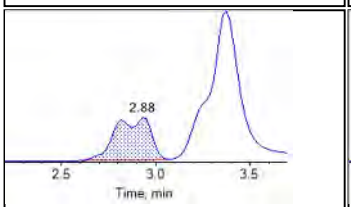
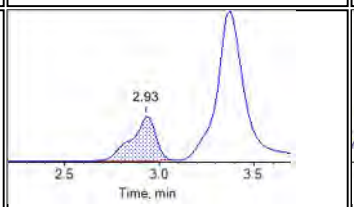


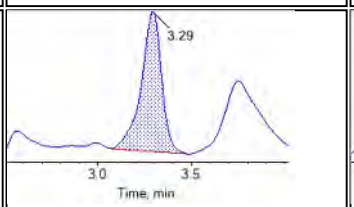
PFNA_2



PFOS_1



PFOS_2



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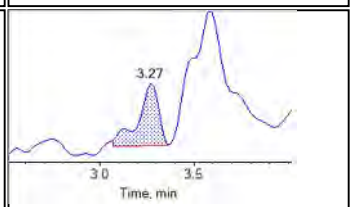

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Chromatogram Report

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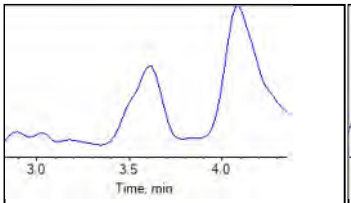

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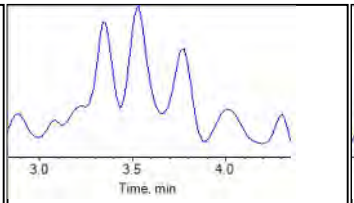

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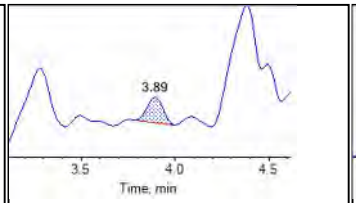

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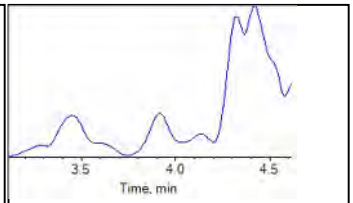

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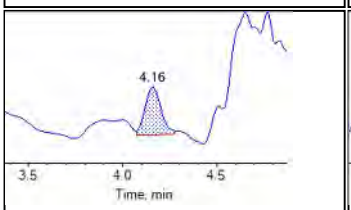

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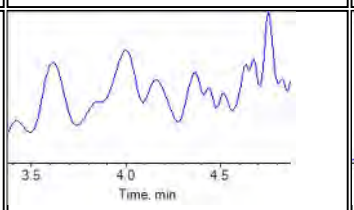

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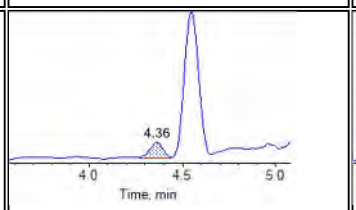

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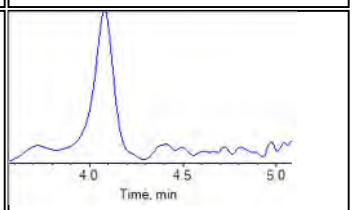

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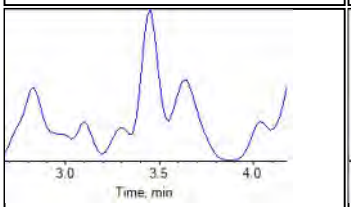

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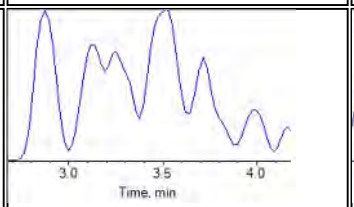

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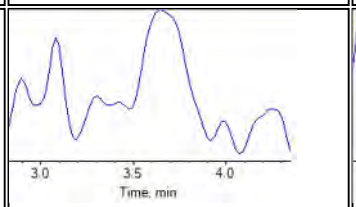

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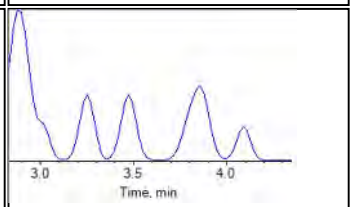

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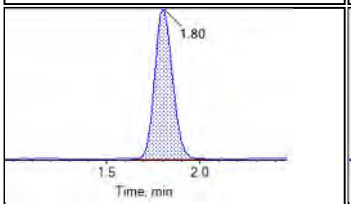

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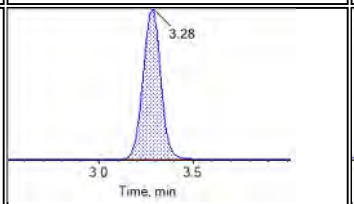

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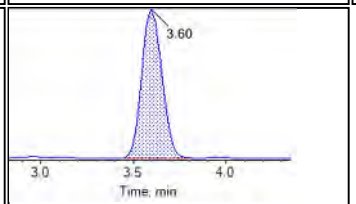

d5-EtFOSAA

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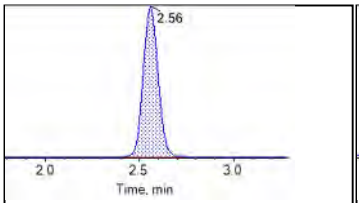

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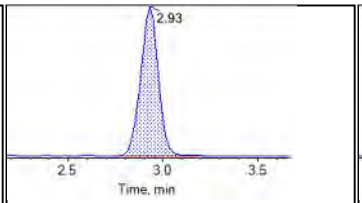

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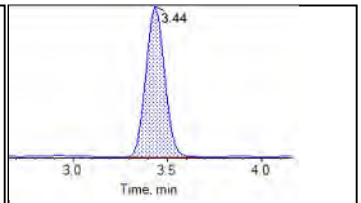

d3-MeFOSAA

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Chromatogram Report

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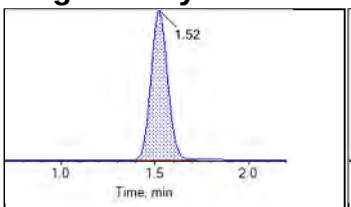
Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Chromatograms

Target Analytes:



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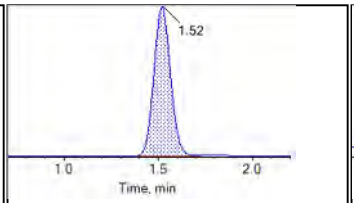

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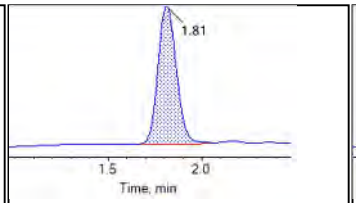

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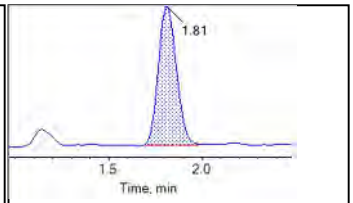

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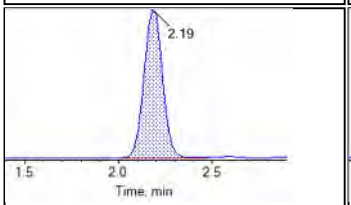

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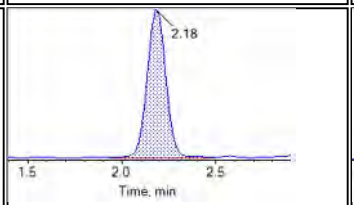

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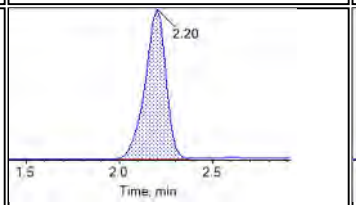

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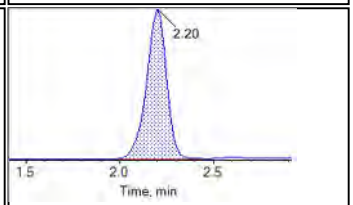

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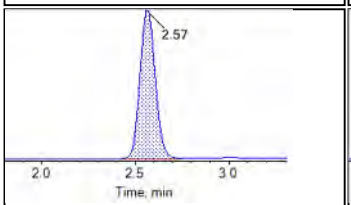

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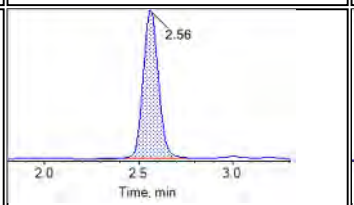

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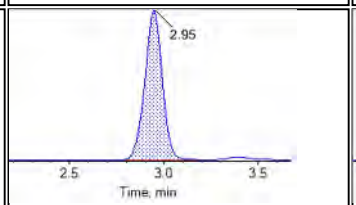

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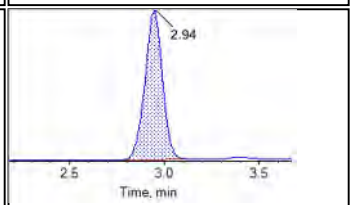

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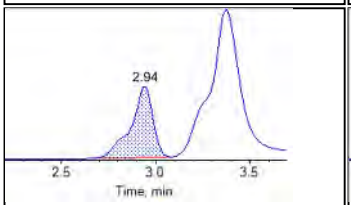

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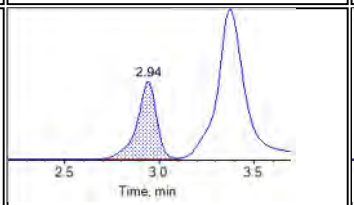

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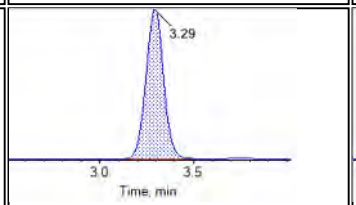

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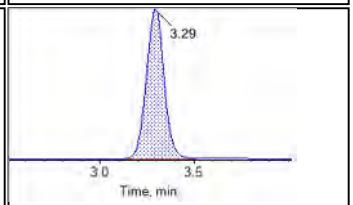

PFDA_2

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Chromatogram Report

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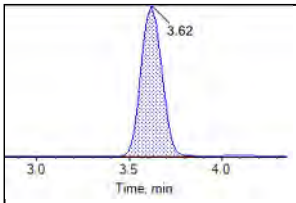

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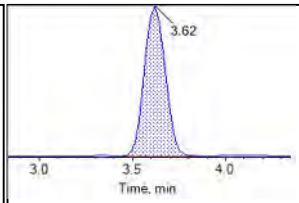

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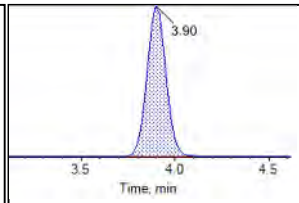

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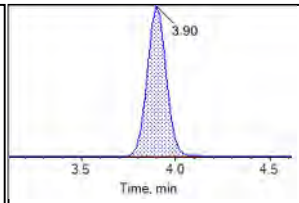

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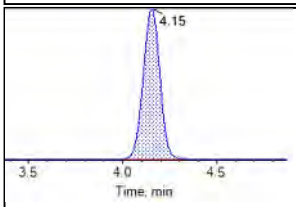

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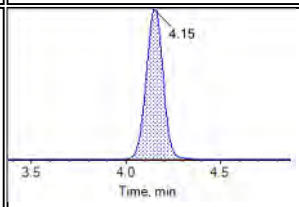

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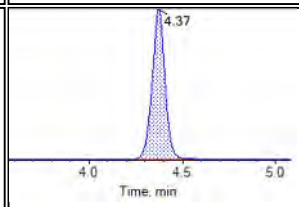

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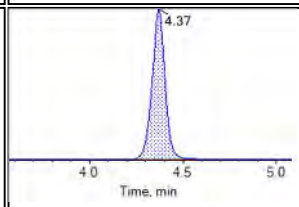

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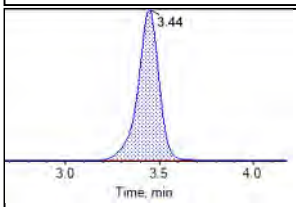

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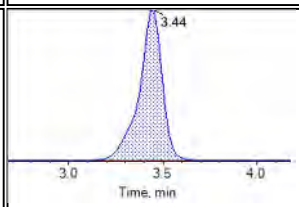

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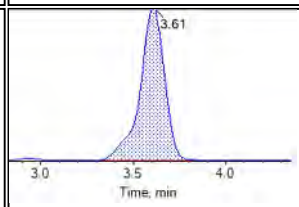

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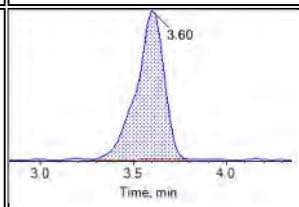

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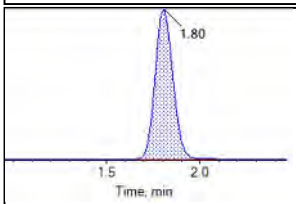

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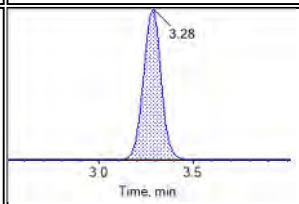

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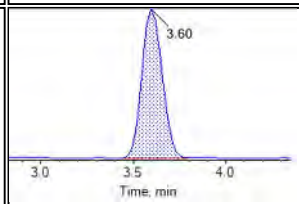

d5-EtFOSAA

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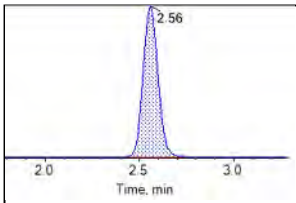
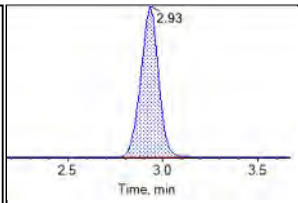
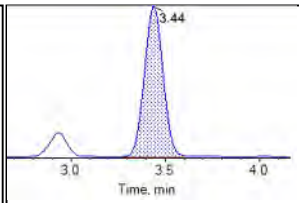


13C2-PFOA



13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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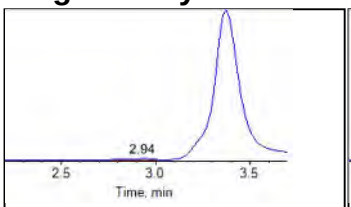
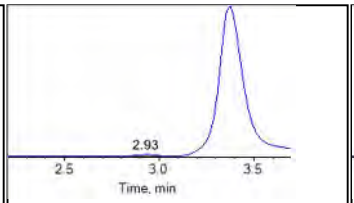
Sample Name	JV64	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T16:59:48	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

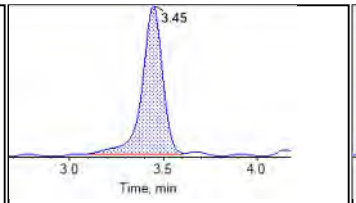
Target Analytes:



PFOS_1



PFOS_2



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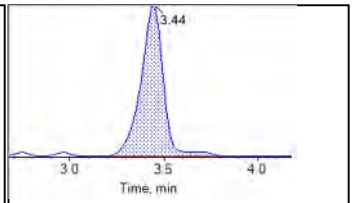

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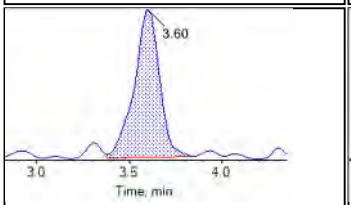
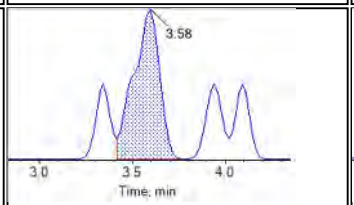
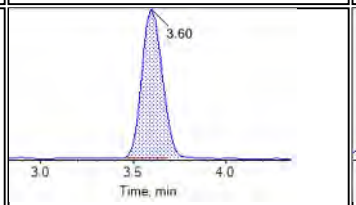


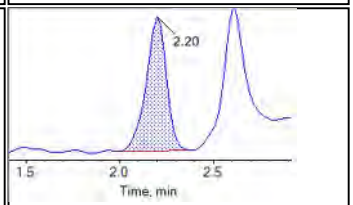
NEtFOSAA_1



NEtFOSAA_2



d5-EtFOSAA



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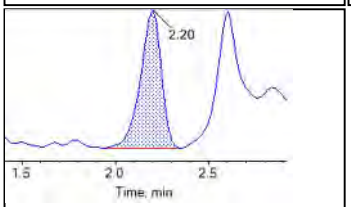

PFHxS_2

Internal Standards:

Chromatogram Report

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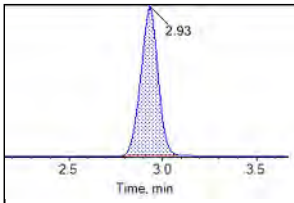
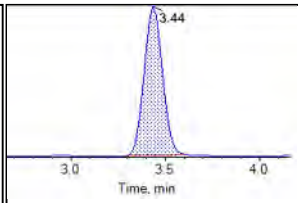


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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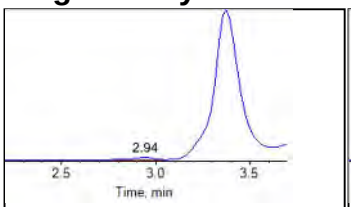
Printed: 19/06/2018 2:37:41 PM

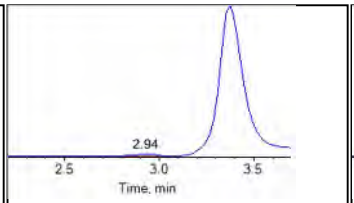
Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:08:44	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

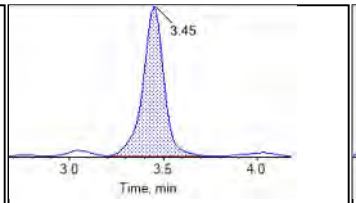
Target Analytes:



PFOS_1



PFOS_2



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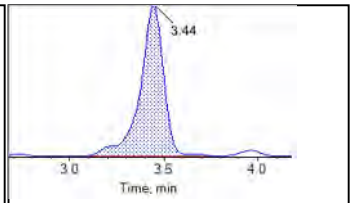

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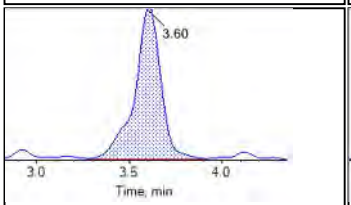

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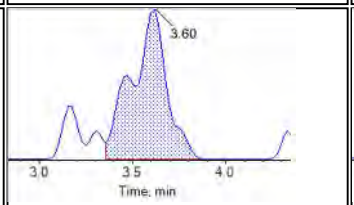

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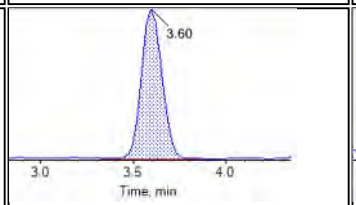
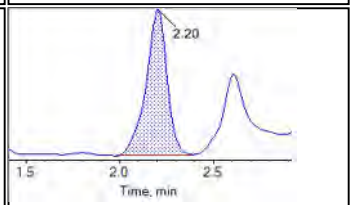
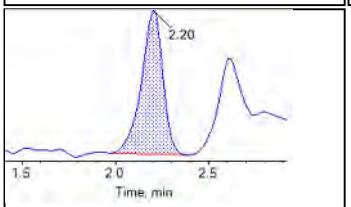


d5-EtFOSAA



PFHxS_1



PFHxS_2

Internal Standards:

Chromatogram Report

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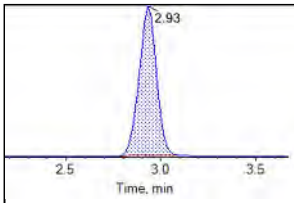
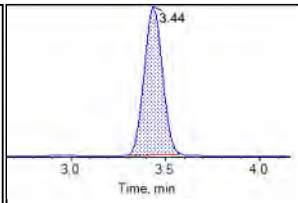


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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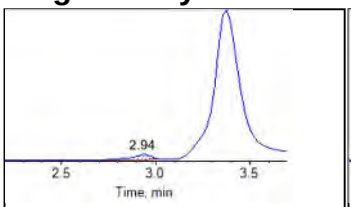
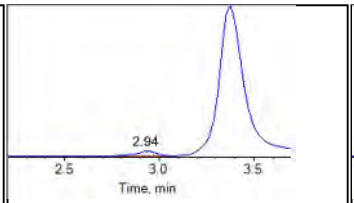
Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:17:40	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



PFOS_1



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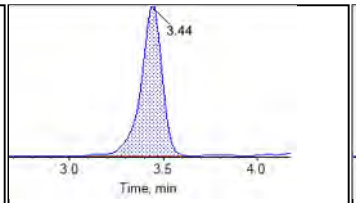

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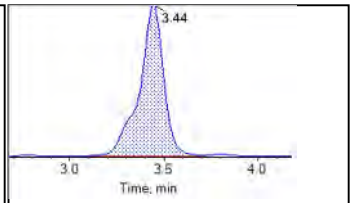
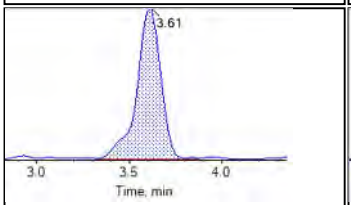
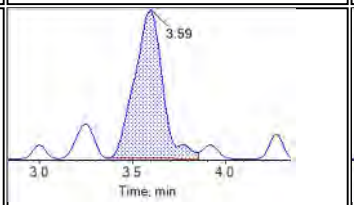


NMeFOSAA_2



NEtFOSAA_1



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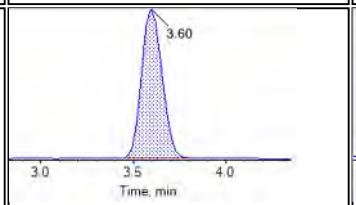
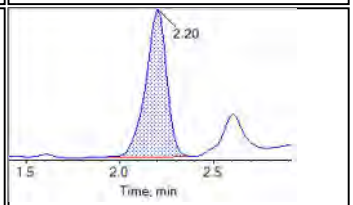
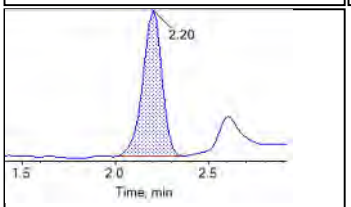


d5-EtFOSAA



PFHxS_1



PFHxS_2

Internal Standards:

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Chromatogram Report

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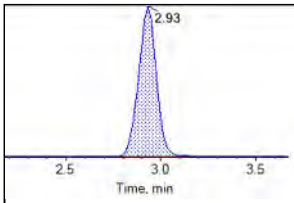
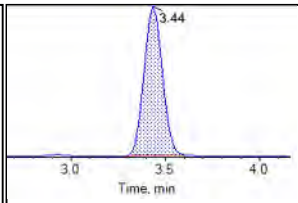


13C4-PFOS



d3-MeFOSAA

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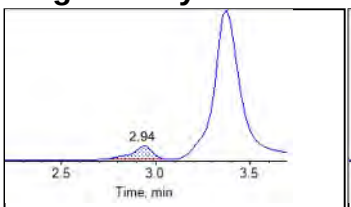
Chromatogram Report

Created with Analyst Reporter
Printed: 19/06/2018 2:37:46 PM

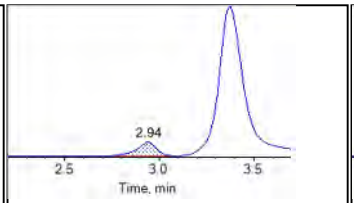
Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:26:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



PFOS_1



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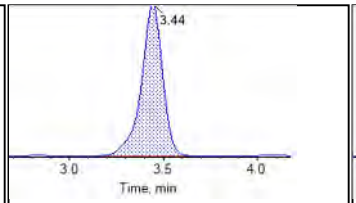
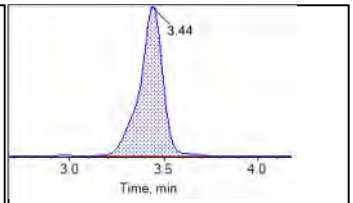


NMeFOSAA_1



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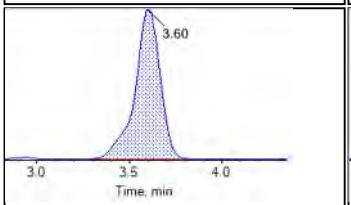
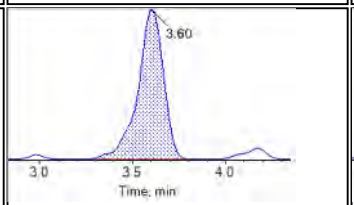


NEtFOSAA_1



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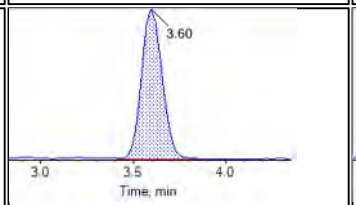
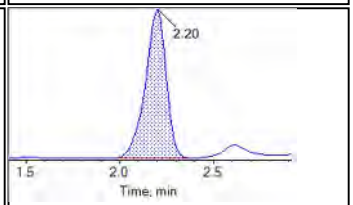
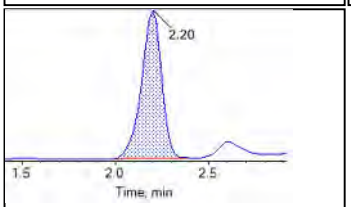


d5-EtFOSAA



PFHxS_1



PFHxS_2

Internal Standards:

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Chromatogram Report

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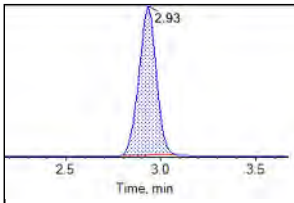
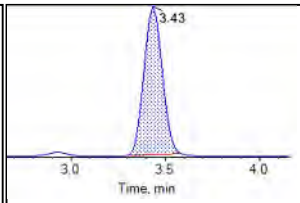


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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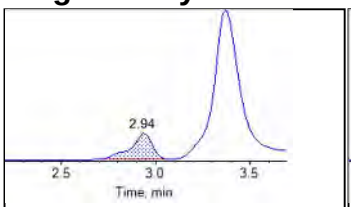
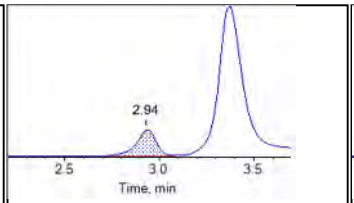
Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:35:30	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



PFOS_1



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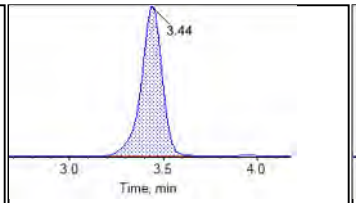

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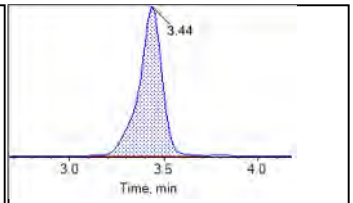

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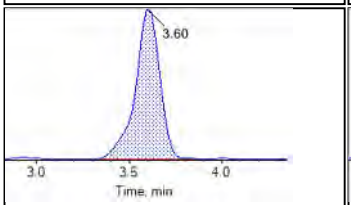

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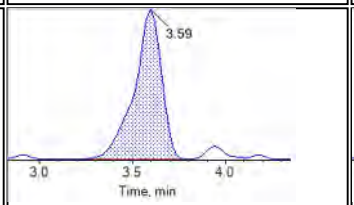

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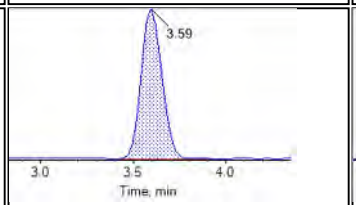
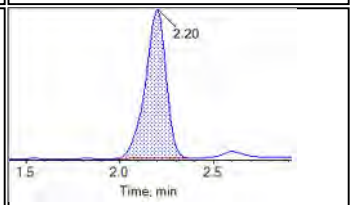


d5-EtFOSAA



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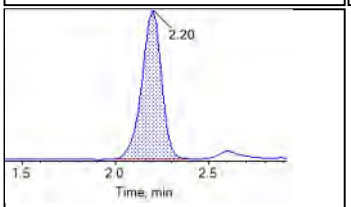

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Internal Standards:

Chromatogram Report

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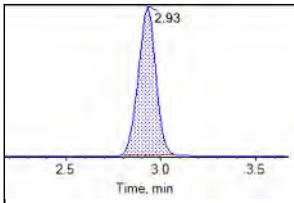
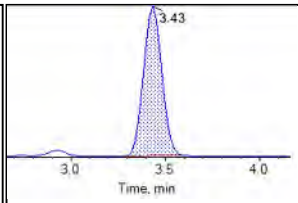


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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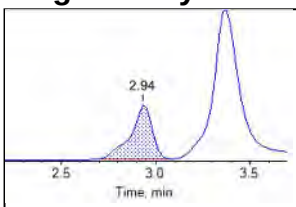
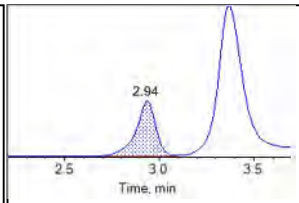
Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:44:26	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



PFOS_1



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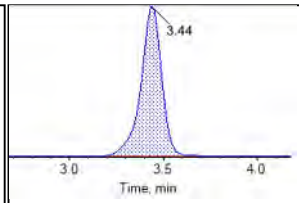

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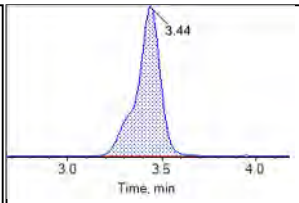

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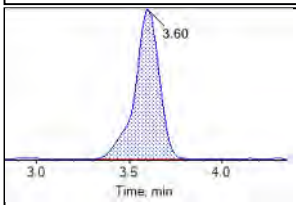

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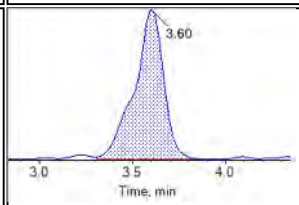

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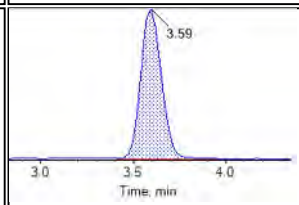
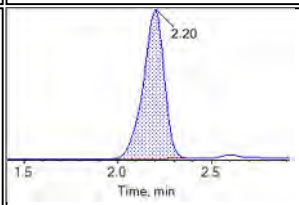
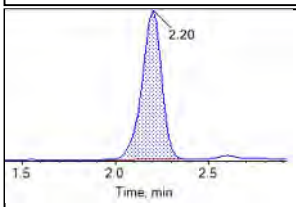


d5-EtFOSAA



PFHxS_1



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Internal Standards:

Chromatogram Report

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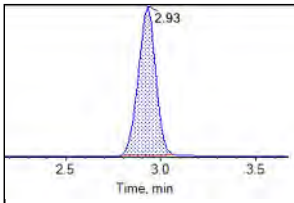
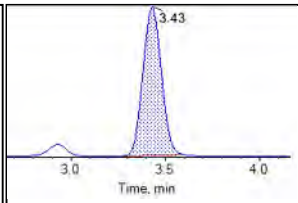


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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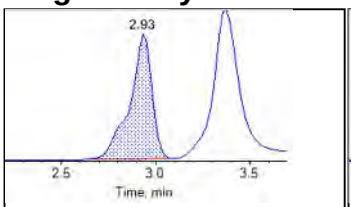
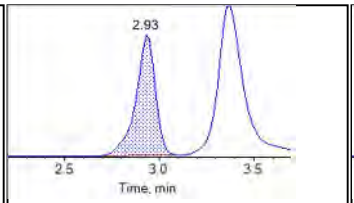
Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:53:22	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



PFOS_1



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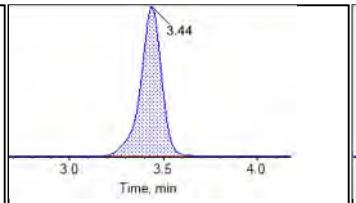

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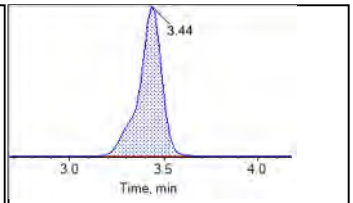

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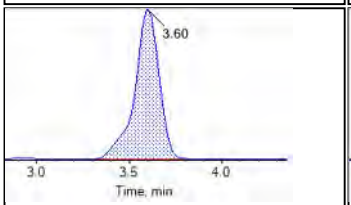

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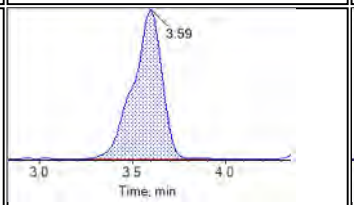

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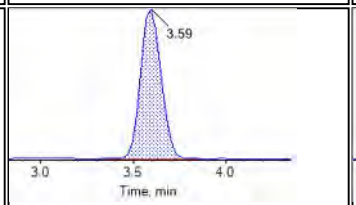
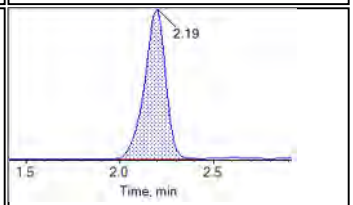


d5-EtFOSAA



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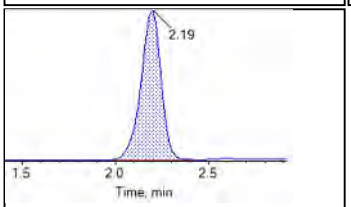

PFHxS_2

Internal Standards:

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Chromatogram Report

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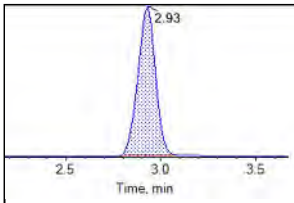
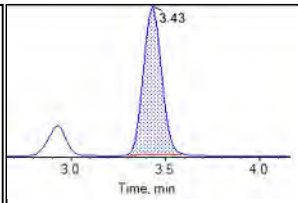


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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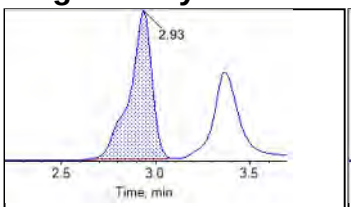
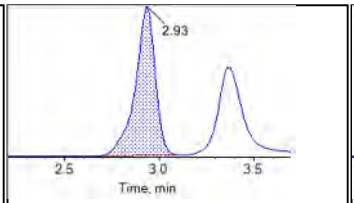
Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:02:19	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



PFOS_1



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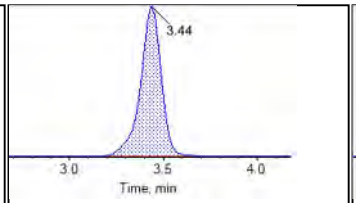

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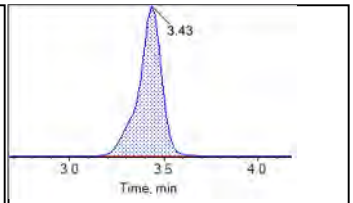

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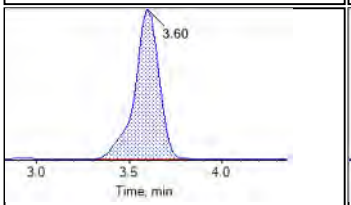
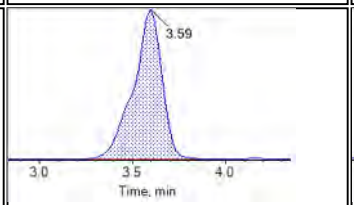


NEtFOSAA_1



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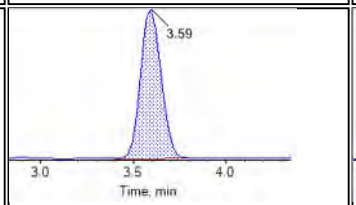
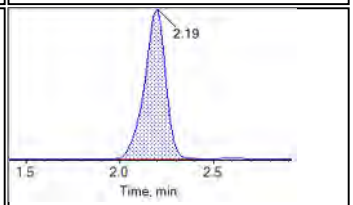
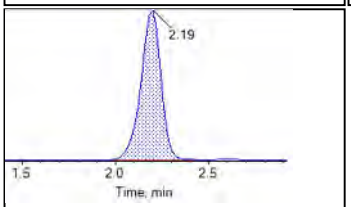


d5-EtFOSAA



PFHxS_1



PFHxS_2

Internal Standards:

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Chromatogram Report

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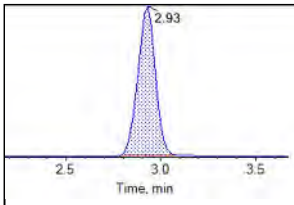
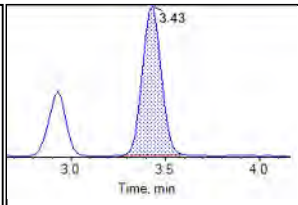


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:11:15	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

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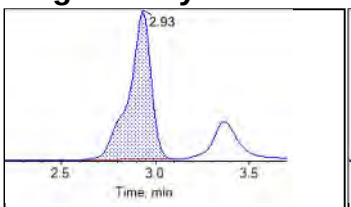

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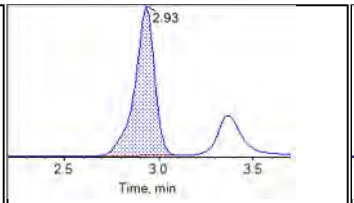

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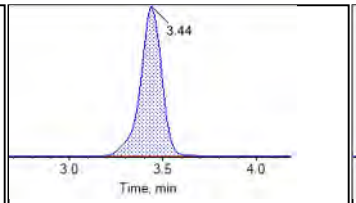

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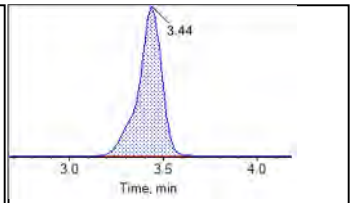

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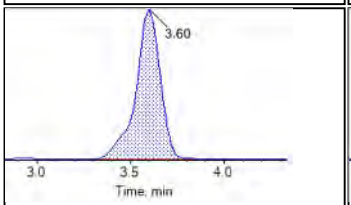
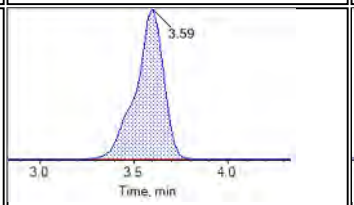


NEtFOSAA_1



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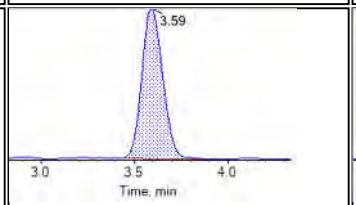
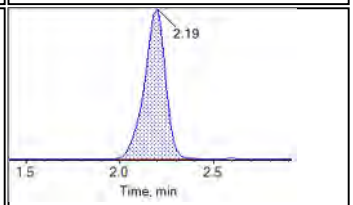


d5-EtFOSAA



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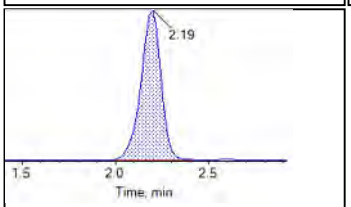

PFHxS_2

Internal Standards:

BATTELLE

Chromatogram Report

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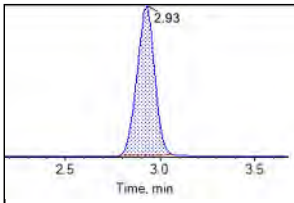
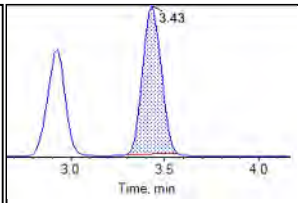


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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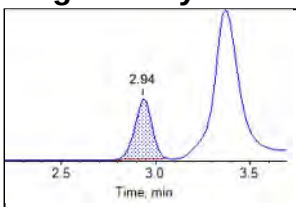
Printed: 19/06/2018 2:38:02 PM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

Target Analytes:



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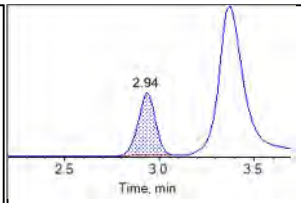

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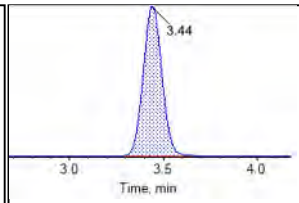

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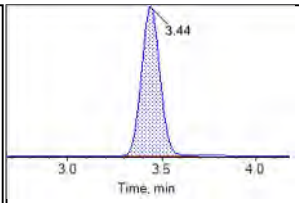

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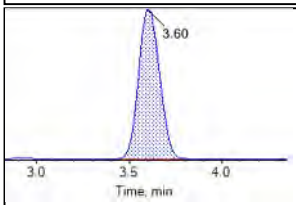

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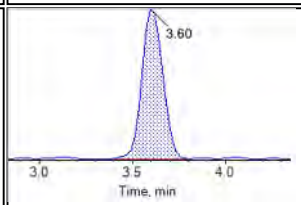

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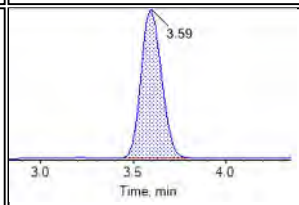
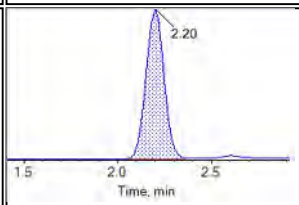


d5-EtFOSAA



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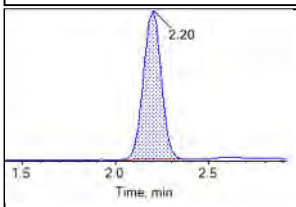

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Internal Standards:

Chromatogram Report

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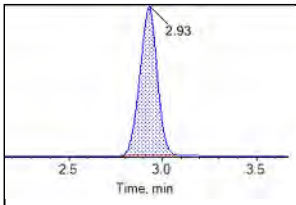
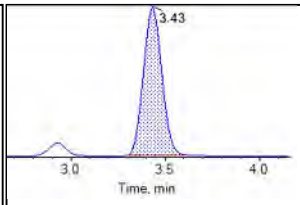


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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Sample Name	J6264-FS(0)	**Injection Vial**	18
Sample ID	WGNA-052918-RW-3978	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T19:22:36	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

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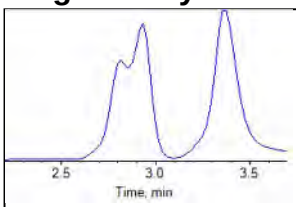

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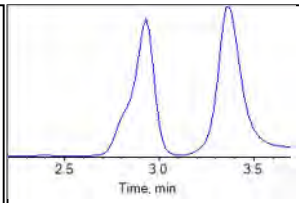

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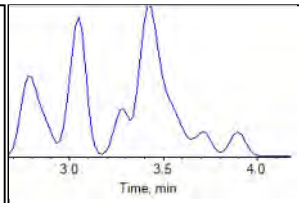

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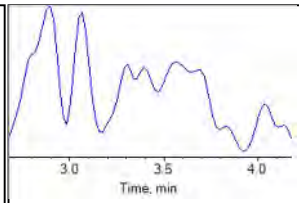

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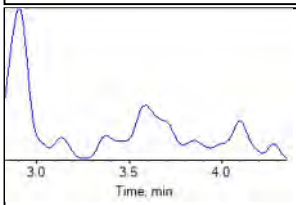

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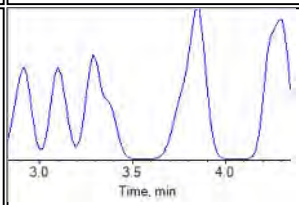

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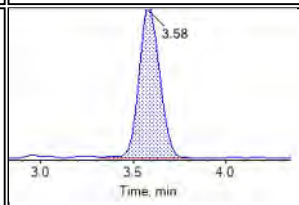
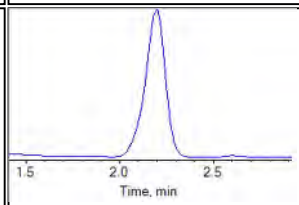


d5-EtFOSAA



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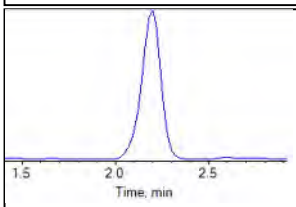

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Internal Standards:

Chromatogram Report

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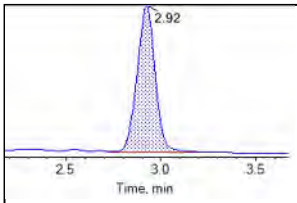
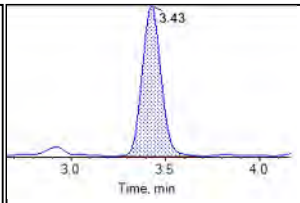


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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Printed: 19/06/2018 2:38:09 PM

Sample Name	J6273-FS-D(3)	**Injection Vial**	31
Sample ID	NAWC-050318-RW-231	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T20:16:14	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

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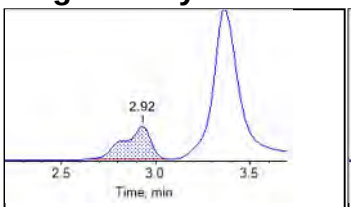

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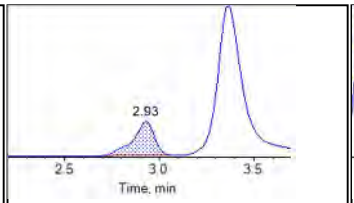

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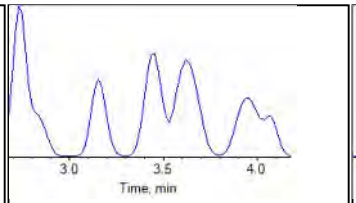

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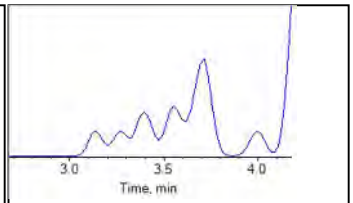

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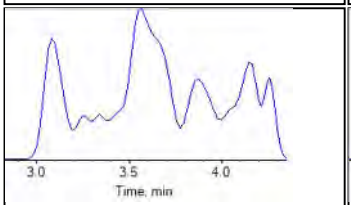

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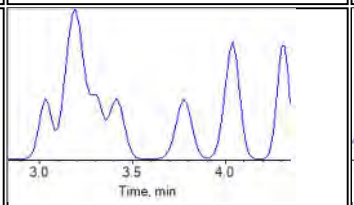

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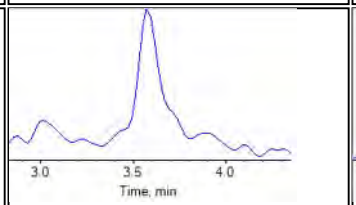
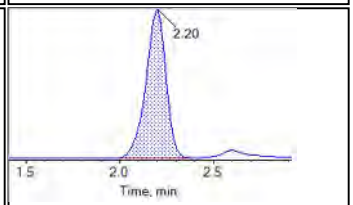


d5-EtFOSAA



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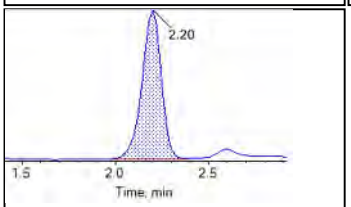

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Internal Standards:

Chromatogram Report

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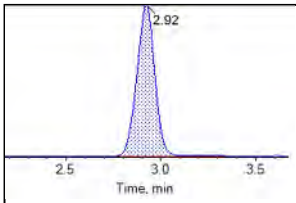
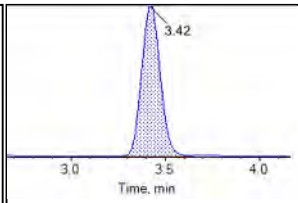


13C4-PFOS



d3-MeFOSAA

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Chromatogram Report

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Printed: 19/06/2018 2:38:11 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Chromatograms

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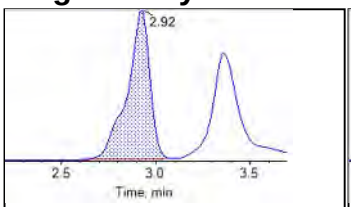

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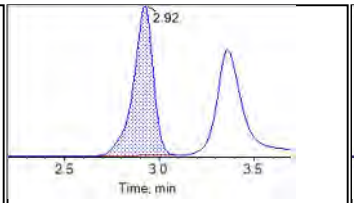

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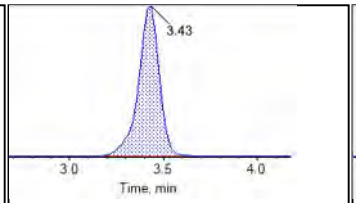

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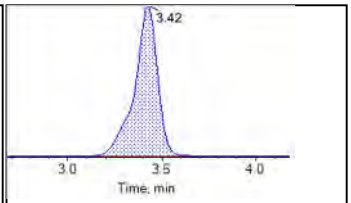

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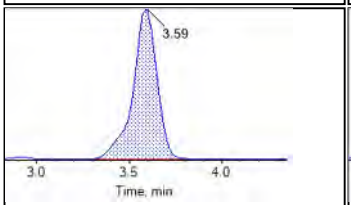

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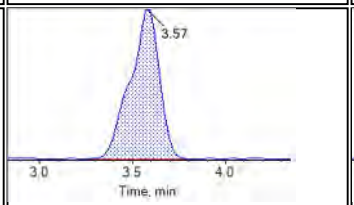

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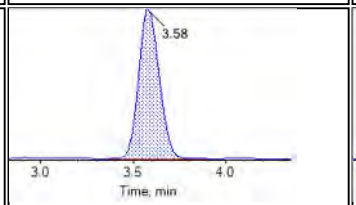
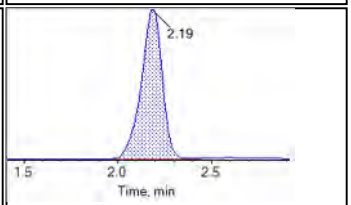


d5-EtFOSAA



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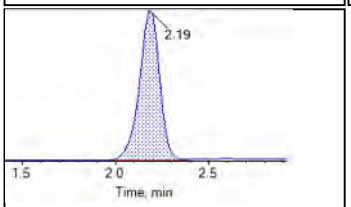

PFHxS_2

Internal Standards:

Chromatogram Report

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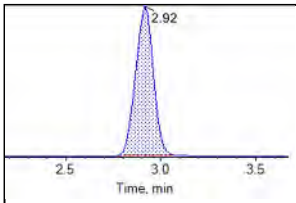
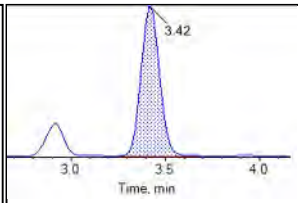


13C4-PFOS



d3-MeFOSAA

Unused Data

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3124			
Battelle ID	J6258-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.59	0.22	0.50	2.50
PFHpA	3.13	0.34	1.00	2.50
PFOA	11.54	0.38	1.00	2.50
PFNA	1.42 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	3.32	0.21	0.50	2.50
PFHxS	5.70	0.34	1.00	2.50
PFOS	10.06	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	107			
13C2-PFDA	97			
d5-EtFOSAA	104			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3493				
Battelle ID	J6260-FS				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.275				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	7.38		0.22	0.50	2.50
PFHpA	4.29		0.34	1.00	2.50
PFOA	14.59		0.38	1.00	2.50
PFNA	2.23	J	0.37	1.00	2.50
PFDA	0.39	U	0.39	1.00	2.50
PFUnA	0.38	U	0.38	1.00	2.50
PFDoA	0.42	U	0.42	1.00	2.50
PFTrDA	0.42	U	0.42	1.00	2.50
PFTeDA	0.73	U	0.73	1.50	2.50
NMeFOSAA	0.42	U	0.42	1.00	2.50
NEtFOSAA	0.44	U	0.44	1.00	2.50
PFBS	8.41		0.21	0.50	2.50
PFHxS	9.19		0.34	1.00	2.50
PFOS	17.70		0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	117				
13C2-PFDA	115				
d5-EtFOSAA	108				

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3882			
Battelle ID	J6262-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.74	0.22	0.50	2.50
PFHpA	4.41	0.34	1.00	2.50
PFOA	8.47	0.38	1.00	2.50
PFNA	3.04	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	4.09	0.21	0.50	2.50
PFHxS	9.46	0.34	1.00	2.50
PFOS	25.23	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	103			
13C2-PFDA	93			
d5-EtFOSAA	103			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3978			
Battelle ID	J6264-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.86	0.22	0.50	2.50
PFHpA	4.86	0.34	1.00	2.50
PFOA	11.26	0.38	1.00	2.50
PFNA	2.34 J	0.37	1.00	2.50
PFDA	0.69 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	4.11	0.21	0.50	2.50
PFHxS	6.64	0.34	1.00	2.50
PFOS	14.01	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	103			
d5-EtFOSAA	91			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-052918-RW-161			
Battelle ID	J6266-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	11.56	0.22	0.50	2.50
PFHpA	6.13	0.34	1.00	2.50
PFOA	18.42	0.38	1.00	2.50
PFNA	3.39	0.37	1.00	2.50
PFDA	0.58 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.62	0.21	0.50	2.50
PFHxS	13.47	0.34	1.00	2.50
PFOS	35.04	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	100			
d5-EtFOSAA	113			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3876			
Battelle ID	J6270-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.58	0.22	0.50	2.50
PFHpA	2.84	0.34	1.00	2.50
PFOA	10.65	0.38	1.00	2.50
PFNA	1.54 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.96	0.21	0.50	2.50
PFHxS	4.42	0.34	1.00	2.50
PFOS	9.86	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	101			
d5-EtFOSAA	111			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-DUP-37			
Battelle ID	J6272-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.56	0.22	0.50	2.50
PFHpA	3.03	0.34	1.00	2.50
PFOA	10.75	0.38	1.00	2.50
PFNA	1.78 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.96	0.21	0.50	2.50
PFHxS	4.84	0.34	1.00	2.50
PFOS	10.28	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	110			
d5-EtFOSAA	109			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-231				
Battelle ID	J6273-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.285				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	9.35		0.22	0.50	2.50
PFHpA	4.11		0.34	1.00	2.50
PFOA	10.51		0.38	1.00	2.50
PFNA	1.76	J	0.37	1.00	2.50
PFDA	0.39	U	0.39	1.00	2.50
PFUnA	0.38	U	0.38	1.00	2.50
PFDoA	0.42	U	0.42	1.00	2.50
PFTrDA	0.42	U	0.42	1.00	2.50
PFTeDA	0.73	U	0.73	1.50	2.50
NMeFOSAA	0.42	U	0.42	1.00	2.50
NEtFOSAA	0.44	U	0.44	1.00	2.50
PFBS	5.78		0.21	0.50	2.50
PFHxS	37.20	D	0.34	1.00	2.50
PFOS	57.09	D	0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	107				
13C2-PFDA	97				
d5-EtFOSAA	88				

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3933			
Battelle ID	J6275-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	9.95	0.22	0.50	2.50
PFHpA	6.85	0.34	1.00	2.50
PFOA	18.92	0.38	1.00	2.50
PFNA	2.35 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.61	0.21	0.50	2.50
PFHxS	4.80	0.34	1.00	2.50
PFOS	19.86	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	111			
13C2-PFDA	103			
d5-EtFOSAA	103			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-164				
Battelle ID	J6277-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	8.14		0.22	0.50	2.50
PFHpA	5.55		0.34	1.00	2.50
PFOA	18.79		0.38	1.00	2.50
PFNA	2.18	J	0.37	1.00	2.50
PFDA	0.39	U	0.39	1.00	2.50
PFUnA	0.38	U	0.38	1.00	2.50
PFDoA	0.42	U	0.42	1.00	2.50
PFTrDA	0.42	U	0.42	1.00	2.50
PFTeDA	0.73	U	0.73	1.50	2.50
NMeFOSAA	0.42	U	0.42	1.00	2.50
NEtFOSAA	0.44	U	0.44	1.00	2.50
PFBS	29.34		0.21	0.50	2.50
PFHxS	6.74		0.34	1.00	2.50
PFOS	14.52		0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	119				
13C2-PFDA	105				
d5-EtFOSAA	126				

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-292			
Battelle ID	J6279-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	10.15	0.22	0.50	2.50
PFHpA	6.81	0.34	1.00	2.50
PFOA	24.37	0.38	1.00	2.50
PFNA	3.39	0.37	1.00	2.50
PFDA	0.46 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	5.60	0.21	0.50	2.50
PFHxS	7.86	0.34	1.00	2.50
PFOS	20.09	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	116			
13C2-PFDA	93			
d5-EtFOSAA	107			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-271			
Battelle ID	J6281-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.47	0.22	0.50	2.50
PFHpA	3.38	0.34	1.00	2.50
PFOA	12.38	0.38	1.00	2.50
PFNA	1.32 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	3.10	0.21	0.50	2.50
PFHxS	5.44	0.34	1.00	2.50
PFOS	10.03	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	106			
13C2-PFDA	103			
d5-EtFOSAA	107			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-270			
Battelle ID	J6283-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.51	0.22	0.50	2.50
PFHpA	3.35	0.34	1.00	2.50
PFOA	10.97	0.38	1.00	2.50
PFNA	1.80 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	6.24	0.21	0.50	2.50
PFHxS	4.45	0.34	1.00	2.50
PFOS	12.57	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	99			
d5-EtFOSAA	113			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-196			
Battelle ID	J6285-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	13.18	0.22	0.50	2.50
PFHpA	6.70	0.34	1.00	2.50
PFOA	15.77	0.38	1.00	2.50
PFNA	2.27 J	0.37	1.00	2.50
PFDA	0.69 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.55	0.21	0.50	2.50
PFHxS	2.31 J	0.34	1.00	2.50
PFOS	12.20	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	108			
13C2-PFDA	97			
d5-EtFOSAA	108			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-172			
Battelle ID	J6287-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.90	0.22	0.50	2.50
PFHpA	3.31	0.34	1.00	2.50
PFOA	10.26	0.38	1.00	2.50
PFNA	1.08 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.83	0.21	0.50	2.50
PFHxS	3.67	0.34	1.00	2.50
PFOS	8.12	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	115			
13C2-PFDA	109			
d5-EtFOSAA	120			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Procedural Blank			
Battelle ID	CQ870PB-FS			
Sample Type	PB			
Collection Date	06/01/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.45 J	0.22	0.50	2.50
PFHpA	0.34 U	0.34	1.00	2.50
PFOA	0.38 U	0.38	1.00	2.50
PFNA	0.37 U	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	0.21 U	0.21	0.50	2.50
PFHxS	0.34 U	0.34	1.00	2.50
PFOS	0.30 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	96
d5-EtFOSAA	109

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Laboratory Control Sample					
Battelle ID	CQ871LCS-FS					
Sample Type	LCS					
Collection Date	06/01/2018					
Extraction Date	06/01/2018					
Analysis Date	06/12/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L				Control Limits	
Units	ng/L	Target	Recovery	Qual	Lower	Upper
PFHxA	29.82	30.00	99		70	130
PFHpA	28.21	30.00	94		70	130
PFOA	27.75	30.00	93		70	130
PFNA	28.01	30.00	93		70	130
PFDA	26.56	30.00	89		70	130
PFUnA	27.19	30.00	91		70	130
PFDoA	27.67	30.00	92		70	130
PFTrDA	29.69	30.00	99		70	130
PFTeDA	38.21	30.00	127		70	130
NMeFOSAA	31.27	30.00	104		70	130
NEtFOSAA	32.32	30.00	108		70	130
PFBS	25.39	26.55	96		70	130
PFHxS	26.33	28.35	93		70	130
PFOS	25.47	28.65	89		70	130

Surrogate Recoveries (%)

13C2-PFHxA	108
13C2-PFDA	103
d5-EtFOSAA	107

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, MDL reported

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TETRA TECH **INTERNAL CORRESPONDENCE**

TO: **A. FREBOWITZ** **DATE:** **AUGUST 7, 2018**

FROM: **TERRI L. SOLOMON** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION –POLYFLUOROALKYL SUBSTANCES (PFAS)**
NAS JRB WILLOW GROVE
SAMPLE DELIVERY GROUPS (SDGs) 18-0343, 18-0391

SAMPLES: SDG 18-0343
15/Drinking Water

NAWC-052918-RW-161	NAWC-053018-RW-164
NAWC-053018-RW-172	NAWC-053018-RW-196
NAWC-053018-RW-231	NAWC-053018-RW-270
NAWC-053018-RW-271	NAWC-053018-RW-292
WGNA-052918-RW-3124	WGNA-052918-RW-3493
WGNA-052918-RW-3882	WGNA-052918-RW-3978
WGNA-053018-DUP-37	WGNA-053018-RW-3876
WGNA-053018-RW-3933	

SDG 18-0391
14/Field Reagent Blank (FRB)

NAWC-052918-FRB-161	NAWC-053018-FRB-164
NAWC-053018-FRB-172	NAWC-053018-FRB-196
NAWC-053018-FRB-231	NAWC-053018-FRB-270
NAWC-053018-FRB-271	NAWC-053018-FRB-292
WGNA-052918-FRB-3124	WGNA-052918-FRB-3493
WGNA-052918-FRB-3882	WGNA-052918-FRB-3978
WGNA-053018-FRB-3876	WGNA-053018-FRB-3933

Overview

The sample sets for NAS JRB Willow Grove, SDGs 18-0343 and 18-0391, consisted of fifteen (15) drinking water samples and fourteen (14) FRB samples. All samples were analyzed for select perfluorinated alkyl acids including pentadecafluorooctanoic acid (PFOA), perfluorobutane sulfonic acid (PFBS), perfluoroheptanoic acid (PFHpA), perfluorohexanesulfonic acid (PFHxS), perfluorononanoic acid (PFNA), perfluorooctane sulfonic acid (PFOS), N-ethylperfluorooctane sulfonamidoacetate (NMeFOSA), N-methylperfluorooctane sulfonamidoacetate (NEtFOSA), perfluorodecanoic acid (PFDA), perfluorododecanoic acid (PFDoA), perfluorohexanoic acid (PFHxA), perfluorotetradecanoic acid (PFTeDA), perfluorotridecanoic acid (PFTrDA) and perfluoroundecanoic acid (PFUnA). One (1) field duplicate pair, samples WGNA-053018-DUP-37 and WGNA-053018-RW-3876, was included in this SDG.

The samples were collected by Tetra Tech on May 29 and 30, 2018 and analyzed by Battelle Norwell Operations. All sample analyses were conducted in accordance with EPA Method 537 version 1.1 analytical and reporting protocols.

The data contained in this SDG was validated with regard to the following parameters: data completeness, holding times, mass calibration, mass spectral acquisition rate, tune check, instrument sensitivity check, initial/continuing calibrations, ion transition check, laboratory method/FRBs, surrogate spike recoveries (extracted internal standard recoveries), laboratory control sample results, injected internal standard areas and recoveries, chromatographic resolution, analyte identification, analyte quantitation, and detection limits. Areas of concern are listed below.

.

Major

The following compounds were detected in several FRB samples at concentrations > 1/3 the limit of quantitation (LOQ).

Sample	Compound	Concentration
NAWC-053018-FRB-172	PFOS	1.59 ng/L
NAWC-053018-FRB-270	PFOS	0.85 ng/L
NAWC-053018-FRB-271	PFOS	1.24 ng/L
NAWC-053018-FRB-292	PFOS	2.16 ng/L

The detected results for PFOS in the associated drinking water samples were qualified as having serious deficiencies (X). The associated sample results were all less than 10 times the LOQ (< 25 ng/L).

Minor

All FRB samples were re-prepared 8-9 days past the 14 day extraction hold time due to laboratory suspected contamination from other unrelated PFAS samples. Only re-extracted data was provided by the laboratory. The detected and nondetected results reported for the FRB samples were qualified as estimated (J) and (UJ) as a result of hold time exceedances.

Detected results reported below the LOQ but above the detection limit (DL) were qualified as estimated (J).

Notes

The laboratory uses a primary transition for the quantitation of each analyte and a secondary transition for confirmation.

Sample NAWC-053018-RW-231 was analyzed at a 20X dilution for PFOS and PFHxS.

The method blank for SDG 18-0343 had a detected result reported for PFHxA of 0.45 ng/L. The detected result was < 1/3 the LOQ. No validation actions were required as all detected sample results were reported above the LOQ.

The method blank for SDG 18-0391 had a detected result reported for PFHxA of 0.44 ng/L. The detected result was < 1/3 the LOQ. No validation actions were required as all FRB sample results nondetects.

The laboratory control sample for SDG 18-0391 had a percent recovery for PFTeDA that was above the quality control limit. No validation actions were required as all FRB sample results were nondetects.

The following compounds were detected in several FRB samples at concentrations < 1/3 the LOQ.

Sample	Compound	Concentration
WGNA-052918-FRB-3124	PFOS	0.63 ng/L
WGNA-052918-FRB-3493	PFOS	0.46 ng/L
WGNA-052918-FRB-3978	PFOS	0.35 ng/L
NAWC-053018-FRB-196	PFOS	0.33 ng/L
WGNA-053018-RW-3933	PFOS	0.54 ng/L

No validation actions were required as all associated drinking water detected sample results were reported above the LOQ.

The internal standard recovery for N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-NMeFOSAA) was below the continuing calibration lower limit for sample WGNA-052918-RW-3978. The compounds affected were NMeFOSA and NEtFOSA. The laboratory reanalyzed the sample and the internal standard was within quality control limits. No validations actions were required as the sample results for NMeFOSA and NEtFOSA were reported from the reanalyses.

Samples with detections and their associated FRBs are summarized below.

Sample	Associated FRB
NAWC-052918-RW-161	NAWC-052918-FRB-161
NAWC-053018-RW-164	NAWC-053018-FRB-164
NAWC-053018-RW-172	NAWC-053018-FRB-172
NAWC-053018-RW-196	NAWC-053018-FRB-196
NAWC-053018-RW-231	NAWC-053018-FRB-213
NAWC-053018-RW-270	NAWC-053018-FRB-270
NAWC-053018-RW-271	NAWC-053018-FRB-271
NAWC-053018-RW-292	NAWC-053018-FRB-292
WGNA-052918-RW-3124	WGNA-052918-FRB-3124
WGNA-052918-RW-3493	WGNA-052918-FRB-3493
WGNA-052918-RW-3882	WGNA-052918-FRB-3882
WGNA-052918-RW-3978	WGNA-052918-FRB-3978
WGNA-053018-DUP-37	WGNA-053018-FRB-3876
WGNA-053018-RW-3876	WGNA-053018-FRB-3876
WGNA-053018-RW-3933	WGNA-053018-FRB-3933

Non-detected results were reported to the Limit of Detection (LOD).

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

Executive Summary

Laboratory Performance: The 14 day extraction hold time was exceeded for all FRB samples. Blank contamination was present affecting several samples.

Other Factors Affecting Data Quality: Results below the RL were estimated.

The data for these analyses were reviewed with reference to the Environmental Protection Agency document EPA/600/R-08/092, Method 537, “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”, (September 2009), US EPA National Functional Guidelines for Organic Data Review (January 2017), and the Department of Defense (DoD) document entitled “Quality Systems Manual (QSM) for Environmental Laboratories version 5.1” (2017) as applicable. The text of this report has been formulated to address only those areas affecting data quality.

Terri L. Solomon

Tetra Tech, Inc.
Terri L. Solomon
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-WE04	NSAMPLE	NAWC-052918-RW-161			NAWC-053018-RW-164			NAWC-053018-RW-172			NAWC-053018-RW-196		
SDG: 18-0343	LAB_ID	J6266-FS			J6277-FS			J6287-FS			J6285-FS		
FRACTION: PFAS	SAMP_DATE	5/29/2018			5/30/2018			5/30/2018			5/30/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	U		1	U		1	U		1	U	
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	U		1	U		1	U		1	U	
PENTADECAFLUOROOCTANOIC ACID (PFOA)		18.42			18.79			10.26			15.77		
PERFLUOROBUTANESULFONIC ACID (PFBS)		7.62			29.34			2.83			7.55		
PERFLUORODECANOIC ACID (PFDA)		0.58	J	P	1	U		1	U		0.69	J	P
PERFLUORODODECANOIC ACID (PFDOA)		1	U		1	U		1	U		1	U	
PERFLUOROHEPTANOIC ACID (PFHPA)		6.13			5.55			3.31			6.7		
PERFLUOROHEXANESULFONIC ACID (PFHXS)		13.47			6.74			3.67			2.31	J	P
PERFLUOROHEXANOIC ACID (PFHXA)		11.56			8.14			4.9			13.18		
PERFLUORONONANOIC ACID (PFNA)		3.39			2.18	J	P	1.08	J	P	2.27	J	P
PERFLUOROOCTANESULFONIC ACID (PFOS)		35.04			14.52			8.12	X	B	12.2		
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	U		1.5	U		1.5	U		1.5	U	
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	U		1	U		1	U		1	U	
PERFLUOROUNDECANOIC ACID (PFUNA)		1	U		1	U		1	U		1	U	

PROJ_NO: 08005-WE04	NSAMPLE	NAWC-053018-RW-231			NAWC-053018-RW-270			NAWC-053018-RW-271			NAWC-053018-RW-292		
SDG: 18-0343	LAB_ID	J6273-FS			J6283-FS			J6281-FS			J6279-FS		
FRACTION: PFAS	SAMP_DATE	5/30/2018			5/30/2018			5/30/2018			5/30/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	U		1	U		1	U		1	U	
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	U		1	U		1	U		1	U	
PENTADECAFLUOROOCTANOIC ACID (PFOA)		10.51			10.97			12.38			24.37		
PERFLUOROBUTANESULFONIC ACID (PFBS)		5.78			6.24			3.1			5.6		
PERFLUORODECANOIC ACID (PFDA)		1	U		1	U		1	U		0.46	J	P
PERFLUORODODECANOIC ACID (PFDOA)		1	U		1	U		1	U		1	U	
PERFLUOROHEPTANOIC ACID (PFHPA)		4.11			3.35			3.38			6.81		
PERFLUOROHEXANESULFONIC ACID (PFHXS)		37.2			4.45			5.44			7.86		
PERFLUOROHEXANOIC ACID (PFHXA)		9.35			4.51			5.47			10.15		
PERFLUORONONANOIC ACID (PFNA)		1.76	J	P	1.8	J	P	1.32	J	P	3.39		
PERFLUOROOCTANESULFONIC ACID (PFOS)		57.09			12.57	X	B	10.03	X	B	20.09	X	B
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	U		1.5	U		1.5	U		1.5	U	
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	U		1	U		1	U		1	U	
PERFLUOROUNDECANOIC ACID (PFUNA)		1	U		1	U		1	U		1	U	

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-052918-RW-3124			WGNA-052918-RW-3493			WGNA-052918-RW-3882			WGNA-052918-RW-3978		
SDG: 18-0343	LAB_ID	J6258-FS			J6260-FS			J6262-FS			J6264-FS		
FRACTION: PFAS	SAMP_DATE	5/29/2018			5/29/2018			5/29/2018			5/29/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	U		1	U		1	U				
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	U		1	U		1	U				
PENTADECAFLUOROOCTANOIC ACID (PFOA)		11.54			14.59			8.47			11.26		
PERFLUOROBUTANESULFONIC ACID (PFBS)		3.32			8.41			4.09			4.11		
PERFLUORODECANOIC ACID (PFDA)		1	U		1	U		1	U		0.69	J	P
PERFLUORODODECANOIC ACID (PFDOA)		1	U		1	U		1	U		1	U	
PERFLUOROHEPTANOIC ACID (PFHPA)		3.13			4.29			4.41			4.86		
PERFLUOROHEXANESULFONIC ACID (PFHXS)		5.7			9.19			9.46			6.64		
PERFLUOROHEXANOIC ACID (PFHXA)		5.59			7.38			8.74			8.86		
PERFLUORONONANOIC ACID (PFNA)		1.42	J	P	2.23	J	P	3.04			2.34	J	P
PERFLUOROOCTANESULFONIC ACID (PFOS)		10.06			17.7			25.23			14.01		
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	U		1.5	U		1.5	U		1.5	U	
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	U		1	U		1	U		1	U	
PERFLUOROUNDECANOIC ACID (PFUNA)		1	U		1	U		1	U		1	U	

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-052918-RW-3978-RE			WGNA-053018-DUP-37			WGNA-053018-RW-3876			WGNA-053018-RW-3933		
SDG: 18-0343	LAB_ID	J6264-FS			J6272-FS			J6270-FS			J6275-FS		
FRACTION: PFAS	SAMP_DATE	5/29/2018			5/30/2018			5/30/2018			5/30/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				WGNA-053018-RW-3876								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	U		1	U		1	U		1	U	
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	U		1	U		1	U		1	U	
PENTADECAFLUOROOCTANOIC ACID (PFOA)					10.75			10.65			18.92		
PERFLUOROBUTANESULFONIC ACID (PFBS)					2.96			2.96			7.61		
PERFLUORODECANOIC ACID (PFDA)					1	U		1	U		1	U	
PERFLUORODODECANOIC ACID (PFDOA)					1	U		1	U		1	U	
PERFLUOROHEPTANOIC ACID (PFHPA)					3.03			2.84			6.85		
PERFLUOROHEXANESULFONIC ACID (PFHXS)					4.84			4.42			4.8		
PERFLUOROHEXANOIC ACID (PFHXA)					4.56			4.58			9.95		
PERFLUORONONANOIC ACID (PFNA)					1.78	J	P	1.54	J	P	2.35	J	P
PERFLUOROOCTANESULFONIC ACID (PFOS)					10.28			9.86			19.86		
PERFLUOROTETRADECANOIC ACID (PFTEA)					1.5	U		1.5	U		1.5	U	
PERFLUOROTRIDECANOIC ACID (PFTRIA)					1	U		1	U		1	U	
PERFLUOROUNDECANOIC ACID (PFUNA)					1	U		1	U		1	U	

PROJ_NO: 08005-WE04	NSAMPLE	NAWC-052918-FRB-161			NAWC-053018-FRB-164			NAWC-053018-FRB-172			NAWC-053018-FRB-196		
SDG: 18-0391	LAB_ID	J6267-FS1			J6278-FS1			J6288-FS1			J6286-FS1		
FRACTION: PFAS	SAMP_DATE	5/29/2018			5/30/2018			5/30/2018			5/30/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PENTADECAFLUOROOCTANOIC ACID (PFOA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROBUTANESULFONIC ACID (PFBS)		0.5	UJ	H	0.5	UJ	H	0.5	UJ	H	0.5	UJ	H
PERFLUORODECANOIC ACID (PFDA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUORODODECANOIC ACID (PFDOA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEPTANOIC ACID (PFHPA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEXANESULFONIC ACID (PFHXS)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEXANOIC ACID (PFHXA)		0.5	UJ	H	0.5	UJ	H	0.5	UJ	H	0.5	UJ	H
PERFLUORONONANOIC ACID (PFNA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROOCTANESULFONIC ACID (PFOS)		1	UJ	H	1	UJ	H	1.59	J	HP	0.33	J	HP
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	UJ	H	1.5	UJ	H	1.5	UJ	H	1.5	UJ	H
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROUNDECANOIC ACID (PFUNA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H

PROJ_NO: 08005-WE04	NSAMPLE	NAWC-053018-FRB-231			NAWC-053018-FRB-270			NAWC-053018-FRB-271			NAWC-053018-FRB-292		
SDG: 18-0391	LAB_ID	J6274-FS1			J6284-FS1			J6282-FS1			J6280-FS1		
FRACTION: PFAS	SAMP_DATE	5/30/2018			5/30/2018			5/30/2018			5/30/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PENTADECAFLUOROOCTANOIC ACID (PFOA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROBUTANESULFONIC ACID (PFBS)		0.5	UJ	H	0.5	UJ	H	0.5	UJ	H	0.5	UJ	H
PERFLUORODECANOIC ACID (PFDA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUORODODECANOIC ACID (PFDOA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEPTANOIC ACID (PFHPA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEXANESULFONIC ACID (PFHXS)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEXANOIC ACID (PFHXA)		0.5	UJ	H	0.5	UJ	H	0.5	UJ	H	0.5	UJ	H
PERFLUORONONANOIC ACID (PFNA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROOCTANESULFONIC ACID (PFOS)		1	UJ	H	0.85	J	HP	1.24	J	HP	2.16	J	HP
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	UJ	H	1.5	UJ	H	1.5	UJ	H	1.5	UJ	H
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROUNDECANOIC ACID (PFUNA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-052918-FRB-3124			WGNA-052918-FRB-3493			WGNA-052918-FRB-3882			WGNA-052918-FRB-3978		
SDG: 18-0391	LAB_ID	J6259-FS1			J6261-FS1			J6263-FS1			J6265-FS1		
FRACTION: PFAS	SAMP_DATE	5/29/2018			5/29/2018			5/29/2018			5/29/2018		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PENTADECAFLUOROOCTANOIC ACID (PFOA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROBUTANESULFONIC ACID (PFBS)		0.5	UJ	H	0.5	UJ	H	0.5	UJ	H	0.5	UJ	H
PERFLUORODECANOIC ACID (PFDA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUORODODECANOIC ACID (PFDOA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEPTANOIC ACID (PFHPA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEXANESULFONIC ACID (PFHXS)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROHEXANOIC ACID (PFHXA)		0.5	UJ	H	0.5	UJ	H	0.5	UJ	H	0.5	UJ	H
PERFLUORONONANOIC ACID (PFNA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROOCTANESULFONIC ACID (PFOS)		0.63	J	HP	0.46	J	HP	1	UJ	H	0.35	J	HP
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	UJ	H	1.5	UJ	H	1.5	UJ	H	1.5	UJ	H
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
PERFLUOROUNDECANOIC ACID (PFUNA)		1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-053018-FRB-3876			WGNA-053018-FRB-3933		
SDG: 18-0391	LAB_ID	J6271-FS1			J6276-FS1		
FRACTION: PFAS	SAMP_DATE	5/30/2018			5/30/2018		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
N-ETHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NEFOSA)		1	UJ	H	1	UJ	H
N-METHYLPERFLUOROOCTANE SULFONAMIDOACETATE(NMFOSA)		1	UJ	H	1	UJ	H
PENTADECAFLUOROOCTANOIC ACID (PFOA)		1	UJ	H	1	UJ	H
PERFLUOROBUTANESULFONIC ACID (PFBS)		0.5	UJ	H	0.5	UJ	H
PERFLUORODECANOIC ACID (PFDA)		1	UJ	H	1	UJ	H
PERFLUORODODECANOIC ACID (PFDOA)		1	UJ	H	1	UJ	H
PERFLUOROHEPTANOIC ACID (PFHPA)		1	UJ	H	1	UJ	H
PERFLUOROHEXANESULFONIC ACID (PFHXS)		1	UJ	H	1	UJ	H
PERFLUOROHEXANOIC ACID (PFHXA)		0.5	UJ	H	0.5	UJ	H
PERFLUORONONANOIC ACID (PFNA)		1	UJ	H	1	UJ	H
PERFLUOROOCTANESULFONIC ACID (PFOS)		1	UJ	H	0.54	J	HP
PERFLUOROTETRADECANOIC ACID (PFTEA)		1.5	UJ	H	1.5	UJ	H
PERFLUOROTRIDECANOIC ACID (PFTRIA)		1	UJ	H	1	UJ	H
PERFLUOROUNDECANOIC ACID (PFUNA)		1	UJ	H	1	UJ	H

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It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3124			
Battelle ID	J6258-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.59	0.22	0.50	2.50
PFHpA	3.13	0.34	1.00	2.50
PFOA	11.54	0.38	1.00	2.50
PFNA	1.42 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	3.32	0.21	0.50	2.50
PFHxS	5.70	0.34	1.00	2.50
PFOS	10.06	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	107
13C2-PFDA	97
d5-EtFOSAA	104

07/17/2018

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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3493			
Battelle ID	J6260-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	7.38	0.22	0.50	2.50
PFHpA	4.29	0.34	1.00	2.50
PFOA	14.59	0.38	1.00	2.50
PFNA	2.23 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	8.41	0.21	0.50	2.50
PFHxS	9.19	0.34	1.00	2.50
PFOS	17.70	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	115			
d5-EtFOSAA	108			

07/17/2018

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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3882			
Battelle ID	J6262-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.74	0.22	0.50	2.50
PFHpA	4.41	0.34	1.00	2.50
PFOA	8.47	0.38	1.00	2.50
PFNA	3.04	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	4.09	0.21	0.50	2.50
PFHxS	9.46	0.34	1.00	2.50
PFOS	25.23	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	103			
13C2-PFDA	93			
d5-EtFOSAA	103			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3978			
Battelle ID	J6264-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.86	0.22	0.50	2.50
PFHpA	4.86	0.34	1.00	2.50
PFOA	11.26	0.38	1.00	2.50
PFNA	2.34 J	0.37	1.00	2.50
PFDA	0.69 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	4.11	0.21	0.50	2.50
PFHxS	6.64	0.34	1.00	2.50
PFOS	14.01	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	103			
d5-EtFOSAA	91			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-052918-RW-161			
Battelle ID	J6266-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	11.56	0.22	0.50	2.50
PFHpA	6.13	0.34	1.00	2.50
PFOA	18.42	0.38	1.00	2.50
PFNA	3.39	0.37	1.00	2.50
PFDA	0.58 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.62	0.21	0.50	2.50
PFHxS	13.47	0.34	1.00	2.50
PFOS	35.04	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	100			
d5-EtFOSAA	113			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3876			
Battelle ID	J6270-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.58	0.22	0.50	2.50
PFHpA	2.84	0.34	1.00	2.50
PFOA	10.65	0.38	1.00	2.50
PFNA	1.54 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.96	0.21	0.50	2.50
PFHxS	4.42	0.34	1.00	2.50
PFOS	9.86	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	101			
d5-EtFOSAA	111			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-DUP-37			
Battelle ID	J6272-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.56	0.22	0.50	2.50
PFHpA	3.03	0.34	1.00	2.50
PFOA	10.75	0.38	1.00	2.50
PFNA	1.78 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.96	0.21	0.50	2.50
PFHxS	4.84	0.34	1.00	2.50
PFOS	10.28	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	110			
d5-EtFOSAA	109			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-231			
Battelle ID	J6273-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	9.35	0.22	0.50	2.50
PFHpA	4.11	0.34	1.00	2.50
PFOA	10.51	0.38	1.00	2.50
PFNA	1.76 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	5.78	0.21	0.50	2.50
PFHxS	37.20 ~~D~~	0.34	1.00	2.50
PFOS	57.09 ~~D~~	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	107			
13C2-PFDA	97			
d5-EtFOSAA	88			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3933			
Battelle ID	J6275-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	9.95	0.22	0.50	2.50
PFHpA	6.85	0.34	1.00	2.50
PFOA	18.92	0.38	1.00	2.50
PFNA	2.35 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.61	0.21	0.50	2.50
PFHxS	4.80	0.34	1.00	2.50
PFOS	19.86	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	111			
13C2-PFDA	103			
d5-EtFOSAA	103			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-164			
Battelle ID	J6277-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.14	0.22	0.50	2.50
PFHpA	5.55	0.34	1.00	2.50
PFOA	18.79	0.38	1.00	2.50
PFNA	2.18 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	29.34	0.21	0.50	2.50
PFHxS	6.74	0.34	1.00	2.50
PFOS	14.52	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	105			
d5-EtFOSAA	126			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-292				
Battelle ID	J6279-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.285				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	10.15		0.22	0.50	2.50
PFHpA	6.81		0.34	1.00	2.50
PFOA	24.37		0.38	1.00	2.50
PFNA	3.39		0.37	1.00	2.50
PFDA	0.46 J		0.39	1.00	2.50
PFUnA	0.38 U		0.38	1.00	2.50
PFDoA	0.42 U		0.42	1.00	2.50
PFTrDA	0.42 U		0.42	1.00	2.50
PFTeDA	0.73 U		0.73	1.50	2.50
NMeFOSAA	0.42 U		0.42	1.00	2.50
NEtFOSAA	0.44 U		0.44	1.00	2.50
PFBS	5.60		0.21	0.50	2.50
PFHxS	7.86		0.34	1.00	2.50
PFOS	20.09	X	0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	116				
13C2-PFDA	93				
d5-EtFOSAA	107				

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-271				
Battelle ID	J6281-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.275				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	5.47		0.22	0.50	2.50
PFHpA	3.38		0.34	1.00	2.50
PFOA	12.38		0.38	1.00	2.50
PFNA	1.32	J	0.37	1.00	2.50
PFDA	0.39	U	0.39	1.00	2.50
PFUnA	0.38	U	0.38	1.00	2.50
PFDoA	0.42	U	0.42	1.00	2.50
PFTrDA	0.42	U	0.42	1.00	2.50
PFTeDA	0.73	U	0.73	1.50	2.50
NMeFOSAA	0.42	U	0.42	1.00	2.50
NEtFOSAA	0.44	U	0.44	1.00	2.50
PFBS	3.10		0.21	0.50	2.50
PFHxS	5.44		0.34	1.00	2.50
PFOS	10.03	X	0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	106				
13C2-PFDA	103				
d5-EtFOSAA	107				

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-270				
Battelle ID	J6283-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.275				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	4.51		0.22	0.50	2.50
PFHpA	3.35		0.34	1.00	2.50
PFOA	10.97		0.38	1.00	2.50
PFNA	1.80 J		0.37	1.00	2.50
PFDA	0.39 U		0.39	1.00	2.50
PFUnA	0.38 U		0.38	1.00	2.50
PFDoA	0.42 U		0.42	1.00	2.50
PFTrDA	0.42 U		0.42	1.00	2.50
PFTeDA	0.73 U		0.73	1.50	2.50
NMeFOSAA	0.42 U		0.42	1.00	2.50
NEtFOSAA	0.44 U		0.44	1.00	2.50
PFBS	6.24		0.21	0.50	2.50
PFHxS	4.45		0.34	1.00	2.50
PFOS	12.57	X	0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	114				
13C2-PFDA	99				
d5-EtFOSAA	113				

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BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-196			
Battelle ID	J6285-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	13.18	0.22	0.50	2.50
PFHpA	6.70	0.34	1.00	2.50
PFOA	15.77	0.38	1.00	2.50
PFNA	2.27 J	0.37	1.00	2.50
PFDA	0.69 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.55	0.21	0.50	2.50
PFHxS	2.31 J	0.34	1.00	2.50
PFOS	12.20	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	108			
13C2-PFDA	97			
d5-EtFOSAA	108			

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-172				
Battelle ID	J6287-FS				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/01/2018				
Analysis Date	06/12/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	4.90		0.22	0.50	2.50
PFHpA	3.31		0.34	1.00	2.50
PFOA	10.26		0.38	1.00	2.50
PFNA	1.08	J	0.37	1.00	2.50
PFDA	0.39	U	0.39	1.00	2.50
PFUnA	0.38	U	0.38	1.00	2.50
PFDoA	0.42	U	0.42	1.00	2.50
PFTrDA	0.42	U	0.42	1.00	2.50
PFTeDA	0.73	U	0.73	1.50	2.50
NMeFOSAA	0.42	U	0.42	1.00	2.50
NEtFOSAA	0.44	U	0.44	1.00	2.50
PFBS	2.83		0.21	0.50	2.50
PFHxS	3.67		0.34	1.00	2.50
PFOS	8.12	X	0.30	1.00	2.50
Surrogate Recoveries (%)					
13C2-PFHxA	115				
13C2-PFDA	109				
d5-EtFOSAA	120				

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3124				
Battelle ID	J6259-FS1				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.250				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50 ~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00 ~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00 ~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50 ~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00 ~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50 ~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOS	0.63 ~~JT~~	J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	109
13C2-PFDA	98
d5-EtFOSAA	93

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3493				
Battelle ID	J6261-FS1				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.260				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50 ~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00 ~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00 ~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50 ~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00 ~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50 ~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOS	0.46 ~~JT~~	J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	119
13C2-PFDA	100
d5-EtFOSAA	98

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3882
Battelle ID	J6263-FS1
Sample Type	SA
Collection Date	05/29/2018
Extraction Date	06/21/2018
Analysis Date	06/27/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	NA
Matrix	DW
Sample Size	0.265
Size Unit-Basis	L

Units	ng/L			MDL	LOD	LOQ
PFHxA	0.50	~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOS	1.00	~~UT~~	UJ	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	115
13C2-PFDA	98
d5-EtFOSAA	105

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3978				
Battelle ID	J6265-FS1				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50 ~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00 ~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00 ~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50 ~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00 ~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50 ~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOS	0.35 ~~JT~~	J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	112
13C2-PFDA	103
d5-EtFOSAA	109

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-052918-FRB-161
Battelle ID	J6267-FS1
Sample Type	SA
Collection Date	05/29/2018
Extraction Date	06/21/2018
Analysis Date	06/27/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	NA
Matrix	DW
Sample Size	0.260
Size Unit-Basis	L

Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	~~UT~~ UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~ UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~ UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~ UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~ UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~ UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~ UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOS	1.00	~~UT~~ UJ	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	119
13C2-PFDA	103
d5-EtFOSAA	88

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-FRB-3876
Battelle ID	J6271-FS1
Sample Type	SA
Collection Date	05/30/2018
Extraction Date	06/21/2018
Analysis Date	06/27/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	NA
Matrix	DW
Sample Size	0.255
Size Unit-Basis	L

Units	ng/L			MDL	LOD	LOQ
PFHxA	0.50	~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOS	1.00	~~UT~~	UJ	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	109
13C2-PFDA	107
d5-EtFOSAA	106

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-231				
Battelle ID	J6274-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50 ~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00 ~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00 ~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00 ~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50 ~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00 ~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00 ~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50 ~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00 ~~UT~~	UJ	0.34	1.00	2.50
PFOS	1.00 ~~UT~~	UJ	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	122
13C2-PFDA	115
d5-EtFOSAA	106

Denise L Schumitz
07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-FRB-3933
Battelle ID	J6276-FS1
Sample Type	SA
Collection Date	05/30/2018
Extraction Date	06/21/2018
Analysis Date	06/27/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	NA
Matrix	DW
Sample Size	0.250
Size Unit-Basis	L

Units	ng/L			MDL	LOD	LOQ
PFHxA	0.50	~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOS	0.54	~~JT~~	J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	120
13C2-PFDA	116
d5-EtFOSAA	110

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-164
Battelle ID	J6278-FS1
Sample Type	SA
Collection Date	05/30/2018
Extraction Date	06/21/2018
Analysis Date	06/27/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	NA
Matrix	DW
Sample Size	0.270
Size Unit-Basis	L

Units	ng/L			MDL	LOD	LOQ
PFHxA	0.50	~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOS	1.00	~~UT~~	UJ	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	123
13C2-PFDA	102
d5-EtFOSAA	106

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-292
Battelle ID	J6280-FS1
Sample Type	SA
Collection Date	05/30/2018
Extraction Date	06/21/2018
Analysis Date	06/27/2018
Analytical Instrument	Sciex 5500 LC/MS/MS
% Moisture	NA
Matrix	DW
Sample Size	0.255
Size Unit-Basis	L

Units	ng/L			MDL	LOD	LOQ
PFHxA	0.50	~~UT~~	UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~	UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~	UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~	UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~	UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~	UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~	UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~	UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~	UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~	UJ	0.34	1.00	2.50
PFOS	2.16	~~JT~~	J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	104
13C2-PFDA	103
d5-EtFOSAA	114

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-271				
Battelle ID	J6282-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	~~UT~~ UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~ UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~ UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~ UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~ UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~ UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~ UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOS	1.24	~~JT~~ J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	115
13C2-PFDA	98
d5-EtFOSAA	100

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-270				
Battelle ID	J6284-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.260				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	~~UT~~ UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~ UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~ UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~ UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~ UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~ UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~ UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOS	0.85	~~JT~~ J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	124
13C2-PFDA	105
d5-EtFOSAA	98

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-196				
Battelle ID	J6286-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.245				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	~~UT~~ UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~ UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~ UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~ UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~ UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~ UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~ UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOS	0.33	~~JT~~ J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	115
13C2-PFDA	103
d5-EtFOSAA	109

07/17/2018

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-172				
Battelle ID	J6288-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.240				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	~~UT~~ UJ	0.22	0.50	2.50
PFHpA	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFNA	1.00	~~UT~~ UJ	0.37	1.00	2.50
PFDA	1.00	~~UT~~ UJ	0.39	1.00	2.50
PFUnA	1.00	~~UT~~ UJ	0.38	1.00	2.50
PFDoA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTrDA	1.00	~~UT~~ UJ	0.42	1.00	2.50
PFTeDA	1.50	~~UT~~ UJ	0.73	1.50	2.50
NMeFOSAA	1.00	~~UT~~ UJ	0.42	1.00	2.50
NEtFOSAA	1.00	~~UT~~ UJ	0.44	1.00	2.50
PFBS	0.50	~~UT~~ UJ	0.21	0.50	2.50
PFHxS	1.00	~~UT~~ UJ	0.34	1.00	2.50
PFOS	1.59	~~JT~~ J	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	111
13C2-PFDA	98
d5-EtFOSAA	89

07/17/2018

Appendix B

Results as Reported by the Laboratory

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3124			
Battelle ID	J6258-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.59	0.22	0.50	2.50
PFHpA	3.13	0.34	1.00	2.50
PFOA	11.54	0.38	1.00	2.50
PFNA	1.42 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	3.32	0.21	0.50	2.50
PFHxS	5.70	0.34	1.00	2.50
PFOS	10.06	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	107			
13C2-PFDA	97			
d5-EtFOSAA	104			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3493			
Battelle ID	J6260-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	7.38	0.22	0.50	2.50
PFHpA	4.29	0.34	1.00	2.50
PFOA	14.59	0.38	1.00	2.50
PFNA	2.23 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	8.41	0.21	0.50	2.50
PFHxS	9.19	0.34	1.00	2.50
PFOS	17.70	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	115			
d5-EtFOSAA	108			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3882			
Battelle ID	J6262-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.74	0.22	0.50	2.50
PFHpA	4.41	0.34	1.00	2.50
PFOA	8.47	0.38	1.00	2.50
PFNA	3.04	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	4.09	0.21	0.50	2.50
PFHxS	9.46	0.34	1.00	2.50
PFOS	25.23	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	103			
13C2-PFDA	93			
d5-EtFOSAA	103			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-RW-3978			
Battelle ID	J6264-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.86	0.22	0.50	2.50
PFHpA	4.86	0.34	1.00	2.50
PFOA	11.26	0.38	1.00	2.50
PFNA	2.34 J	0.37	1.00	2.50
PFDA	0.69 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	4.11	0.21	0.50	2.50
PFHxS	6.64	0.34	1.00	2.50
PFOS	14.01	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	103			
d5-EtFOSAA	91			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-052918-RW-161			
Battelle ID	J6266-FS			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.290			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	11.56	0.22	0.50	2.50
PFHpA	6.13	0.34	1.00	2.50
PFOA	18.42	0.38	1.00	2.50
PFNA	3.39	0.37	1.00	2.50
PFDA	0.58 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.62	0.21	0.50	2.50
PFHxS	13.47	0.34	1.00	2.50
PFOS	35.04	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	100			
d5-EtFOSAA	113			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3876			
Battelle ID	J6270-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.58	0.22	0.50	2.50
PFHpA	2.84	0.34	1.00	2.50
PFOA	10.65	0.38	1.00	2.50
PFNA	1.54 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.96	0.21	0.50	2.50
PFHxS	4.42	0.34	1.00	2.50
PFOS	9.86	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	117			
13C2-PFDA	101			
d5-EtFOSAA	111			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-DUP-37			
Battelle ID	J6272-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.56	0.22	0.50	2.50
PFHpA	3.03	0.34	1.00	2.50
PFOA	10.75	0.38	1.00	2.50
PFNA	1.78 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.96	0.21	0.50	2.50
PFHxS	4.84	0.34	1.00	2.50
PFOS	10.28	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	110			
d5-EtFOSAA	109			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-231			
Battelle ID	J6273-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	9.35	0.22	0.50	2.50
PFHpA	4.11	0.34	1.00	2.50
PFOA	10.51	0.38	1.00	2.50
PFNA	1.76 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	5.78	0.21	0.50	2.50
PFHxS	37.20 D	0.34	1.00	2.50
PFOS	57.09 D	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	107			
13C2-PFDA	97			
d5-EtFOSAA	88			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-RW-3933			
Battelle ID	J6275-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	9.95	0.22	0.50	2.50
PFHpA	6.85	0.34	1.00	2.50
PFOA	18.92	0.38	1.00	2.50
PFNA	2.35 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.61	0.21	0.50	2.50
PFHxS	4.80	0.34	1.00	2.50
PFOS	19.86	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	111			
13C2-PFDA	103			
d5-EtFOSAA	103			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-164			
Battelle ID	J6277-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	8.14	0.22	0.50	2.50
PFHpA	5.55	0.34	1.00	2.50
PFOA	18.79	0.38	1.00	2.50
PFNA	2.18 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	29.34	0.21	0.50	2.50
PFHxS	6.74	0.34	1.00	2.50
PFOS	14.52	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	119			
13C2-PFDA	105			
d5-EtFOSAA	126			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-292			
Battelle ID	J6279-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.285			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	10.15	0.22	0.50	2.50
PFHpA	6.81	0.34	1.00	2.50
PFOA	24.37	0.38	1.00	2.50
PFNA	3.39	0.37	1.00	2.50
PFDA	0.46 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	5.60	0.21	0.50	2.50
PFHxS	7.86	0.34	1.00	2.50
PFOS	20.09	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	116			
13C2-PFDA	93			
d5-EtFOSAA	107			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-271			
Battelle ID	J6281-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	5.47	0.22	0.50	2.50
PFHpA	3.38	0.34	1.00	2.50
PFOA	12.38	0.38	1.00	2.50
PFNA	1.32 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	3.10	0.21	0.50	2.50
PFHxS	5.44	0.34	1.00	2.50
PFOS	10.03	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	106			
13C2-PFDA	103			
d5-EtFOSAA	107			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-270			
Battelle ID	J6283-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.51	0.22	0.50	2.50
PFHpA	3.35	0.34	1.00	2.50
PFOA	10.97	0.38	1.00	2.50
PFNA	1.80 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	6.24	0.21	0.50	2.50
PFHxS	4.45	0.34	1.00	2.50
PFOS	12.57	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	114			
13C2-PFDA	99			
d5-EtFOSAA	113			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-196			
Battelle ID	J6285-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.275			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	13.18	0.22	0.50	2.50
PFHpA	6.70	0.34	1.00	2.50
PFOA	15.77	0.38	1.00	2.50
PFNA	2.27 J	0.37	1.00	2.50
PFDA	0.69 J	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	7.55	0.21	0.50	2.50
PFHxS	2.31 J	0.34	1.00	2.50
PFOS	12.20	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	108			
13C2-PFDA	97			
d5-EtFOSAA	108			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-RW-172			
Battelle ID	J6287-FS			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	4.90	0.22	0.50	2.50
PFHpA	3.31	0.34	1.00	2.50
PFOA	10.26	0.38	1.00	2.50
PFNA	1.08 J	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	2.83	0.21	0.50	2.50
PFHxS	3.67	0.34	1.00	2.50
PFOS	8.12	0.30	1.00	2.50
Surrogate Recoveries (%)				
13C2-PFHxA	115			
13C2-PFDA	109			
d5-EtFOSAA	120			

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3124				
Battelle ID	J6259-FS1				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.250				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	0.63	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	109
13C2-PFDA	98
d5-EtFOSAA	93

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3493			
Battelle ID	J6261-FS1			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/21/2018			
Analysis Date	06/27/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.260			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 UT	0.22	0.50	2.50
PFHpA	1.00 UT	0.34	1.00	2.50
PFOA	1.00 UT	0.38	1.00	2.50
PFNA	1.00 UT	0.37	1.00	2.50
PFDA	1.00 UT	0.39	1.00	2.50
PFUnA	1.00 UT	0.38	1.00	2.50
PFDoA	1.00 UT	0.42	1.00	2.50
PFTrDA	1.00 UT	0.42	1.00	2.50
PFTeDA	1.50 UT	0.73	1.50	2.50
NMeFOSAA	1.00 UT	0.42	1.00	2.50
NEtFOSAA	1.00 UT	0.44	1.00	2.50
PFBS	0.50 UT	0.21	0.50	2.50
PFHxS	1.00 UT	0.34	1.00	2.50
PFOS	0.46 JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	119
13C2-PFDA	100
d5-EtFOSAA	98

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3882				
Battelle ID	J6263-FS1				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.265				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	1.00	UT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	115
13C2-PFDA	98
d5-EtFOSAA	105

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-052918-FRB-3978			
Battelle ID	J6265-FS1			
Sample Type	SA			
Collection Date	05/29/2018			
Extraction Date	06/21/2018			
Analysis Date	06/27/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.270			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 UT	0.22	0.50	2.50
PFHpA	1.00 UT	0.34	1.00	2.50
PFOA	1.00 UT	0.38	1.00	2.50
PFNA	1.00 UT	0.37	1.00	2.50
PFDA	1.00 UT	0.39	1.00	2.50
PFUnA	1.00 UT	0.38	1.00	2.50
PFDoA	1.00 UT	0.42	1.00	2.50
PFTrDA	1.00 UT	0.42	1.00	2.50
PFTeDA	1.50 UT	0.73	1.50	2.50
NMeFOSAA	1.00 UT	0.42	1.00	2.50
NEtFOSAA	1.00 UT	0.44	1.00	2.50
PFBS	0.50 UT	0.21	0.50	2.50
PFHxS	1.00 UT	0.34	1.00	2.50
PFOS	0.35 JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	112
13C2-PFDA	103
d5-EtFOSAA	109

BATTELLE
It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-052918-FRB-161				
Battelle ID	J6267-FS1				
Sample Type	SA				
Collection Date	05/29/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.260				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	1.00	UT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	119
13C2-PFDA	103
d5-EtFOSAA	88

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-FRB-3876			
Battelle ID	J6271-FS1			
Sample Type	SA			
Collection Date	05/30/2018			
Extraction Date	06/21/2018			
Analysis Date	06/27/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	DW			
Sample Size	0.255			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.50 UT	0.22	0.50	2.50
PFHpA	1.00 UT	0.34	1.00	2.50
PFOA	1.00 UT	0.38	1.00	2.50
PFNA	1.00 UT	0.37	1.00	2.50
PFDA	1.00 UT	0.39	1.00	2.50
PFUnA	1.00 UT	0.38	1.00	2.50
PFDoA	1.00 UT	0.42	1.00	2.50
PFTrDA	1.00 UT	0.42	1.00	2.50
PFTeDA	1.50 UT	0.73	1.50	2.50
NMeFOSAA	1.00 UT	0.42	1.00	2.50
NEtFOSAA	1.00 UT	0.44	1.00	2.50
PFBS	0.50 UT	0.21	0.50	2.50
PFHxS	1.00 UT	0.34	1.00	2.50
PFOS	1.00 UT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	109
13C2-PFDA	107
d5-EtFOSAA	106

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-231				
Battelle ID	J6274-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	1.00	UT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	122
13C2-PFDA	115
d5-EtFOSAA	106

BATTELLE
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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	WGNA-053018-FRB-3933				
Battelle ID	J6276-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.250				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	0.54	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	120
13C2-PFDA	116
d5-EtFOSAA	110

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-164				
Battelle ID	J6278-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	1.00	UT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	123
13C2-PFDA	102
d5-EtFOSAA	106

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-292				
Battelle ID	J6280-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.255				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	2.16	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	104
13C2-PFDA	103
d5-EtFOSAA	114

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-271				
Battelle ID	J6282-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.270				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	1.24	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	115
13C2-PFDA	98
d5-EtFOSAA	100

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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-270				
Battelle ID	J6284-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.260				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	0.85	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	124
13C2-PFDA	105
d5-EtFOSAA	98

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-196				
Battelle ID	J6286-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.245				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	0.33	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	115
13C2-PFDA	103
d5-EtFOSAA	109

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	NAWC-053018-FRB-172				
Battelle ID	J6288-FS1				
Sample Type	SA				
Collection Date	05/30/2018				
Extraction Date	06/21/2018				
Analysis Date	06/27/2018				
Analytical Instrument	Sciex 5500 LC/MS/MS				
% Moisture	NA				
Matrix	DW				
Sample Size	0.240				
Size Unit-Basis	L				
Units	ng/L		MDL	LOD	LOQ
PFHxA	0.50	UT	0.22	0.50	2.50
PFHpA	1.00	UT	0.34	1.00	2.50
PFOA	1.00	UT	0.38	1.00	2.50
PFNA	1.00	UT	0.37	1.00	2.50
PFDA	1.00	UT	0.39	1.00	2.50
PFUnA	1.00	UT	0.38	1.00	2.50
PFDoA	1.00	UT	0.42	1.00	2.50
PFTrDA	1.00	UT	0.42	1.00	2.50
PFTeDA	1.50	UT	0.73	1.50	2.50
NMeFOSAA	1.00	UT	0.42	1.00	2.50
NEtFOSAA	1.00	UT	0.44	1.00	2.50
PFBS	0.50	UT	0.21	0.50	2.50
PFHxS	1.00	UT	0.34	1.00	2.50
PFOS	1.59	JT	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	111
13C2-PFDA	98
d5-EtFOSAA	89

Appendix C

Support Documentation

Battelle

The Business of Innovation

Chain-of-Custody

Client Contact Information
Andy Frebowitz
234 Mall Boulevard, Suite 260
King of Prussia, PA 19406
610-382-1170

Project Manager: Jonathan Thorn
Sampler Information (print name): Mary Kay Bond
Phone: 610-382-1169
Email: mary.bond@tetratech.com
Turnaround Time (TAT) Requested: 21 days

Project Name: WE04
Project No.: 112G08005-WE04

Normal ☑
Priority ☐
RUSH ☐
Time Zone: Eastern

Sampling Site: WE04

Site Information: NAS JRB Willow Grove/WGNA Warminster

COC #

Page# 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservative: Trizma	Analysis: PFAS EPA 537 14 analytes	
WGNA-052918-RW-3124 J6258	5/29/2018	9:40	G	DW	2		X	
WGNA-052918-FRB-3124 J6259	5/29/2018	9:35	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3493 J6260	5/29/2018	10:10	G	DW	2		X	
WGNA-052918-FRB-3493 J6261	5/29/2018	10:05	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3882 J6262	5/29/2018	10:25	G	DW	2		X	
WGNA-052918-FRB-3882 J6263	5/29/2018	10:20	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3978 J6264	5/29/2018	10:40	G	DW	2		X	
WGNA-052918-FRB-3978 J6265	5/29/2018	10:35	G	DW	2		X	Field Reagent Blank
NAWC-052918-RW-161 J6266	5/29/2018	11:40	G	DW	2		X	
NAWC-052918-FRB-161 J6267	5/29/2018	11:35	G	DW	2		X	Field Reagent Blank

Receipt Temperature:(°C) 1.7°

Samples Intact: Yes - No

Samples on Ice: Yes - No

Receipt Comments:

Relinquished by (Print/Sign)	Company	Date/Time	Received by (Print/Sign)	Company	Date/Time
	Tetra Tech	05/29/2018 16:00	Matt Schermitz	Battelle	5-30-18 10:30

Comments: FedEx Tracking # 7723 3007 0381

Battelle

The Business of Innovation

Chain-of-Custody

Client Contact Information
Andy Frebowitz
234 Mall Boulevard, Suite 260
King of Prussia, PA 19406
610-382-1170

Project Manager: Jonathan Thorn
Sampler Information (print name): Mary Kay Bond
Phone: 610-382-1169
Email: mary.bond@tetratech.com
Turnaround Time (TAT) Requested: 21 days

Project Name: WE04
Project No.: 112G08005-WE04

Normal ☑
Priority ☐
RUSH ☐
Time Zone: Eastern

Sampling Site: WE04
Site Information: NAS JRB Willow Grove/WGNA Warminster

COC #

Page# 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservative: Trizma	Analysis: PFAS EPA 537 14 analytes	
WGNA-053018-RW-3876 J6270	5/30/2018	8:10	G	DW	2		X	
WGNA-053018-FRB-3876 71	5/30/2018	8:05	G	DW	2		X	Field Reagent Blank
WGNA-053018-DUP-37 72	5/30/2018	7:00	G	DW	2		X	DUPLICATE
NAWC-053018-RW-231 73	5/30/2018	8:40	G	DW	2		X	
NAWC-053018-FRB-231 74	5/30/2018	8:35	G	DW	2		X	Field Reagent Blank
WGNA-053018-RW-3933 75	5/30/2018	11:10	G	DW	2		X	
WGNA-053018-FRB-3933 76	5/30/2018	11:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-164 77	5/30/2018	14:10	G	DW	2		X	
NAWC-053018-FRB-164 78	5/30/2018	14:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-292 79	5/30/2018	14:40	G	DW	2		X	
NAWC-053018-FRB-292 80	5/30/2018	14:35	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-271 81	5/30/2018	15:10	G	DW	2		X	
NAWC-053018-FRB-271 82	5/30/2018	15:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-270 83	5/30/2018	15:20	G	DW	2		X	
NAWC-053018-FRB-270 84	5/30/2018	15:15	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-196 85	5/30/2018	15:40	G	DW	2		X	
NAWC-053018-FRB-196 86	5/30/2018	15:35	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-172 87	5/30/2018	16:10	G	DW	2		X	
NAWC-053018-FRB-172 J6288	5/30/2018	16:05	G	DW	2		X	Field Reagent Blank

Receipt Temperature:(°C) 1.3

Samples Intact: Yes - No

Samples on Ice: Yes - No

Receipt Comments:

Relinquished by (Print/Sign):	Company:	Date/Time:	Received by (Print/Sign):	Company:	Date/Time:
Mary Kay Bond	Tetra Tech	05/30/2018 18:00	Matt Schumitz MS	Battelle	5-31-18 1030

Comments: FedEx Tracking # 7723 4831 5079

QA/QC Summary
Batch 18-0343

Project:	CTO-WE04 Naval Air Station Joint Reserve Base Willow Grove
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	DW
Data Set:	DP-18-0135
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
5/29/2018	5/30/2018	1.7
5/30/2018	5/31/2018	1.3

Corrective Actions	None
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	Field samples associated with these FRB samples are extracted in SDG 18-0359.

	METHOD SUMMARIES
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a weak ion exchange solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	None.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500. The confirmation ion ratio was above 50% RPD for the selected samples, however, the detected concentrations were below the LOQ or below the detection limits with the following exceptions: WGNA-053018-RW-3876 (J6270) – PFHpA and PFOA WGNA-053018-DUP-37 (J6272) – PFHpA and PFOA

Holding Times	Extraction Date(s)	Analysis Date(s)
	6/1/2018	6/12 and 14/2018

QA/QC Summary
Batch 18-0343

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
≤ 1/3 the MRL	No exceedances noted.
	No comments.
Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	No exceedances noted.
	No comments.

Matrix Spike (MS) / Duplicate (MSD)	A MS/MSD were prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference was calculated to measure precision.
70-130% of true value, RPD ≤ 30%	No exceedances noted.
	MS/MSD samples were not processed with this batch of field samples.

Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted.
	No comments.

Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICal high and low points RPD ≤20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted.
	No comments.

QA/QC Summary
Batch 18-0343

Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadradic curve fitting.
R^2 >0.99 Target and SIS compounds +/- 30% of true value, Low point 50-150% of true value	No exceedances noted.
	No comments.
Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
Target and SIS compounds +/- 30% of true value	No exceedances noted.
	No comments.

Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
Target and SIS compounds +/- 30% of true value Low point 50-150% of true value	No exceedances noted.
	No comments.

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BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

Sample ID	Description
CQ870PB-FS	Procedural Blank
CQ871LCS-FS	Laboratory Control Sample
J6258-FS	WGNA-052918-RW-3124
J6260-FS	WGNA-052918-RW-3493
J6262-FS	WGNA-052918-RW-3882
J6264-FS	WGNA-052918-RW-3978
J6266-FS	NAWC-052918-RW-161
J6270-FS	WGNA-053018-RW-3876
J6272-FS	WGNA-053018-DUP-37
J6273-FS	NAWC-053018-RW-231
J6275-FS	WGNA-053018-RW-3933
J6277-FS	NAWC-053018-RW-164
J6279-FS	NAWC-053018-RW-292
J6281-FS	NAWC-053018-RW-271
J6283-FS	NAWC-053018-RW-270
J6285-FS	NAWC-053018-RW-196
J6287-FS	NAWC-053018-RW-172

Samples Assigned By: Stephanie Schultz Date : June 11, 2018

Comments:

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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Procedural Blank			
Battelle ID	CQ870PB-FS			
Sample Type	PB			
Collection Date	06/01/2018			
Extraction Date	06/01/2018			
Analysis Date	06/12/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.45 J	0.22	0.50	2.50
PFHpA	0.34 U	0.34	1.00	2.50
PFOA	0.38 U	0.38	1.00	2.50
PFNA	0.37 U	0.37	1.00	2.50
PFDA	0.39 U	0.39	1.00	2.50
PFUnA	0.38 U	0.38	1.00	2.50
PFDoA	0.42 U	0.42	1.00	2.50
PFTrDA	0.42 U	0.42	1.00	2.50
PFTeDA	0.73 U	0.73	1.50	2.50
NMeFOSAA	0.42 U	0.42	1.00	2.50
NEtFOSAA	0.44 U	0.44	1.00	2.50
PFBS	0.21 U	0.21	0.50	2.50
PFHxS	0.34 U	0.34	1.00	2.50
PFOS	0.30 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	110
13C2-PFDA	96
d5-EtFOSAA	109

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Laboratory Control Sample					
Battelle ID	CQ871LCS-FS					
Sample Type	LCS					
Collection Date	06/01/2018					
Extraction Date	06/01/2018					
Analysis Date	06/12/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L				Control Limits	
Units	ng/L	Target	Recovery	Qual	Lower	Upper
PFHxA	29.82	30.00	99		70	130
PFHpA	28.21	30.00	94		70	130
PFOA	27.75	30.00	93		70	130
PFNA	28.01	30.00	93		70	130
PFDA	26.56	30.00	89		70	130
PFUnA	27.19	30.00	91		70	130
PFDoA	27.67	30.00	92		70	130
PFTrDA	29.69	30.00	99		70	130
PFTeDA	38.21	30.00	127		70	130
NMeFOSAA	31.27	30.00	104		70	130
NEtFOSAA	32.32	30.00	108		70	130
PFBS	25.39	26.55	96		70	130
PFHxS	26.33	28.35	93		70	130
PFOS	25.47	28.65	89		70	130

Surrogate Recoveries (%)

13C2-PFHxA	108
13C2-PFDA	103
d5-EtFOSAA	107

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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project Number: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135
Test Code: Master_371

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	0	None
Matrix Spike / Matrix Spike Duplicate Recovery	NA	None
Matrix Spike / Matrix Spike Duplicate Precision	NA	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:	Naval Air Station Joint Reserve Base Wi	**Data Set Number:**	DP-18-0135
Project Number:	100117920-WE04	**Prep Batch Number:**	18-0343
Entered By:	Denise Schumitz	**Entered On:**	06/15/2018
Test Code (Matrix Type):	Master_371(L)		

Samples that were manually integrated are noted on the quant reports with the comment (TRUE). DMS 6/15/2018

Sample J6264 did not meet the criteria for the internal standard d3-MeFOSAA. This sample was re-aliquoted, run and passes. All analytes for this sample being quantified from d3-MeFOSAA are being reported from 18-0343_D. DMS 6/15/2018

JV64 is not being used in the calibration curve for all analytes in method 18-0343. There is no impact on the data once this point is removed from the calibration. DMS 6/15/2018

JV65 is not being used in the calibration curve for PFHxA and PFOS in method 18-0343. There is no impact on the data. DMS 6/15/2018

JV72 is not being used in the calibration curve for NMeFOSAA, NEtFOSAA, and d5-EtFOSAA in method 18-0343_D. There is no impact on the data once this point is removed from the calibration.
DMS 6/15/2018

JV65, in method 18-0343, has an ion ratio of >50% for PFHpA and NEtFOSAA.
DMS 6/15/2018

CQ870PB, in method 18-0343, has an ion ratio of >50% for PFBS, FHpA, PFOA, PFDA, NMeFOSAA, and NEtFOSAA.
DMS 6/15/2018

J6258, in method 18-0343, has an ion ratio of >50% for NEtFOSAA.
DMS 6/15/2018

J6260, in method 18-0343, has an ion ratio of >50% for PFDoA, PFTrDA, and NMeFOSAA.
DMS 6/15/2018

J6262, in method 18-0343, has an ion ratio of >50% for PFDoA, PFTrDA, and PFTeDA.
DMS 6/15/2018

J6264, in method 18-0343, has an ion ratio of >50% for PFTrDA and PFTeDA.
DMS 6/15/2018

J6266, in method 18-0343, has an ion ratio of >50% for PFTrDA and PFTeDA.
DMS 6/15/2018

J6270, in method 18-0343, has an ion ratio of >50% for PFHpA, PFOA, PFDoA, PFTrDA, and PFTeDA.
DMS 6/15/2018

J6272, in method 18-0343, has an ion ratio of >50% for PFHpA, PFOA, PFDA, PFDoA, PFTrDA, and PFTeDA.
DMS 6/15/2018

J6275, in method 18-0343, has an ion ratio of >50% for PFTrDA and PFTeDA.
DMS 6/15/2018

J6273, J6277, J6279, J6281, J6283, J6285, and J6287 in method 18-0343, have an ion ratio of >50% for PFDoA, PFTrDA and PFTeDA.
DMS 6/15/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.06.18 09:44:21 -04'00'

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It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135

	CQ870PB-FS (Procedural Blank)	CQ871LCS-FS (Laboratory Control Sample)	J6258-FS (WGNA-052918-RW-3124)	J6260-FS (WGNA-052918-RW-3493)	J6262-FS (WGNA-052918-RW-3882)	J6264-FS (WGNA-052918-RW-3978)
PFHxA	-	L	L	L	L	L
PFHpA	-	L	L	L	L	L
PFOA	-	L	L	L	L	L
PFNA	-	L	L	L	L	L
PFDA	-	L	-	-	-	L
PFUnA	-	L	-	-	-	-
PFDoA	-	L	-	-	-	-
PFTrDA	-	L	-	-	-	-
PFTeDA	-	L	-	-	-	-
NMeFOSAA	-	L	-	-	-	-
NEtFOSAA	-	L	-	-	-	-
PFBS	-	L	L	L	L	L
PFHxS	-	L	L	L	L	L
PFOS	-	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: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135

	J6266-FS (NAWC-052918-RW-161)	J6270-FS (WGNA-053018-RW-3876)	J6272-FS (WGNA-053018-DUP-37)	J6273-FS (NAWC-053018-RW-231)	J6275-FS (WGNA-053018-RW-3933)	J6277-FS (NAWC-053018-RW-164)	J6279-FS (NAWC-053018-RW-292)	J6281-FS (NAWC-053018-RW-271)
PFHxA	L	L	L	L	L	L	L	L
PFHpA	L	L	L	L	L	L	L	L
PFOA	L	L	L	L	L	L	L	L
PFNA	L	L	L	L	L	L	L	L
PFDA	L	-	-	-	-	-	L	-
PFUnA	-	-	-	-	-	-	-	-
PFDoA	-	-	-	-	-	-	-	-
PFTrDA	-	-	-	-	-	-	-	-
PFTeDA	-	-	-	-	-	-	-	-
NMeFOSAA	-	-	-	-	-	-	-	-
NEtFOSAA	-	-	-	-	-	-	-	-
PFBS	L	L	L	L	L	L	L	L
PFHxS	L	L	L	L	L	L	L	L
PFOS	L/Br	L/Br	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: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0343
Data Set: DP-18-0135

	J6283-FS (NAWC-053018-RW-270)	J6285-FS (NAWC-053018-RW-196)	J6287-FS (NAWC-053018-RW-172)
PFHxA	L	L	L
PFHpA	L	L	L
PFOA	L	L	L
PFNA	L	L	L
PFDA	-	-	-
PFUnA	-	-	-
PFDoA	-	-	-
PFTrDA	-	-	-
PFTeDA	-	-	-
NMeFOSAA	-	-	-
NEtFOSAA	-	-	-
PFBS	L	L	L
PFHxS	L	L	L
PFOS	L/Br	L/Br	L/Br

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

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C4-PFOS	175,225.42	-	
JV66	L3	6/12/18 16:05	13C4-PFOS	156,308.21	-	
JV67	L4	6/12/18 16:14	13C4-PFOS	144,107.35	-	
JV68	L5	6/12/18 16:23	13C4-PFOS	172,723.18	-	
JV69	L6	6/12/18 16:32	13C4-PFOS	171,696.69	-	
JV70	L7	6/12/18 16:40	13C4-PFOS	157,911.70	-	
JV71	L8	6/12/18 16:49	13C4-PFOS	143,877.70	-	
JV72	L9	6/12/18 16:58	13C4-PFOS	178,415.29	1.8	PASS

Average	Lower	Upper
162,533.19	81,266.60	243,799.79

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV65	L2	6/12/18 15:56	13C4-PFOS	175,225.42	81,266.60	243,799.79		120,187.68	240,375.37	
JV66	L3	6/12/18 16:05	13C4-PFOS	156,308.21	81,266.60	243,799.79		120,187.68	240,375.37	
JV67	L4	6/12/18 16:14	13C4-PFOS	144,107.35	81,266.60	243,799.79		120,187.68	240,375.37	
JV68	L5	6/12/18 16:23	13C4-PFOS	172,723.18	81,266.60	243,799.79		120,187.68	240,375.37	
JV69	L6	6/12/18 16:32	13C4-PFOS	171,696.69	81,266.60	243,799.79		120,187.68	240,375.37	
JV70	L7	6/12/18 16:40	13C4-PFOS	157,911.70	81,266.60	243,799.79		120,187.68	240,375.37	
JV71	L8	6/12/18 16:49	13C4-PFOS	143,877.70	81,266.60	243,799.79		120,187.68	240,375.37	
JV72	L9	6/12/18 16:58	13C4-PFOS	178,415.29	81,266.60	243,799.79		120,187.68	240,375.37	
JV63 ICC	ICC	6/12/18 17:07	13C4-PFOS	144,565.71	81,266.60	243,799.79		120,187.68	240,375.37	
CQ870PB-FS(0)	Procedural Blank	6/12/18 17:16	13C4-PFOS	155,430.77	81,266.60	243,799.79		120,187.68	240,375.37	
CQ871LCS-FS(0)	Laboratory Control Sample	6/12/18 17:25	13C4-PFOS	146,577.61	81,266.60	243,799.79		120,187.68	240,375.37	
J6258-FS(0)	WGNA-052918-RW-3124	6/12/18 17:34	13C4-PFOS	157,775.26	81,266.60	243,799.79		120,187.68	240,375.37	
J6260-FS(0)	WGNA-052918-RW-3493	6/12/18 17:43	13C4-PFOS	161,208.59	81,266.60	243,799.79		120,187.68	240,375.37	
J6262-FS(0)	WGNA-052918-RW-3882	6/12/18 17:52	13C4-PFOS	183,824.83	81,266.60	243,799.79		120,187.68	240,375.37	
J6264-FS(0)	WGNA-052918-RW-3978	6/12/18 18:01	13C4-PFOS	122,165.48	81,266.60	243,799.79		120,187.68	240,375.37	
J6266-FS(0)	NAWC-052918-RW-161	6/12/18 18:10	13C4-PFOS	129,333.17	81,266.60	243,799.79		120,187.68	240,375.37	
J6270-FS(0)	WGNA-053018-RW-3876	6/12/18 18:19	13C4-PFOS	157,613.34	81,266.60	243,799.79		120,187.68	240,375.37	
JV69 CCV	CCV	6/12/18 18:27	13C4-PFOS	164,027.66	81,266.60	243,799.79		120,187.68	240,375.37	
J6272-FS(0)	WGNA-053018-DUP-37	6/12/18 18:36	13C4-PFOS	134,976.88	81,266.60	243,799.79		114,819.36	229,638.72	
J6273-FS(0)	NAWC-053018-RW-231	6/12/18 18:45	13C4-PFOS	135,894.71	81,266.60	243,799.79		114,819.36	229,638.72	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C4-PFOS	175,225.42	-	
JV66	L3	6/12/18 16:05	13C4-PFOS	156,308.21	-	
JV67	L4	6/12/18 16:14	13C4-PFOS	144,107.35	-	
JV68	L5	6/12/18 16:23	13C4-PFOS	172,723.18	-	
JV69	L6	6/12/18 16:32	13C4-PFOS	171,696.69	-	
JV70	L7	6/12/18 16:40	13C4-PFOS	157,911.70	-	
JV71	L8	6/12/18 16:49	13C4-PFOS	143,877.70	-	
JV72	L9	6/12/18 16:58	13C4-PFOS	178,415.29	1.8	PASS

Average	Lower	Upper
162,533.19	81,266.60	243,799.79

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6275-FS(0)	WGNA-053018-RW-3933	6/12/18 18:54	13C4-PFOS	166,359.15	81,266.60	243,799.79		114,819.36	229,638.72	
J6277-FS(0)	NAWC-053018-RW-164	6/12/18 19:03	13C4-PFOS	139,897.42	81,266.60	243,799.79		114,819.36	229,638.72	
J6279-FS(0)	NAWC-053018-RW-292	6/12/18 19:12	13C4-PFOS	155,414.60	81,266.60	243,799.79		114,819.36	229,638.72	
J6281-FS(0)	NAWC-053018-RW-271	6/12/18 19:21	13C4-PFOS	152,042.85	81,266.60	243,799.79		114,819.36	229,638.72	
J6283-FS(0)	NAWC-053018-RW-270	6/12/18 19:30	13C4-PFOS	144,534.07	81,266.60	243,799.79		114,819.36	229,638.72	
J6285-FS(0)	NAWC-053018-RW-196	6/12/18 19:39	13C4-PFOS	151,326.78	81,266.60	243,799.79		114,819.36	229,638.72	
J6287-FS(0)	NAWC-053018-RW-172	6/12/18 19:48	13C4-PFOS	161,065.81	81,266.60	243,799.79		114,819.36	229,638.72	
JV70 CCV	CCV	6/12/18 19:57	13C4-PFOS	156,969.18	81,266.60	243,799.79		114,819.36	229,638.72	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C2-PFOA	64,554.53	-	
JV66	L3	6/12/18 16:05	13C2-PFOA	54,463.23	-	
JV67	L4	6/12/18 16:14	13C2-PFOA	54,513.09	-	
JV68	L5	6/12/18 16:23	13C2-PFOA	57,342.63	-	
JV69	L6	6/12/18 16:32	13C2-PFOA	59,704.88	-	
JV70	L7	6/12/18 16:40	13C2-PFOA	55,898.24	-	
JV71	L8	6/12/18 16:49	13C2-PFOA	54,881.78	-	
JV72	L9	6/12/18 16:58	13C2-PFOA	68,255.79	5.6	PASS

Average	Lower	Upper
58,701.77	29,350.89	88,052.66

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV65	L2	6/12/18 15:56	13C2-PFOA	64,554.53	29,350.89	88,052.66		41,793.42	83,586.83	
JV66	L3	6/12/18 16:05	13C2-PFOA	54,463.23	29,350.89	88,052.66		41,793.42	83,586.83	
JV67	L4	6/12/18 16:14	13C2-PFOA	54,513.09	29,350.89	88,052.66		41,793.42	83,586.83	
JV68	L5	6/12/18 16:23	13C2-PFOA	57,342.63	29,350.89	88,052.66		41,793.42	83,586.83	
JV69	L6	6/12/18 16:32	13C2-PFOA	59,704.88	29,350.89	88,052.66		41,793.42	83,586.83	
JV70	L7	6/12/18 16:40	13C2-PFOA	55,898.24	29,350.89	88,052.66		41,793.42	83,586.83	
JV71	L8	6/12/18 16:49	13C2-PFOA	54,881.78	29,350.89	88,052.66		41,793.42	83,586.83	
JV72	L9	6/12/18 16:58	13C2-PFOA	68,255.79	29,350.89	88,052.66		41,793.42	83,586.83	
JV63 ICC	ICC	6/12/18 17:07	13C2-PFOA	51,704.19	29,350.89	88,052.66		41,793.42	83,586.83	
CQ870PB-FS(0)	Procedural Blank	6/12/18 17:16	13C2-PFOA	55,526.05	29,350.89	88,052.66		41,793.42	83,586.83	
CQ871LCS-FS(0)	Laboratory Control Sample	6/12/18 17:25	13C2-PFOA	55,354.18	29,350.89	88,052.66		41,793.42	83,586.83	
J6258-FS(0)	WGNA-052918-RW-3124	6/12/18 17:34	13C2-PFOA	54,433.08	29,350.89	88,052.66		41,793.42	83,586.83	
J6260-FS(0)	WGNA-052918-RW-3493	6/12/18 17:43	13C2-PFOA	52,441.71	29,350.89	88,052.66		41,793.42	83,586.83	
J6262-FS(0)	WGNA-052918-RW-3882	6/12/18 17:52	13C2-PFOA	66,948.59	29,350.89	88,052.66		41,793.42	83,586.83	
J6264-FS(0)	WGNA-052918-RW-3978	6/12/18 18:01	13C2-PFOA	42,085.38	29,350.89	88,052.66		41,793.42	83,586.83	
J6266-FS(0)	NAWC-052918-RW-161	6/12/18 18:10	13C2-PFOA	46,988.17	29,350.89	88,052.66		41,793.42	83,586.83	
J6270-FS(0)	WGNA-053018-RW-3876	6/12/18 18:19	13C2-PFOA	53,326.49	29,350.89	88,052.66		41,793.42	83,586.83	
JV69 CCV	CCV	6/12/18 18:27	13C2-PFOA	59,011.92	29,350.89	88,052.66		41,793.42	83,586.83	
J6272-FS(0)	WGNA-053018-DUP-37	6/12/18 18:36	13C2-PFOA	46,385.06	29,350.89	88,052.66		41,308.34	82,616.69	
J6273-FS(0)	NAWC-053018-RW-231	6/12/18 18:45	13C2-PFOA	52,187.27	29,350.89	88,052.66		41,308.34	82,616.69	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	13C2-PFOA	64,554.53	-	
JV66	L3	6/12/18 16:05	13C2-PFOA	54,463.23	-	
JV67	L4	6/12/18 16:14	13C2-PFOA	54,513.09	-	
JV68	L5	6/12/18 16:23	13C2-PFOA	57,342.63	-	
JV69	L6	6/12/18 16:32	13C2-PFOA	59,704.88	-	
JV70	L7	6/12/18 16:40	13C2-PFOA	55,898.24	-	
JV71	L8	6/12/18 16:49	13C2-PFOA	54,881.78	-	
JV72	L9	6/12/18 16:58	13C2-PFOA	68,255.79	5.6	PASS

Average	Lower	Upper
58,701.77	29,350.89	88,052.66

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6275-FS(0)	WGNA-053018-RW-3933	6/12/18 18:54	13C2-PFOA	55,544.96	29,350.89	88,052.66		41,308.34	82,616.69	
J6277-FS(0)	NAWC-053018-RW-164	6/12/18 19:03	13C2-PFOA	48,439.85	29,350.89	88,052.66		41,308.34	82,616.69	
J6279-FS(0)	NAWC-053018-RW-292	6/12/18 19:12	13C2-PFOA	53,372.20	29,350.89	88,052.66		41,308.34	82,616.69	
J6281-FS(0)	NAWC-053018-RW-271	6/12/18 19:21	13C2-PFOA	52,163.07	29,350.89	88,052.66		41,308.34	82,616.69	
J6283-FS(0)	NAWC-053018-RW-270	6/12/18 19:30	13C2-PFOA	50,529.43	29,350.89	88,052.66		41,308.34	82,616.69	
J6285-FS(0)	NAWC-053018-RW-196	6/12/18 19:39	13C2-PFOA	51,863.51	29,350.89	88,052.66		41,308.34	82,616.69	
J6287-FS(0)	NAWC-053018-RW-172	6/12/18 19:48	13C2-PFOA	54,098.71	29,350.89	88,052.66		41,308.34	82,616.69	
JV70 CCV	CCV	6/12/18 19:57	13C2-PFOA	56,830.73	29,350.89	88,052.66		41,308.34	82,616.69	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	d3-MeFOSAA	30,047.71	-	
JV66	L3	6/12/18 16:05	d3-MeFOSAA	29,451.11	-	
JV67	L4	6/12/18 16:14	d3-MeFOSAA	28,401.10	-	
JV68	L5	6/12/18 16:23	d3-MeFOSAA	29,501.89	-	
JV69	L6	6/12/18 16:32	d3-MeFOSAA	26,489.77	-	
JV70	L7	6/12/18 16:40	d3-MeFOSAA	28,765.47	-	
JV71	L8	6/12/18 16:49	d3-MeFOSAA	25,759.72	-	
JV72	L9	6/12/18 16:58	d3-MeFOSAA	34,157.92	12.8	PASS

Average	Lower	Upper
29,071.84	14,535.92	43,607.76

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV65	L2	6/12/18 15:56	d3-MeFOSAA	30,047.71	14,535.92	43,607.76		18,542.84	37,085.68	
JV66	L3	6/12/18 16:05	d3-MeFOSAA	29,451.11	14,535.92	43,607.76		18,542.84	37,085.68	
JV67	L4	6/12/18 16:14	d3-MeFOSAA	28,401.10	14,535.92	43,607.76		18,542.84	37,085.68	
JV68	L5	6/12/18 16:23	d3-MeFOSAA	29,501.89	14,535.92	43,607.76		18,542.84	37,085.68	
JV69	L6	6/12/18 16:32	d3-MeFOSAA	26,489.77	14,535.92	43,607.76		18,542.84	37,085.68	
JV70	L7	6/12/18 16:40	d3-MeFOSAA	28,765.47	14,535.92	43,607.76		18,542.84	37,085.68	
JV71	L8	6/12/18 16:49	d3-MeFOSAA	25,759.72	14,535.92	43,607.76		18,542.84	37,085.68	
JV72	L9	6/12/18 16:58	d3-MeFOSAA	34,157.92	14,535.92	43,607.76		18,542.84	37,085.68	
JV63 ICC	ICC	6/12/18 17:07	d3-MeFOSAA	24,696.95	14,535.92	43,607.76		18,542.84	37,085.68	
CQ870PB-FS(0)	Procedural Blank	6/12/18 17:16	d3-MeFOSAA	24,513.53	14,535.92	43,607.76		18,542.84	37,085.68	
CQ871LCS-FS(0)	Laboratory Control Sample	6/12/18 17:25	d3-MeFOSAA	23,938.40	14,535.92	43,607.76		18,542.84	37,085.68	
J6258-FS(0)	WGNA-052918-RW-3124	6/12/18 17:34	d3-MeFOSAA	24,921.35	14,535.92	43,607.76		18,542.84	37,085.68	
J6260-FS(0)	WGNA-052918-RW-3493	6/12/18 17:43	d3-MeFOSAA	25,292.77	14,535.92	43,607.76		18,542.84	37,085.68	
J6262-FS(0)	WGNA-052918-RW-3882	6/12/18 17:52	d3-MeFOSAA	27,867.86	14,535.92	43,607.76		18,542.84	37,085.68	
J6264-FS(0)	WGNA-052918-RW-3978	6/12/18 18:01	d3-MeFOSAA	16,633.31	14,535.92	43,607.76		18,542.84	37,085.68	N 1
J6266-FS(0)	NAWC-052918-RW-161	6/12/18 18:10	d3-MeFOSAA	19,968.15	14,535.92	43,607.76		18,542.84	37,085.68	
J6270-FS(0)	WGNA-053018-RW-3876	6/12/18 18:19	d3-MeFOSAA	23,622.47	14,535.92	43,607.76		18,542.84	37,085.68	
JV69 CCV	CCV	6/12/18 18:27	d3-MeFOSAA	28,673.97	14,535.92	43,607.76		18,542.84	37,085.68	
J6272-FS(0)	WGNA-053018-DUP-37	6/12/18 18:36	d3-MeFOSAA	20,387.57	14,535.92	43,607.76		20,071.78	40,143.56	
J6273-FS(0)	NAWC-053018-RW-231	6/12/18 18:45	d3-MeFOSAA	23,179.84	14,535.92	43,607.76		20,071.78	40,143.56	

1 - sample rerun and reported with dilution method, see miscellaneous documentation for details. JRT 6/21/2018

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/12/18 15:56	d3-MeFOSAA	30,047.71	-	
JV66	L3	6/12/18 16:05	d3-MeFOSAA	29,451.11	-	
JV67	L4	6/12/18 16:14	d3-MeFOSAA	28,401.10	-	
JV68	L5	6/12/18 16:23	d3-MeFOSAA	29,501.89	-	
JV69	L6	6/12/18 16:32	d3-MeFOSAA	26,489.77	-	
JV70	L7	6/12/18 16:40	d3-MeFOSAA	28,765.47	-	
JV71	L8	6/12/18 16:49	d3-MeFOSAA	25,759.72	-	
JV72	L9	6/12/18 16:58	d3-MeFOSAA	34,157.92	12.8	PASS

Average	Lower	Upper
29,071.84	14,535.92	43,607.76

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6275-FS(0)	WGNA-053018-RW-3933	6/12/18 18:54	d3-MeFOSAA	24,444.25	14,535.92	43,607.76		20,071.78	40,143.56	
J6277-FS(0)	NAWC-053018-RW-164	6/12/18 19:03	d3-MeFOSAA	20,180.76	14,535.92	43,607.76		20,071.78	40,143.56	
J6279-FS(0)	NAWC-053018-RW-292	6/12/18 19:12	d3-MeFOSAA	22,574.43	14,535.92	43,607.76		20,071.78	40,143.56	
J6281-FS(0)	NAWC-053018-RW-271	6/12/18 19:21	d3-MeFOSAA	23,039.11	14,535.92	43,607.76		20,071.78	40,143.56	
J6283-FS(0)	NAWC-053018-RW-270	6/12/18 19:30	d3-MeFOSAA	21,960.54	14,535.92	43,607.76		20,071.78	40,143.56	
J6285-FS(0)	NAWC-053018-RW-196	6/12/18 19:39	d3-MeFOSAA	21,907.00	14,535.92	43,607.76		20,071.78	40,143.56	
J6287-FS(0)	NAWC-053018-RW-172	6/12/18 19:48	d3-MeFOSAA	24,066.54	14,535.92	43,607.76		20,071.78	40,143.56	
JV70 CCV	CCV	6/12/18 19:57	d3-MeFOSAA	26,847.56	14,535.92	43,607.76		20,071.78	40,143.56	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV65	L2	6/14/18 17:08	13C4-PFOS	171,472.33	-	
JV66	L3	6/14/18 17:17	13C4-PFOS	175,183.49	-	
JV67	L4	6/14/18 17:26	13C4-PFOS	183,218.28	-	
JV68	L5	6/14/18 17:35	13C4-PFOS	184,815.34	-	
JV69	L6	6/14/18 17:44	13C4-PFOS	190,902.07	-	
JV70	L7	6/14/18 17:53	13C4-PFOS	158,687.91	-	
JV71	L8	6/14/18 18:02	13C4-PFOS	174,160.49	-	
JV72	L9	6/14/18 18:11	13C4-PFOS	186,617.72	8.5	PASS

Average	Lower	Upper
178,132.20	89,066.10	267,198.30

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV64	L1	6/14/18 16:59	13C4-PFOS	173,918.05	89,066.10	267,198.30		122,628.44	245,256.89	
JV65	L2	6/14/18 17:08	13C4-PFOS	171,472.33	89,066.10	267,198.30		122,628.44	245,256.89	
JV66	L3	6/14/18 17:17	13C4-PFOS	175,183.49	89,066.10	267,198.30		122,628.44	245,256.89	
JV67	L4	6/14/18 17:26	13C4-PFOS	183,218.28	89,066.10	267,198.30		122,628.44	245,256.89	
JV68	L5	6/14/18 17:35	13C4-PFOS	184,815.34	89,066.10	267,198.30		122,628.44	245,256.89	
JV69	L6	6/14/18 17:44	13C4-PFOS	190,902.07	89,066.10	267,198.30		122,628.44	245,256.89	
JV70	L7	6/14/18 17:53	13C4-PFOS	158,687.91	89,066.10	267,198.30		122,628.44	245,256.89	
JV71	L8	6/14/18 18:02	13C4-PFOS	174,160.49	89,066.10	267,198.30		122,628.44	245,256.89	
JV72	L9	6/14/18 18:11	13C4-PFOS	186,617.72	89,066.10	267,198.30		122,628.44	245,256.89	
JV63 ICC	ICC	6/14/18 18:20	13C4-PFOS	181,871.52	89,066.10	267,198.30		122,628.44	245,256.89	
J6264-FS(0)	WGNA-052918-RW-3978	6/14/18 19:22	13C4-PFOS	123,093.54	89,066.10	267,198.30		122,628.44	245,256.89	
J6273-FS-D(3)	NAWC-050318-RW-231	6/14/18 20:16	13C4-PFOS	128,628.34	89,066.10	267,198.30		122,628.44	245,256.89	
JV70 CCV	CCV	6/14/18 21:36	13C4-PFOS	185,911.85	89,066.10	267,198.30		122,628.44	245,256.89	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

BATTELLE
It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JV64	L1	6/14/18 16:59	d3-MeFOSAA	27,400.65	-	
JV65	L2	6/14/18 17:08	d3-MeFOSAA	26,560.24	-	
JV66	L3	6/14/18 17:17	d3-MeFOSAA	26,965.18	-	
JV67	L4	6/14/18 17:26	d3-MeFOSAA	26,904.87	-	
JV68	L5	6/14/18 17:35	d3-MeFOSAA	29,945.65	-	
JV69	L6	6/14/18 17:44	d3-MeFOSAA	31,231.68	-	
JV70	L7	6/14/18 17:53	d3-MeFOSAA	27,896.75	-	
JV71	L8	6/14/18 18:02	d3-MeFOSAA	29,364.62	6.9	PASS

Average	Lower	Upper
28,283.71	14,141.86	42,425.57

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JV64	L1	6/14/18 16:59	d3-MeFOSAA	27,400.65	14,141.86	42,425.57		18,875.63	37,751.25	
JV65	L2	6/14/18 17:08	d3-MeFOSAA	26,560.24	14,141.86	42,425.57		18,875.63	37,751.25	
JV66	L3	6/14/18 17:17	d3-MeFOSAA	26,965.18	14,141.86	42,425.57		18,875.63	37,751.25	
JV67	L4	6/14/18 17:26	d3-MeFOSAA	26,904.87	14,141.86	42,425.57		18,875.63	37,751.25	
JV68	L5	6/14/18 17:35	d3-MeFOSAA	29,945.65	14,141.86	42,425.57		18,875.63	37,751.25	
JV69	L6	6/14/18 17:44	d3-MeFOSAA	31,231.68	14,141.86	42,425.57		18,875.63	37,751.25	
JV70	L7	6/14/18 17:53	d3-MeFOSAA	27,896.75	14,141.86	42,425.57		18,875.63	37,751.25	
JV71	L8	6/14/18 18:02	d3-MeFOSAA	29,364.62	14,141.86	42,425.57		18,875.63	37,751.25	
JV72	L9	6/14/18 18:11	d3-MeFOSAA	33,539.90	14,141.86	42,425.57		18,875.63	37,751.25	
JV63 ICC	ICC	6/14/18 18:20	d3-MeFOSAA	29,716.93	14,141.86	42,425.57		18,875.63	37,751.25	
J6264-FS(0)	WGNA-052918-RW-3978	6/14/18 19:22	d3-MeFOSAA	19,049.25	14,141.86	42,425.57		18,875.63	37,751.25	
J6273-FS-D(3)	NAWC-050318-RW-231	6/14/18 20:16	d3-MeFOSAA	21,272.16	14,141.86	42,425.57		18,875.63	37,751.25	
JV70 CCV	CCV	6/14/18 21:36	d3-MeFOSAA	29,545.42	14,141.86	42,425.57		18,875.63	37,751.25	

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Summary Asymmetry Report

Created with Analyst Reporter
Printed: 15/06/2018 10:49:03 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 4:40:56 PM	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.54	1.16	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.83	1.31	0.8 – 1.5

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Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 15/06/2018 10:50:12 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 4:40:56 PM	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.54	25	>10
PFBS_2	298.9 / 99.0	1.53	37	>10
PFHxA_1	313.0 / 269.0	1.83	24	>10
PFHxA_2	313.0 / 119.0	1.83	32	>10
PFHpA_1	363.0 / 319.0	2.20	28	>10
PFHpA_2	363.0 / 169.0	2.20	31	>10
PFHxS_1	399.0 / 80.0	2.22	28	>10
PFHxS_2	399.0 / 99.0	2.22	28	>10
PFOA_1	413.0 / 369.0	2.59	31	>10
PFOA_2	413.0 / 169.0	2.58	36	>10
PFNA_1	463.0 / 419.0	2.96	31	>10
PFNA_2	463.0 / 219.0	2.96	27	>10
PFOS_1	499.0 / 80.0	2.96	29	>10
PFOS_2	499.0 / 99.0	2.96	25	>10
PFDA_1	513.0 / 469.0	3.32	28	>10
PFDA_2	513.0 / 219.0	3.32	23	>10
PFUnA_1	563.0 / 519.0	3.64	32	>10
PFUnA_2	563.0 / 269.0	3.64	27	>10
PFDoA_1	613.0 / 569.0	3.93	32	>10
PFDoA_2	613.0 / 319.0	3.93	35	>10
PFTrDA_1	663.0 / 619.0	4.18	37	>10
PFTrDA_2	663.0 / 169.0	4.18	41	>10
PFTeDA_1	713.0 / 669.0	4.40	56	>10
PFTeDA_2	713.0 / 169.0	4.40	47	>10
NMeFOSAA_1	570.0 / 419.0	3.47	43	>10
NMeFOSAA_2	570.0 / 512.0	3.47	43	>10
NEtFOSAA_1	584.0 / 419.0	3.63	33	>10
NEtFOSAA_2	584.0 / 483.0	3.62	37	>10
13C2-PFHxA	315.0 / 270.0	1.82	34	>10
13C2-PFDA	515.0 / 470.0	3.31	33	>10
d5-EtFOSAA	589.0 / 419.0	3.62	26	>10

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Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 15/06/2018 10:50:48 AM

Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 5:53:22 PM	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFOS_1	499.0 / 80.0	2.93	26	>10
PFOS_2	499.0 / 99.0	2.93	27	>10
NMeFOSAA_1	570.0 / 419.0	3.44	40	>10
NMeFOSAA_2	570.0 / 512.0	3.44	38	>10
NEtFOSAA_1	584.0 / 419.0	3.60	37	>10
NEtFOSAA_2	584.0 / 483.0	3.59	46	>10
d5-EtFOSAA	589.0 / 419.0	3.59	33	>10

BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

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

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

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

800.201.2011 | solutions@battelle.org | www.battelle.org

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ID 626 04/18

Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFBS	375-73-5	Target	298.9.0 / 80.0	298.9.0 / 99.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
13C2-PFHxA	NA	SIS	315.0 / 270.0	NA
13C2-PFDA	NA	SIS	515.0 / 470.0	NA
d5-EtFOSAA	NA	SIS	589.0 / 419.0	NA
$^{13}C_2$-PFOA	NA	IS	415.0 / 270.0	NA
$^{13}C_4$-PFOS	NA	IS	503.0 / 80.0	NA
d3-MeFOSAA	NA	IS	573.0 / 419.0	NA

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

Mass calibration and Tune Check

QTRAP 5500
Preventive Maintenance Checklist

Preventive Maintenance Date:	22-Feb-2017

Request ID:	3683
Company Name:	Battelle Memorial Institute
Instrument ID:	X60666
Instrument Model:	QTRAP 5500
Instrument Serial Number:	AU23051004

☑ **PASS** ☐ **FAIL**

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

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

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

Comments:_____

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

Approved By :_____ **Date:** _____

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PRE PM PPG PERFORMANCE EVALUATION:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.5	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.9	Read Only
☑ CAD Medium	2.4	Read Only
☑ CAD High	3.4	Read Only
☑ CAD 12	3.4	2.4 to 4.5 x10^{-5} Torr

☑ Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification

☑ No degradation or Sensitivity drop

☑ Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification

☑ No degradation or Sensitivity drop

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

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

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

☑ Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: :__19.51%__ (Read Only)

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

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

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

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

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PREVENTIVE MAINTENANCE CHECKLIST:

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

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

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

☑Pump down overnight if possible. ☐ N/A

☑Perform Maintenance on Turbo V source.

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

POST PM PPG PERFORMANCE TESTS:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.8	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	2.1	Read Only
☑ CAD Medium	2.6	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2^{e}6	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0^{e}6	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4^{e}7	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	0.7656	0.6 to 0.8

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

Mass	Q3 Intensity		Q3 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2^{e}6	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0^{e}6	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4^{e}7	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8^{e}7	0.7118	0.6 to 0.8

☑ Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.
Transmission Efficiency: 16.93% (≥ 10.0%)

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.31 e7	≥1.0^{e}7	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	≥4.0^{e}7	0.6740	0.6 to 0.8

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

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10	1.70 e7	≥8.0^{e}6	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	≥4.0^{e}7	0.7292	0.6 to 0.8

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

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

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

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05	8.08 e6	≥7.2 ^{e}6	0.1302	<0.35
ER 922.010	0.05	3.89 e7	≥2.8 ^{e}6	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	≥2.4 ^{e}7	0.3740	<0.65
ER 922.010	0.05	2.37 e8	≥6.8 ^{e}7	0.5407	<0.65

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

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05	1.05 e8	≥4.4 ^{e}7	0.1840	<0.35
ER 601.978	0.05	7.74 e7	≥5.6 ^{e}7	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	≥1.2 ^{e}8	0.4382	<0.65
ER 601.978	0.05	2.55 e8	≥1.6 ^{e}8	0.6205	<0.65

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

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

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

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000	3.2 e7	Contains only 397.2	N/A	N/A
☐ 236 OR ☑ 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10e6

REVIEW:

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

END OF PREVENTIVE MAINTENANCE CHECKLIST

Document history:

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

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BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	**Project No.(s)**
Naval Air Station Joint Reserve Base Willow Grove, PA	100117920-WE04

18-0343

WE04 PFAS Analysis

DW

SOP Numbers (see workplan for modifications)

VOASOP No. 5-371

This Batch Contains The Following Samples:		
CQ870PB-FS	J6266-FS	J6279-FS
CQ871LCS-FS	J6270-FS	J6281-FS
J6258-FS	J6272-FS	J6283-FS
J6260-FS	J6273-FS	J6285-FS
J6262-FS	J6275-FS	J6287-FS
J6264-FS	J6277-FS	

Laboratory Preparation Records

COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	06/11/2018	DMS

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BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343

WE04 PFAS Analysis

DW

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CQ870PB-FS	Procedural Blank	250.0	NA	--	06/01/18 SAS
CQ871LCS-FS	Laboratory Control Sample	250.0	NA	--	06/01/18 SAS
J6258-FS	WGNA-052918-RW-3124	260.0	1	C	06/04/18 SAS
J6260-FS	WGNA-052918-RW-3493	275.0	1	C	06/04/18 SAS
J6262-FS	WGNA-052918-RW-3882	290.0	1	C	06/04/18 SAS
J6264-FS	WGNA-052918-RW-3978	270.0	1	C	06/04/18 SAS
J6266-FS	NAWC-052918-RW-161	290.0	1	C	06/04/18 SAS
J6270-FS	WGNA-053018-RW-3876	275.0	1	C	06/04/18 SAS
J6272-FS	WGNA-053018-DUP-37	275.0	1	C	06/04/18 SAS
J6273-FS	NAWC-053018-RW-231	285.0	1	C	06/04/18 SAS
J6275-FS	WGNA-053018-RW-3933	285.0	1	C	06/04/18 SAS
J6277-FS	NAWC-053018-RW-164	270.0	1	C	06/04/18 SAS
J6279-FS	NAWC-053018-RW-292	285.0	1	C	06/04/18 SAS
J6281-FS	NAWC-053018-RW-271	275.0	1	C	06/04/18 SAS
J6283-FS	NAWC-053018-RW-270	275.0	1	C	06/04/18 SAS
J6285-FS	NAWC-053018-RW-196	275.0	1	C	06/04/18 SAS
J6287-FS	NAWC-053018-RW-172	270.0	1	C	06/04/18 SAS

Comments:

Sample ID:	Comments:
CQ870PB-FS	1.24g Trizma(180502-01) weighed on BAL-009
CQ871LCS-FS	1.27g Trizma(180502-01) weighed on BAL-009

Samples Assigned By Stephanie Schultz Date : June 11, 2018

* - "C" = Sample is Consumed

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BATTELLE - NORWELL OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0343
WE04 PFAS Analysis
DW

(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
CQ870PB-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
CQ871LCS-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6258-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6260-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6262-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6264-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6266-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6270-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6272-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6273-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6273-FS-D(3)	952	48	JV59	50.5	1	1000	20.000	06/14/18 DMS	SAS
J6275-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6277-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6279-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6281-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6283-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6285-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR
J6287-FS(0)	950	50	JV59	50	1	1000	1.000	06/06/18 SAS	RR

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

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

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Sequence Report

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Printed: 15/06/2018 10:18:19 AM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		6/12/2018 3:38:26 PM	5-0371.dam	5500_06122018.wiff
2	JV64	L1	6/12/2018 3:47:21 PM	5-0371.dam	5500_06122018.wiff
3	JV65	L2	6/12/2018 3:56:17 PM	5-0371.dam	5500_06122018.wiff
4	JV66	L3	6/12/2018 4:05:13 PM	5-0371.dam	5500_06122018.wiff
5	JV67	L4	6/12/2018 4:14:09 PM	5-0371.dam	5500_06122018.wiff
6	JV68	L5	6/12/2018 4:23:04 PM	5-0371.dam	5500_06122018.wiff
7	JV69	L6	6/12/2018 4:32:01 PM	5-0371.dam	5500_06122018.wiff
8	JV70	L7	6/12/2018 4:40:56 PM	5-0371.dam	5500_06122018.wiff
9	JV71	L8	6/12/2018 4:49:51 PM	5-0371.dam	5500_06122018.wiff
10	JV72	L9	6/12/2018 4:58:44 PM	5-0371.dam	5500_06122018.wiff
11	JV63 ICC	ICC	6/12/2018 5:07:40 PM	5-0371.dam	5500_06122018.wiff
12	CQ870PB-FS(0)	Procedural Blank	6/12/2018 5:16:36 PM	5-0371.dam	5500_06122018.wiff
13	CQ871LCS-FS(0)	Laboratory Control Sample	6/12/2018 5:25:31 PM	5-0371.dam	5500_06122018.wiff
14	J6258-FS(0)	WGNA-052918-RW-3124	6/12/2018 5:34:27 PM	5-0371.dam	5500_06122018.wiff
15	J6260-FS(0)	WGNA-052918-RW-3493	6/12/2018 5:43:21 PM	5-0371.dam	5500_06122018.wiff
16	J6262-FS(0)	WGNA-052918-RW-3882	6/12/2018 5:52:16 PM	5-0371.dam	5500_06122018.wiff
17	J6264-FS(0)	WGNA-052918-RW-3978	6/12/2018 6:01:12 PM	5-0371.dam	5500_06122018.wiff
18	J6266-FS(0)	NAWC-052918-RW-161	6/12/2018 6:10:07 PM	5-0371.dam	5500_06122018.wiff
19	J6270-FS(0)	WGNA-053018-RW-3876	6/12/2018 6:19:01 PM	5-0371.dam	5500_06122018.wiff
20	JV69 CCV	CCV	6/12/2018 6:27:56 PM	5-0371.dam	5500_06122018.wiff
21	J6272-FS(0)	WGNA-053018-DUP-37	6/12/2018 6:36:51 PM	5-0371.dam	5500_06122018.wiff
22	J6273-FS(0)	NAWC-053018-RW-231	6/12/2018 6:45:47 PM	5-0371.dam	5500_06122018.wiff
23	J6275-FS(0)	WGNA-053018-RW-3933	6/12/2018 6:54:42 PM	5-0371.dam	5500_06122018.wiff
24	J6277-FS(0)	NAWC-053018-RW-164	6/12/2018 7:03:37 PM	5-0371.dam	5500_06122018.wiff
25	J6279-FS(0)	NAWC-053018-RW-292	6/12/2018 7:12:32 PM	5-0371.dam	5500_06122018.wiff
26	J6281-FS(0)	NAWC-053018-RW-271	6/12/2018 7:21:26 PM	5-0371.dam	5500_06122018.wiff
27	J6283-FS(0)	NAWC-053018-RW-	6/12/2018 7:30:21	5-0371.dam	5500_06122018.wiff

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Sequence Report

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Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
		270	PM		
28	J6285-FS(0)	NAWC-053018-RW-196	6/12/2018 7:39:16 PM	5-0371.dam	5500_06122018.wiff
29	J6287-FS(0)	NAWC-053018-RW-172	6/12/2018 7:48:13 PM	5-0371.dam	5500_06122018.wiff
30	JV70 CCV	CCV	6/12/2018 7:57:07 PM	5-0371.dam	5500_06122018.wiff

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Sequence Report

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Printed: 15/06/2018 10:13:29 AM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		6/14/2018 4:50:52 PM	5-0371.dam	06142018.wiff
2	JV64	L1	6/14/2018 4:59:48 PM	5-0371.dam	06142018.wiff
3	JV65	L2	6/14/2018 5:08:44 PM	5-0371.dam	06142018.wiff
4	JV66	L3	6/14/2018 5:17:40 PM	5-0371.dam	06142018.wiff
5	JV67	L4	6/14/2018 5:26:35 PM	5-0371.dam	06142018.wiff
6	JV68	L5	6/14/2018 5:35:30 PM	5-0371.dam	06142018.wiff
7	JV69	L6	6/14/2018 5:44:26 PM	5-0371.dam	06142018.wiff
8	JV70	L7	6/14/2018 5:53:22 PM	5-0371.dam	06142018.wiff
9	JV71	L8	6/14/2018 6:02:19 PM	5-0371.dam	06142018.wiff
10	JV72	L9	6/14/2018 6:11:15 PM	5-0371.dam	06142018.wiff
11	JV63 ICC	ICC	6/14/2018 6:20:10 PM	5-0371.dam	06142018.wiff
12	MeOH		6/14/2018 6:29:05 PM	5-0371.dam	06142018.wiff
18	J6264-FS(0)	WGNA-052918-RW-3978	6/14/2018 7:22:36 PM	5-0371.dam	06142018.wiff
31	J6273-FS-D(3)	NAWC-050318-RW-231	6/14/2018 8:16:14 PM	5-0371.dam	06142018.wiff
8	JV70 CCV	CCV	6/14/2018 9:36:35 PM	5-0371.dam	06142018.wiff

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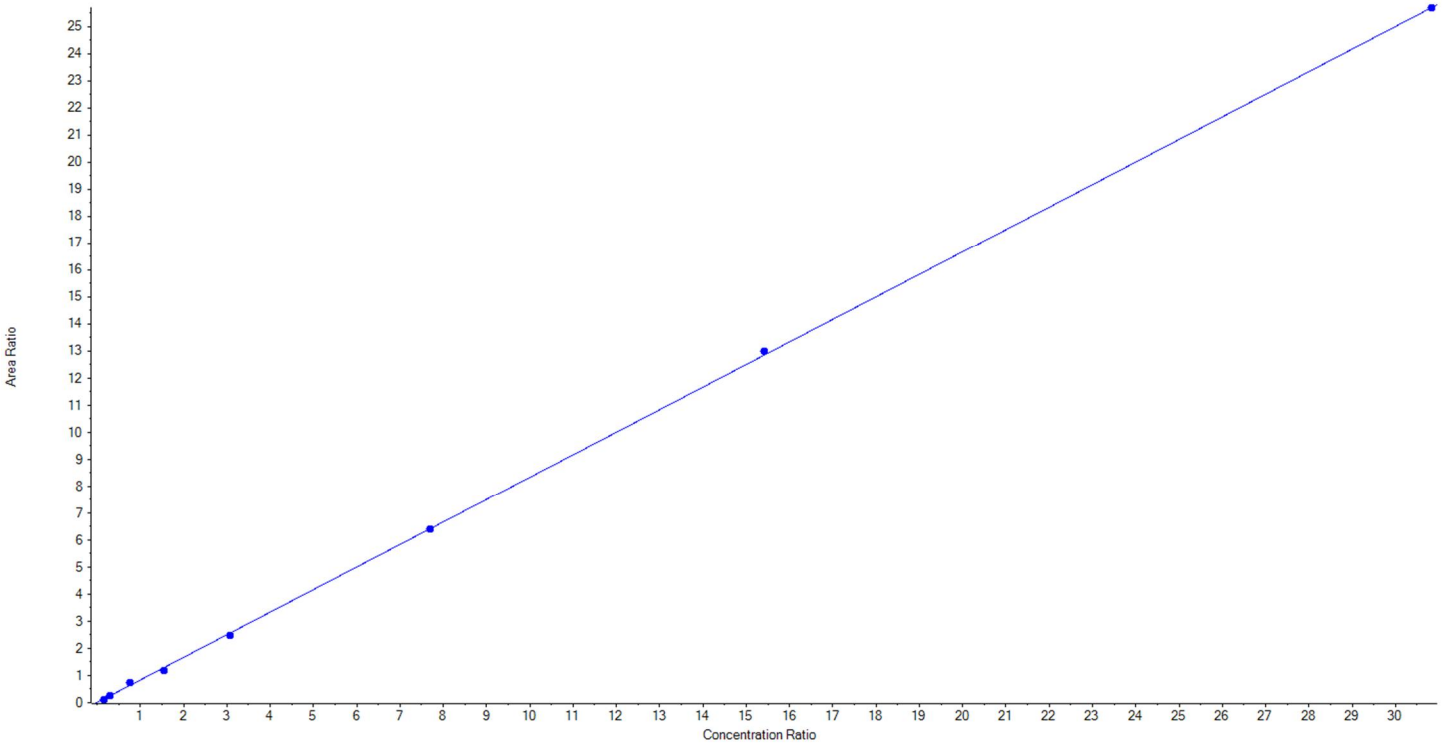
Calibration Summary Report

Analyte Name	PFBS_1	**Data File**	5500_06122018.wiff
MRM Transition	298.9 / 80.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.83341 x + 0.00340 (r = 0.99975) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.15	N/A	N/A
3	JV65	L2	True	44.30	43.213844	97.6
4	JV66	L3	True	88.60	89.988738	101.6
5	JV67	L4	True	221.50	247.673064	111.8
6	JV68	L5	True	443.00	403.940540	91.2
7	JV69	L6	True	885.00	859.283953	97.1
8	JV70	L7	True	2212.50	2207.781220	99.8
9	JV71	L8	True	4425.00	4470.852431	101.0
10	JV72	L9	True	8850.00	8847.166208	100.0



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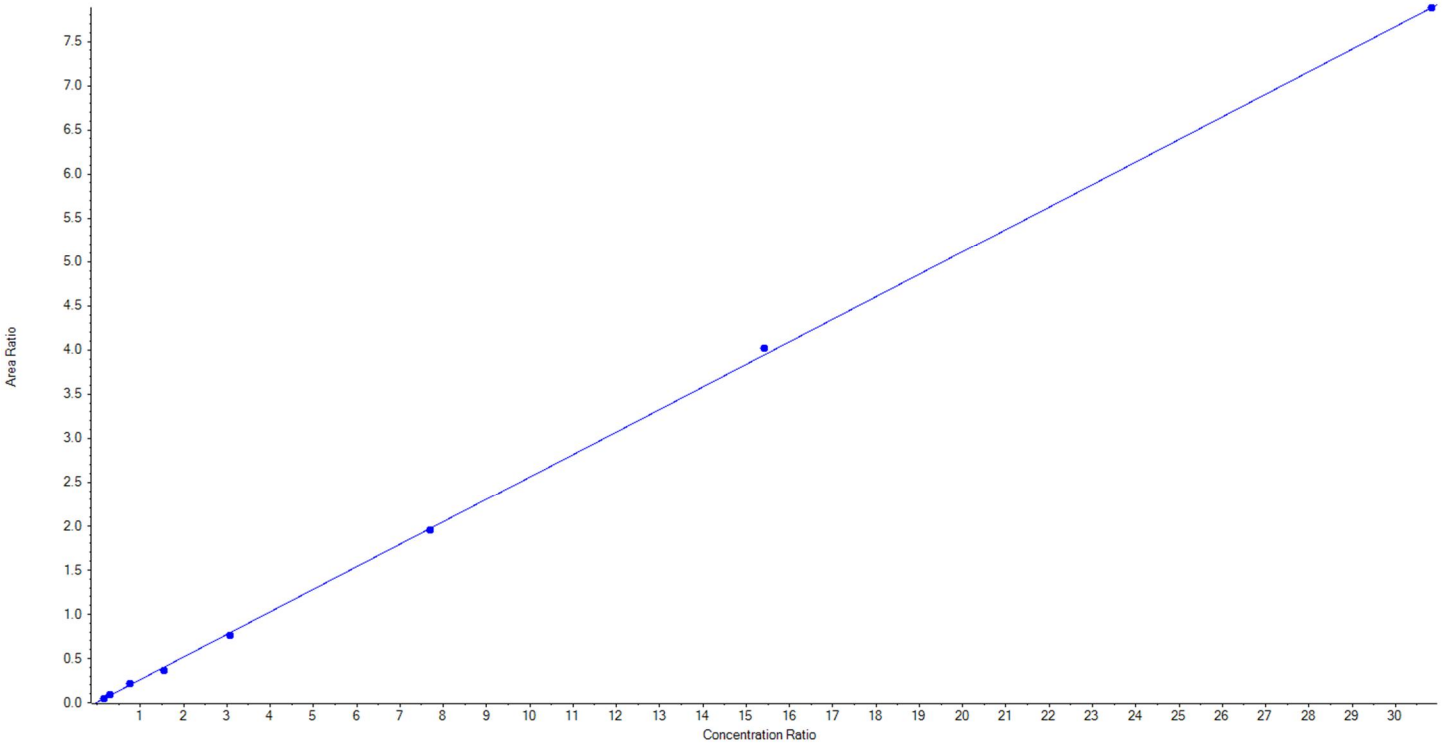
Calibration Summary Report

Analyte Name	PFBS_2	**Data File**	5500_06122018.wiff
MRM Transition	298.9 / 99.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.25546 x + 0.00523 (r = 0.99971) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.15	N/A	N/A
3	JV65	L2	True	44.30	45.544704	102.8
4	JV66	L3	True	88.60	90.777650	102.5
5	JV67	L4	True	221.50	239.032605	107.9
6	JV68	L5	True	443.00	401.078422	90.5
7	JV69	L6	True	885.00	842.792276	95.2
8	JV70	L7	True	2212.50	2194.855139	99.2
9	JV71	L8	True	4425.00	4507.631063	101.9
10	JV72	L9	True	8850.00	8848.188142	100.0



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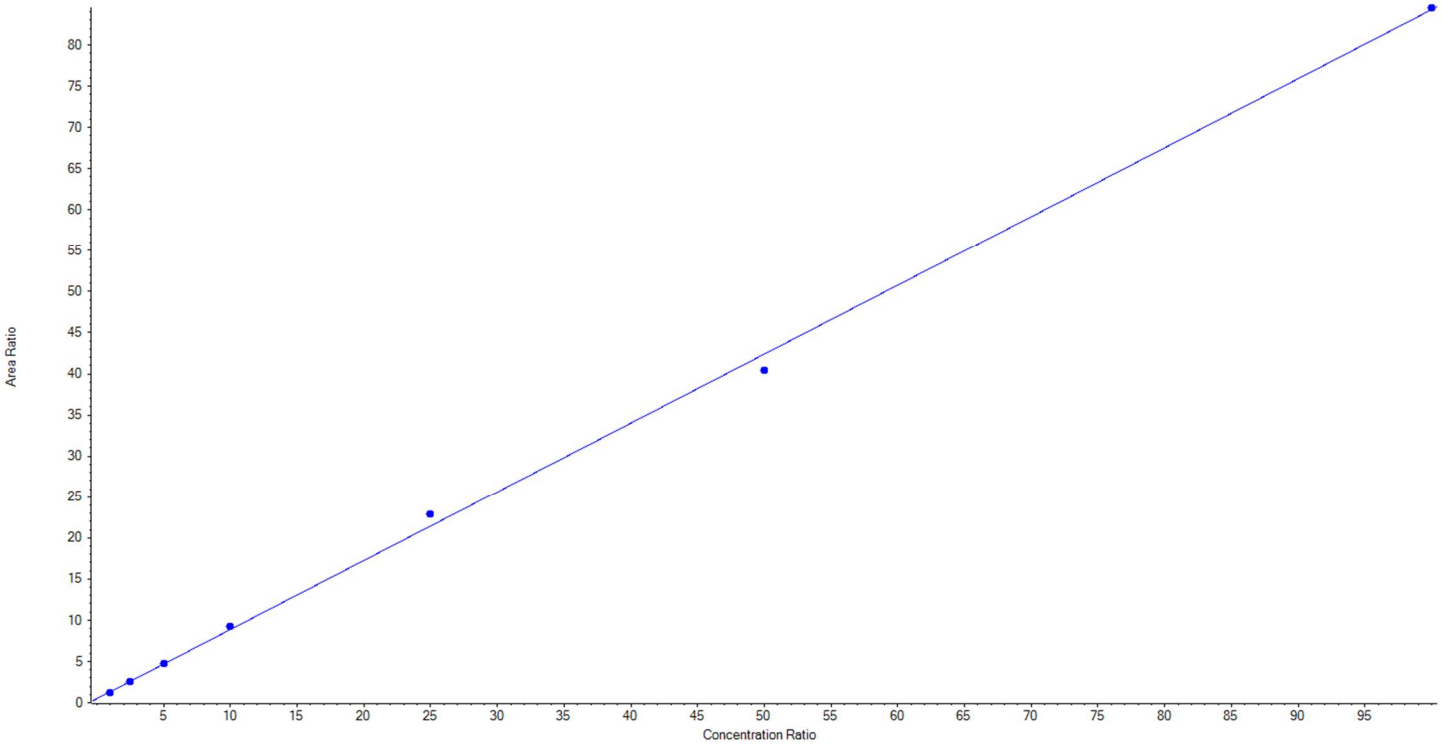
Calibration Summary Report

Analyte Name	PFHxA_1	**Data File**	5500_06122018.wiff
MRM Transition	313.0 / 269.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.83805 x + 0.49545 (r = 0.99927) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	False	50.00	N/A	N/A
4	JV66	L3	True	100.00	93.424536	93.4
5	JV67	L4	True	250.00	248.896045	99.6
6	JV68	L5	True	500.00	502.164583	100.4
7	JV69	L6	True	1000.00	1042.105925	104.2
8	JV70	L7	True	2500.00	2668.171989	106.7
9	JV71	L8	True	5000.00	4769.428796	95.4
10	JV72	L9	True	10000.00	10025.808125	100.3



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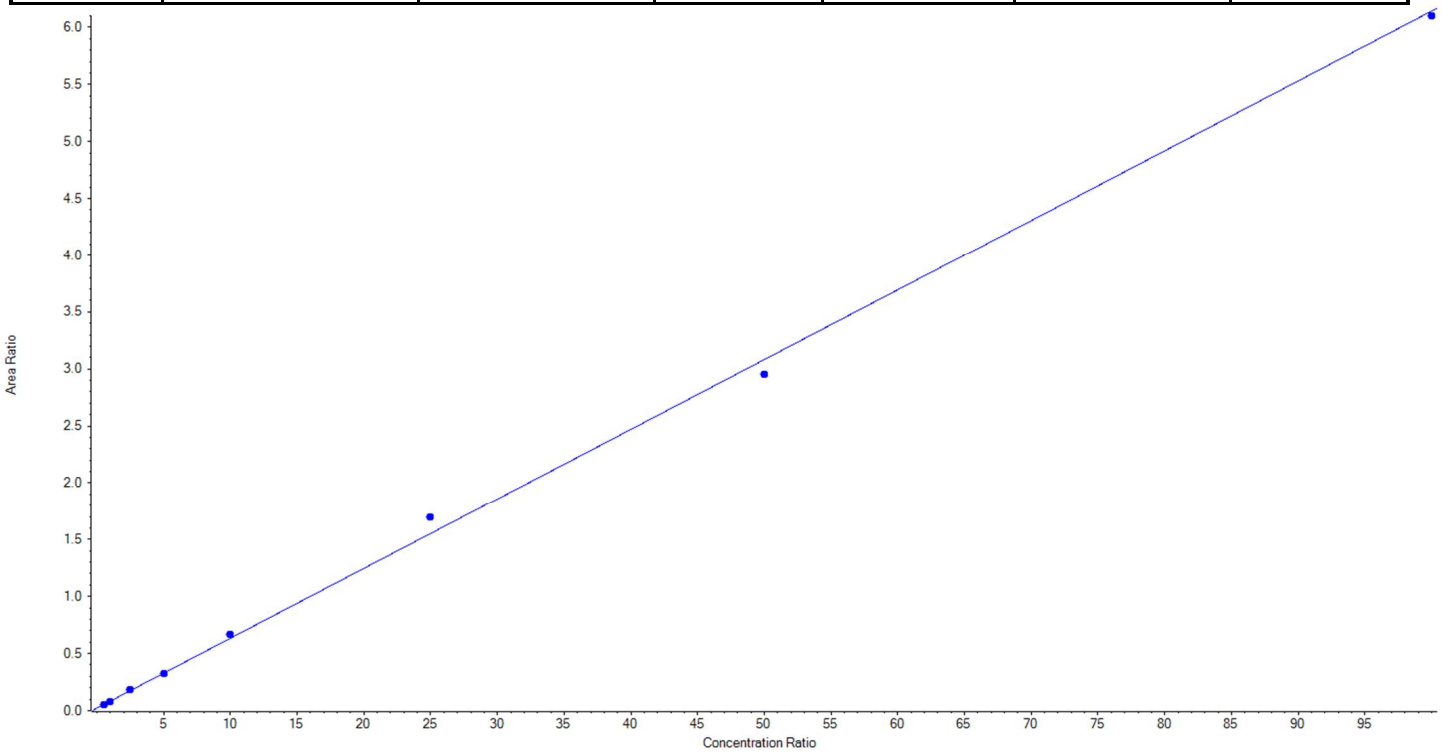
Calibration Summary Report

Analyte Name	PFHxA_2	**Data File**	5500_06122018.wiff
MRM Transition	313.0 / 119.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.06120 x + 0.02261 (r = 0.99897) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	49.540681	99.1
4	JV66	L3	True	100.00	87.486557	87.5
5	JV67	L4	True	250.00	263.369148	105.4
6	JV68	L5	True	500.00	490.613382	98.1
7	JV69	L6	True	1000.00	1055.712476	105.6
8	JV70	L7	True	2500.00	2732.015423	109.3
9	JV71	L8	True	5000.00	4789.725663	95.8
10	JV72	L9	True	10000.00	9931.536669	99.3



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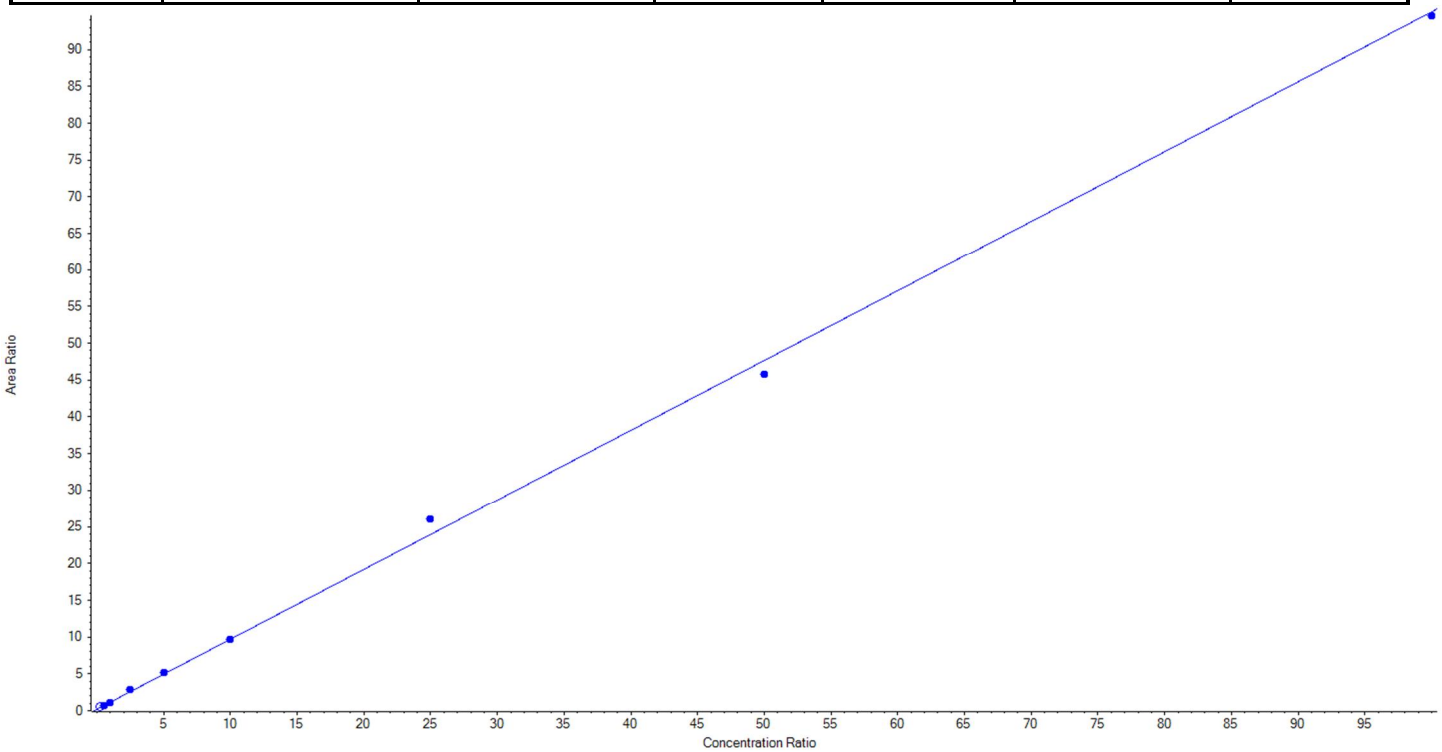
Calibration Summary Report

Analyte Name	PFHpA_1	**Data File**	5500_06122018.wiff
MRM Transition	363.0 / 319.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.94912 x + 0.20808 (r = 0.99907) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	29.060439	116.2
3	JV65	L2	True	50.00	42.712949	85.4
4	JV66	L3	True	100.00	95.603273	95.6
5	JV67	L4	True	250.00	273.571001	109.4
6	JV68	L5	True	500.00	530.187129	106.0
7	JV69	L6	True	1000.00	992.178774	99.2
8	JV70	L7	True	2500.00	2720.096808	108.8
9	JV71	L8	True	5000.00	4802.675276	96.1
10	JV72	L9	True	10000.00	9942.974789	99.4



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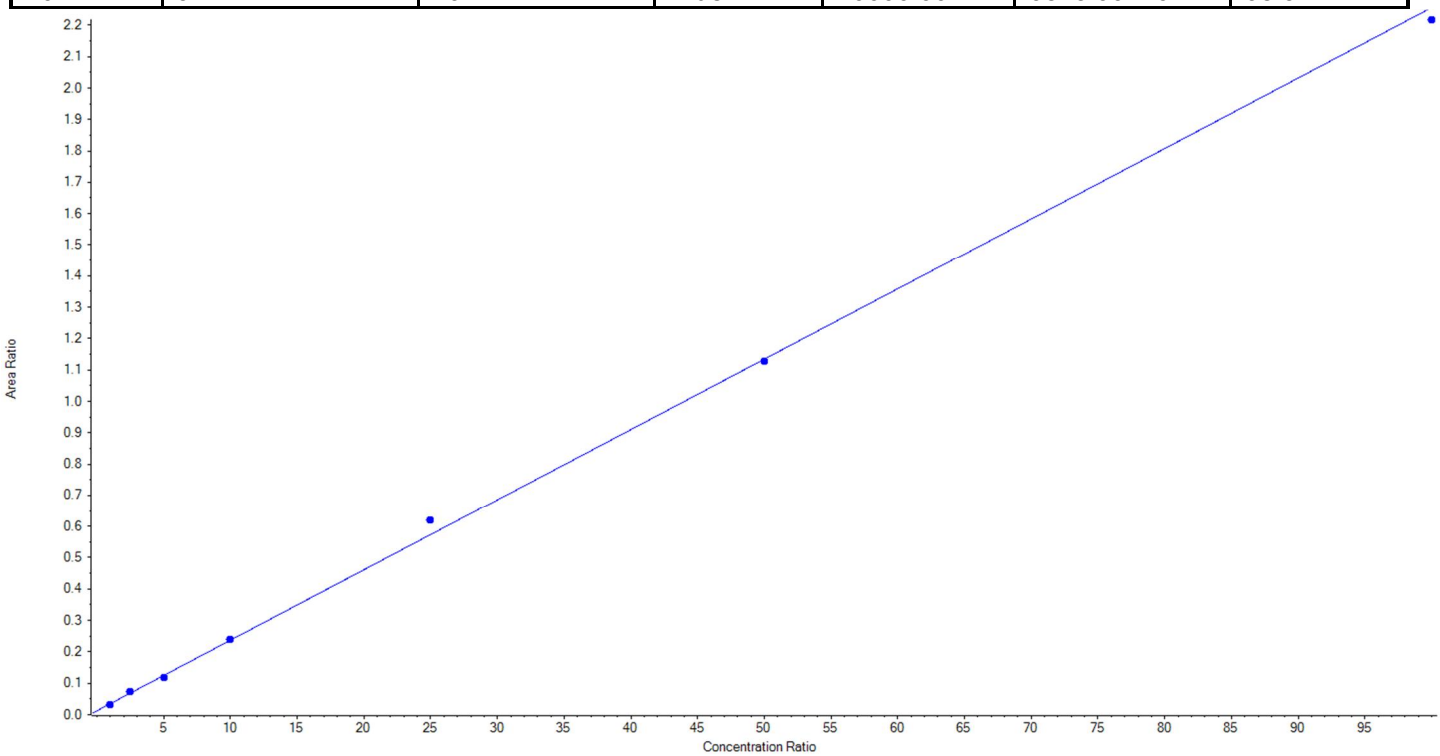
Calibration Summary Report

Analyte Name	PFHpA_2	**Data File**	5500_06122018.wiff
MRM Transition	363.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.02243 x + 0.01260 (r = 0.99918) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	False	50.00	N/A	N/A
4	JV66	L3	True	100.00	86.912658	86.9
5	JV67	L4	True	250.00	277.726029	111.1
6	JV68	L5	True	500.00	474.792061	95.0
7	JV69	L6	True	1000.00	1011.164660	101.1
8	JV70	L7	True	2500.00	2709.693669	108.4
9	JV71	L8	True	5000.00	4963.719656	99.3
10	JV72	L9	True	10000.00	9825.991267	98.3



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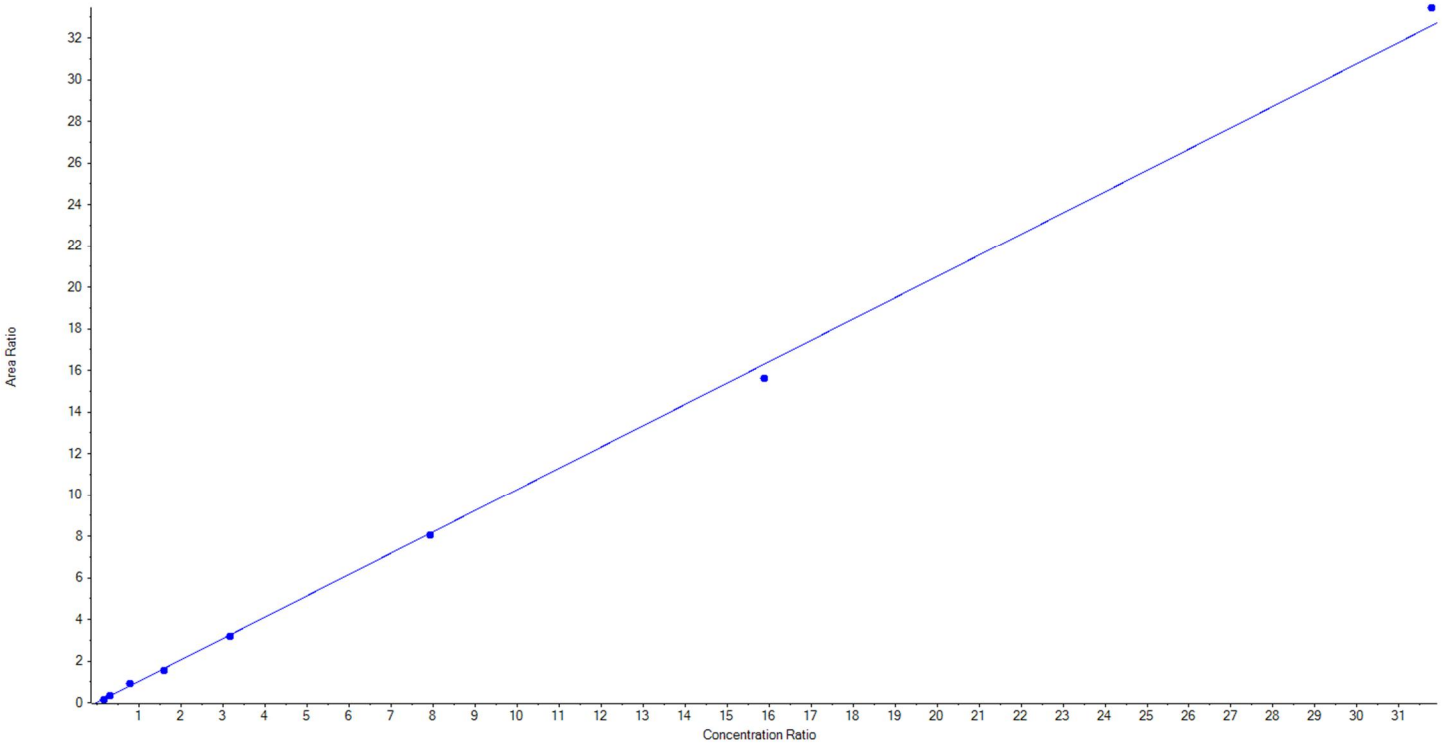
Calibration Summary Report

Analyte Name	PFHxS_1	**Data File**	5500_06122018.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.02546 x + 0.00270 (r = 0.99932) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.80	N/A	N/A
3	JV65	L2	True	45.60	46.187690	101.3
4	JV66	L3	True	91.20	87.480349	95.9
5	JV67	L4	True	228.00	260.566228	114.3
6	JV68	L5	True	456.00	427.831245	93.8
7	JV69	L6	True	912.00	887.810797	97.4
8	JV70	L7	True	2280.00	2255.837318	98.9
9	JV71	L8	True	4560.00	4366.609379	95.8
10	JV72	L9	True	9120.00	9360.476993	102.6



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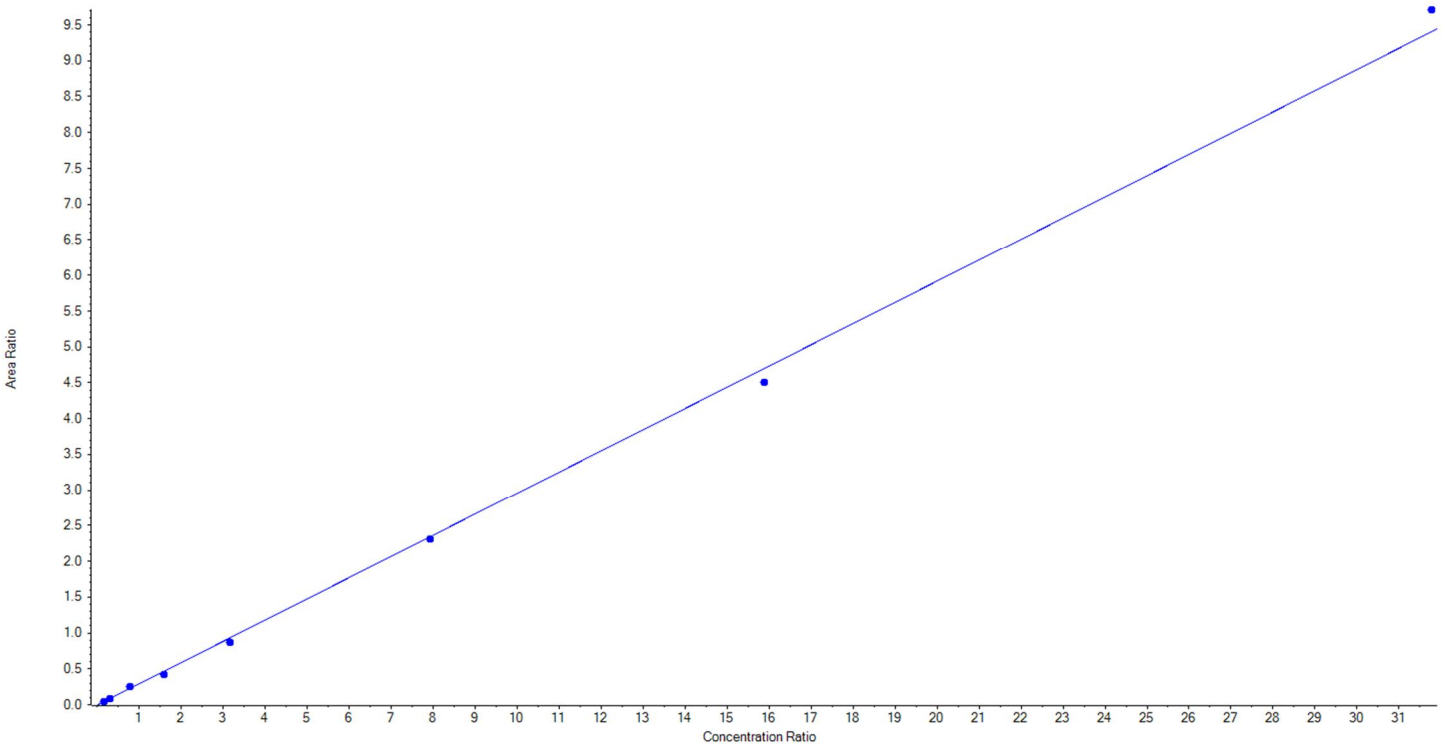
Calibration Summary Report

Analyte Name	PFHxS_2	**Data File**	5500_06122018.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.29618 x + -0.00713 (r = 0.99913) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	22.80	N/A	N/A
3	JV65	L2	True	45.60	49.529878	108.6
4	JV66	L3	True	91.20	88.910765	97.5
5	JV67	L4	True	228.00	253.133590	111.0
6	JV68	L5	True	456.00	418.795290	91.8
7	JV69	L6	True	912.00	853.057542	93.5
8	JV70	L7	True	2280.00	2244.055800	98.4
9	JV71	L8	True	4560.00	4369.582780	95.8
10	JV72	L9	True	9120.00	9415.734356	103.2



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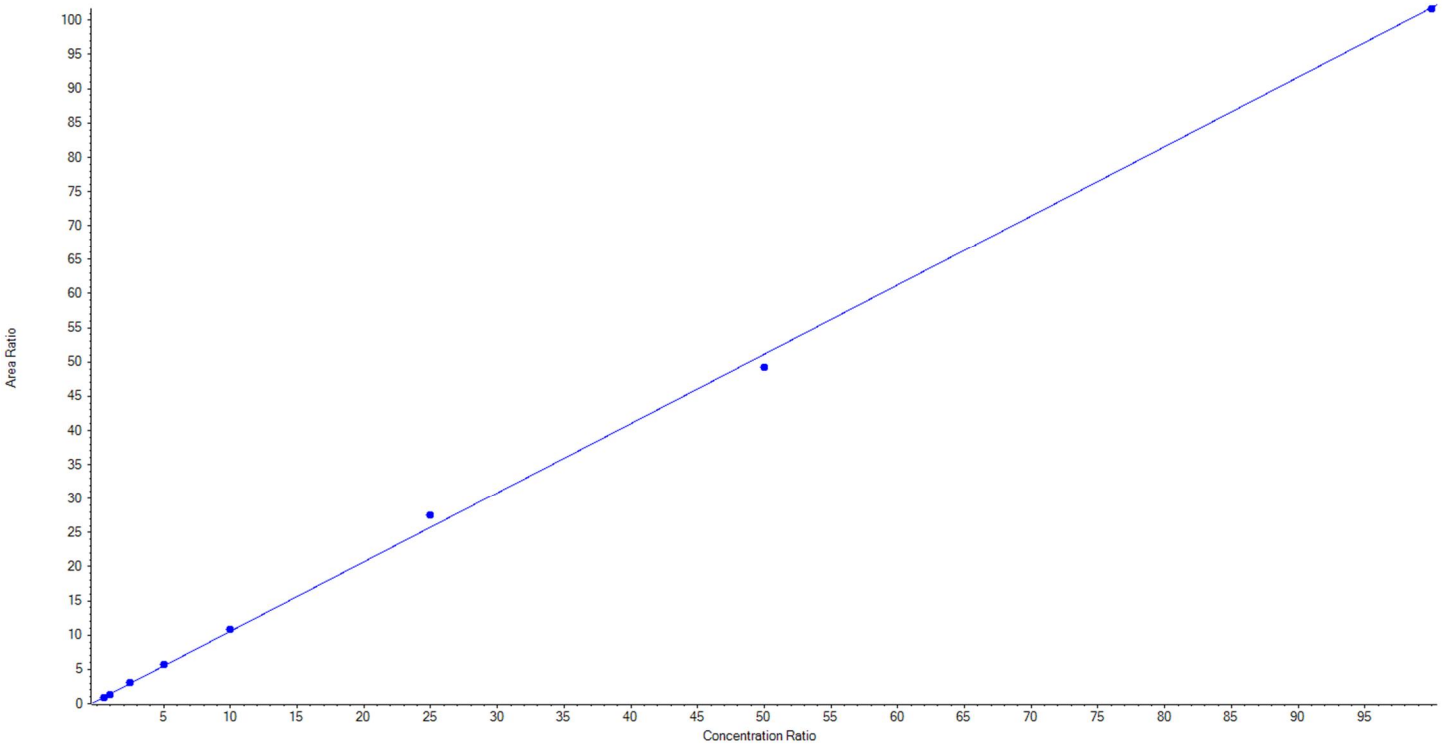
Calibration Summary Report

Analyte Name	PFOA_1	**Data File**	5500_06122018.wiff
MRM Transition	413.0 / 369.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.01411 x + 0.42321 (r = 0.99934) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	50.338209	100.7
4	JV66	L3	True	100.00	84.707195	84.7
5	JV67	L4	True	250.00	265.523841	106.2
6	JV68	L5	True	500.00	515.478392	103.1
7	JV69	L6	True	1000.00	1026.033578	102.6
8	JV70	L7	True	2500.00	2669.074700	106.8
9	JV71	L8	True	5000.00	4805.638526	96.1
10	JV72	L9	True	10000.00	9983.205560	99.8



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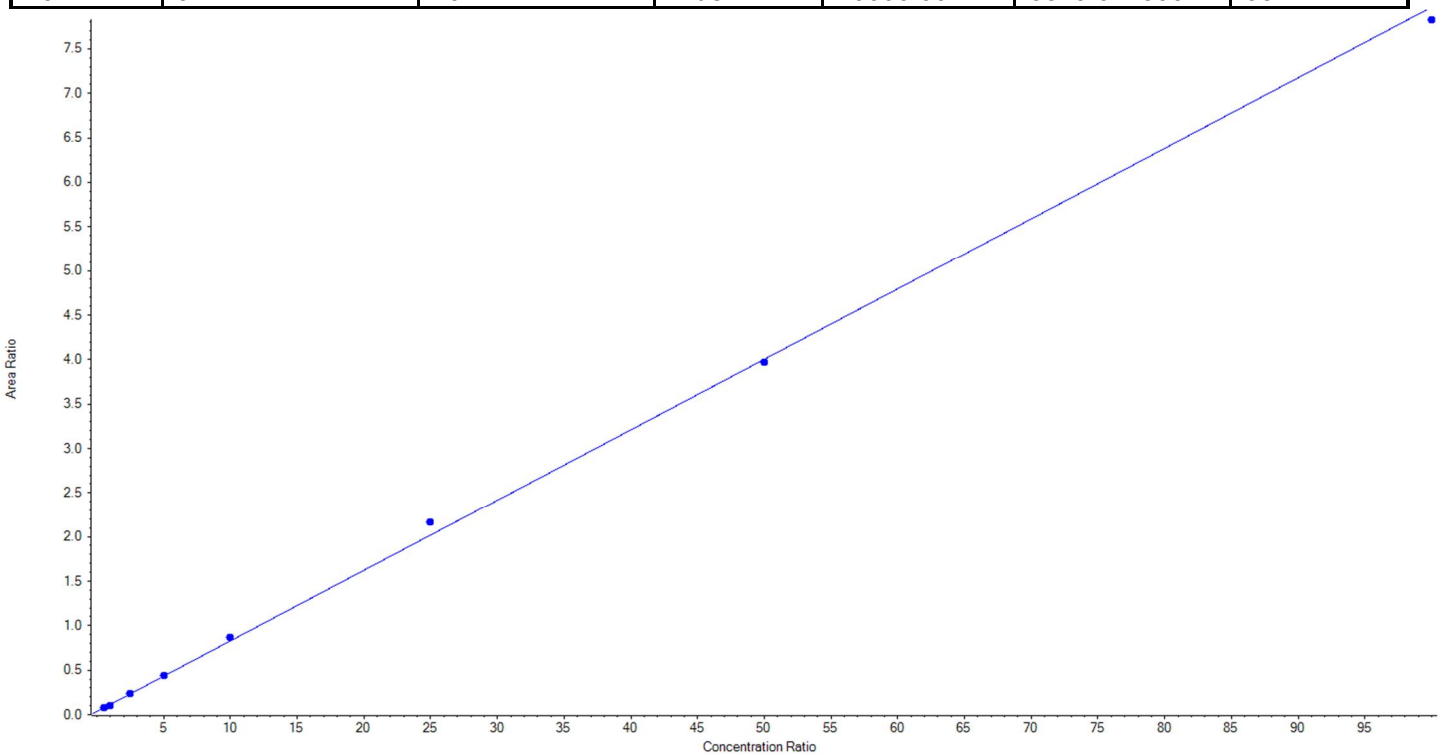
Calibration Summary Report

Analyte Name	PFOA_2	**Data File**	5500_06122018.wiff
MRM Transition	413.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.07932 x + 0.03574 (r = 0.99937) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	52.109683	104.2
4	JV66	L3	True	100.00	84.079239	84.1
5	JV67	L4	True	250.00	252.081302	100.8
6	JV68	L5	True	500.00	504.406238	100.9
7	JV69	L6	True	1000.00	1055.853791	105.6
8	JV70	L7	True	2500.00	2678.463894	107.1
9	JV71	L8	True	5000.00	4953.363354	99.1
10	JV72	L9	True	10000.00	9819.642500	98.2



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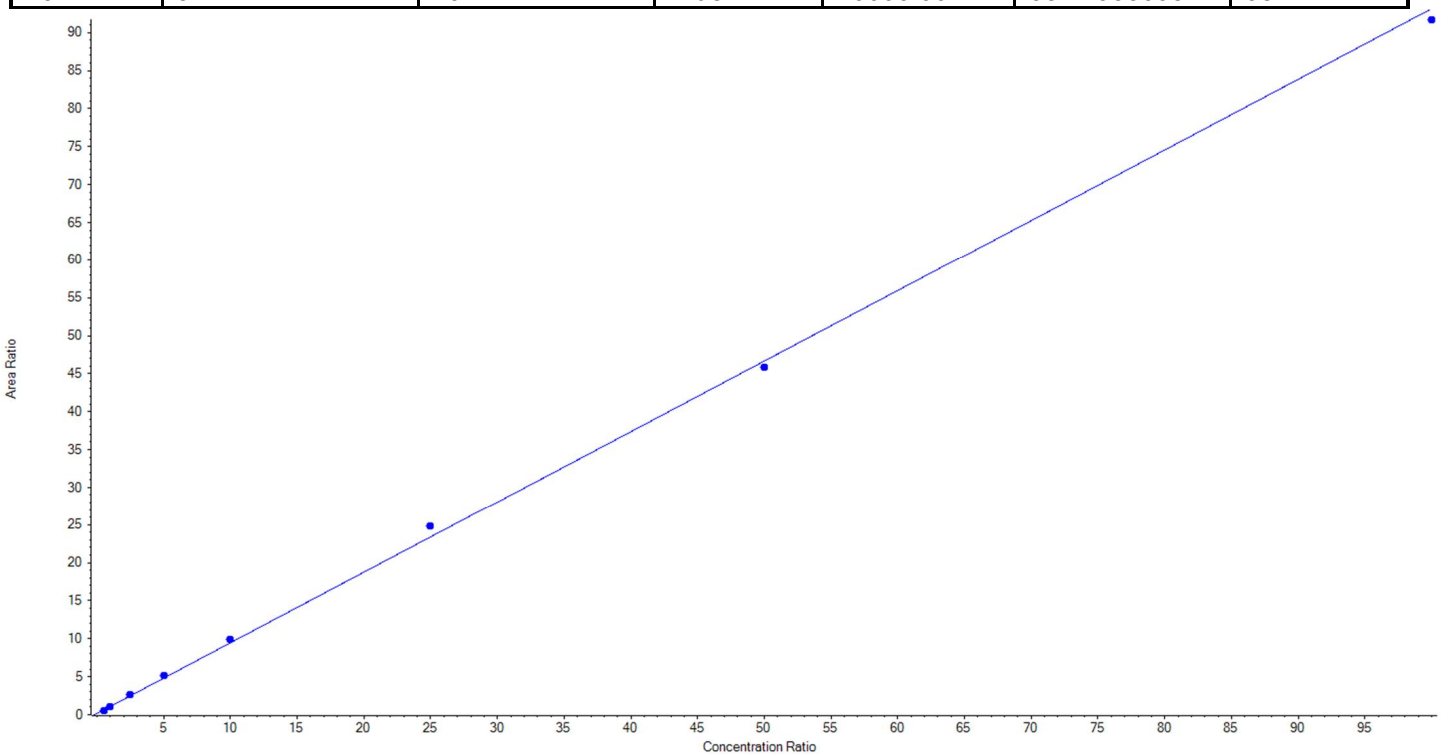
Calibration Summary Report

Analyte Name	PFNA_1	**Data File**	5500_06122018.wiff
MRM Transition	463.0 / 419.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.92987 x + 0.16135 (r = 0.99939) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	39.449837	78.9
4	JV66	L3	True	100.00	100.138720	100.1
5	JV67	L4	True	250.00	264.651374	105.9
6	JV68	L5	True	500.00	534.761281	107.0
7	JV69	L6	True	1000.00	1054.207944	105.4
8	JV70	L7	True	2500.00	2650.586292	106.0
9	JV71	L8	True	5000.00	4914.250945	98.3
10	JV72	L9	True	10000.00	9841.953608	98.4



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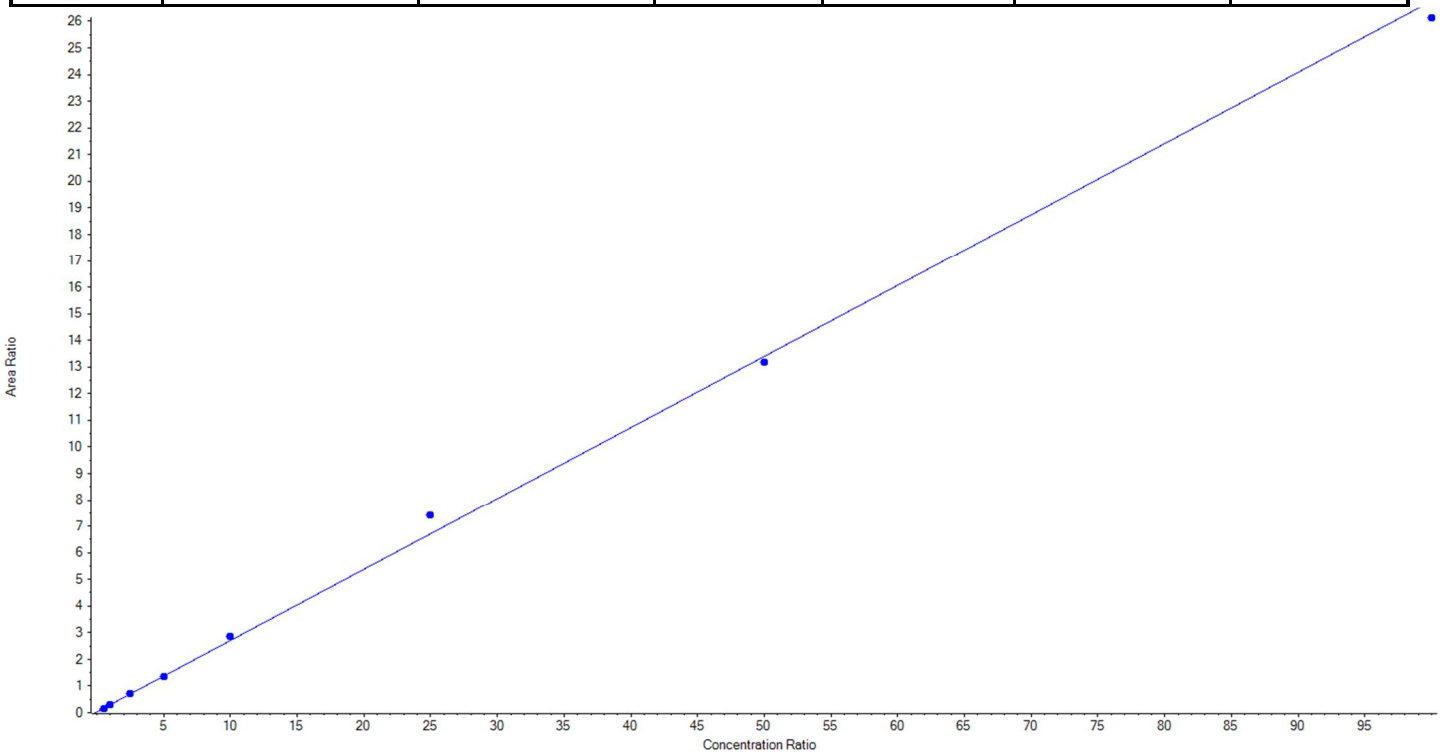
Calibration Summary Report

Analyte Name	PFNA_2	**Data File**	5500_06122018.wiff
MRM Transition	463.0 / 219.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.26726 x + 0.03412 (r = 0.99888) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	42.777773	85.6
4	JV66	L3	True	100.00	102.807845	102.8
5	JV67	L4	True	250.00	248.524822	99.4
6	JV68	L5	True	500.00	501.019505	100.2
7	JV69	L6	True	1000.00	1052.266180	105.2
8	JV70	L7	True	2500.00	2769.495936	110.8
9	JV71	L8	True	5000.00	4918.524474	98.4
10	JV72	L9	True	10000.00	9764.583465	97.7



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Calibration Summary Report

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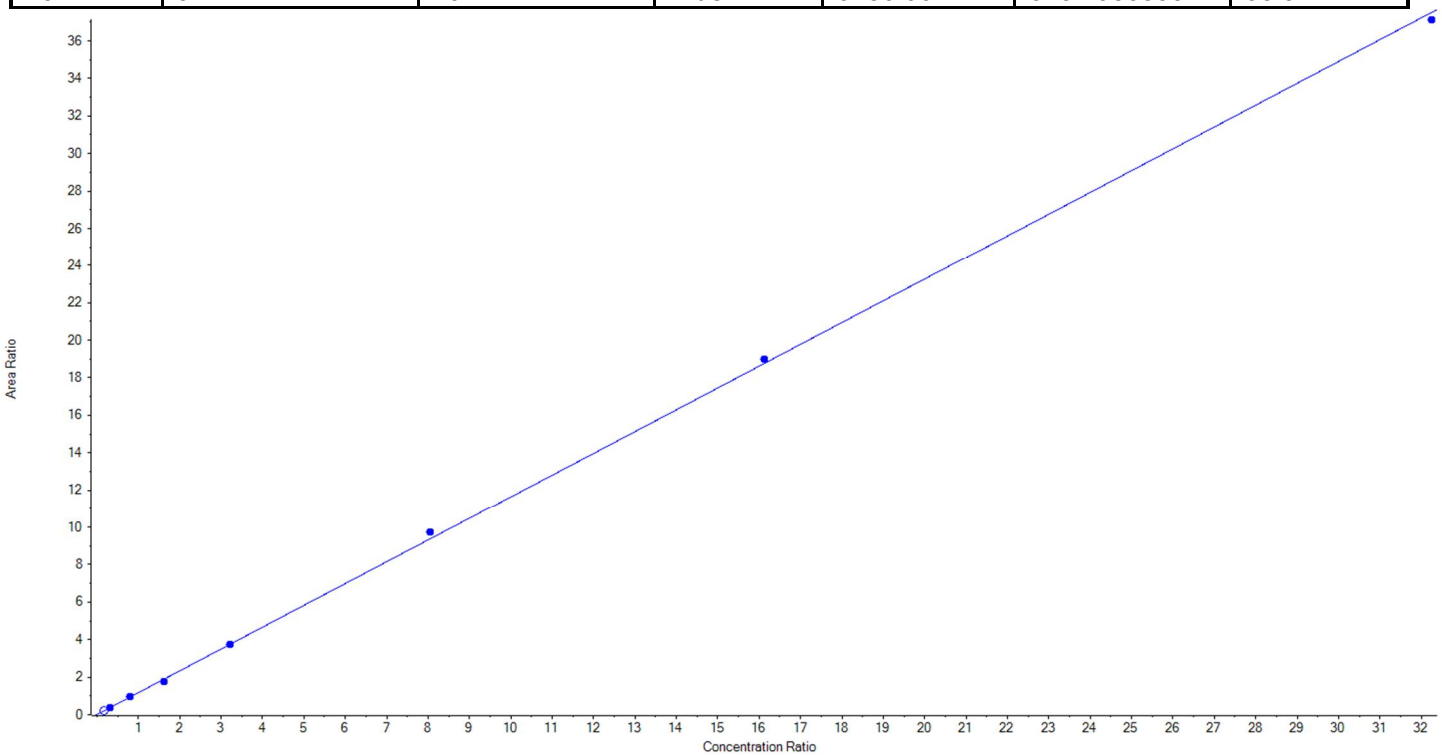
Analyte Name	PFOS_1	**Data File**	5500_06122018.wiff
MRM Transition	499.0 / 80.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.16304 x + 0.00952 (r = 0.99976) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	23.15	N/A	N/A
3	JV65	L2	False	46.30	48.187813	104.1
4	JV66	L3	True	92.60	95.378162	103.0
5	JV67	L4	True	231.50	234.863467	101.5
6	JV68	L5	True	463.00	428.486526	92.6
7	JV69	L6	True	925.60	920.372302	99.4
8	JV70	L7	True	2314.00	2396.428880	103.6
9	JV71	L8	True	4628.00	4677.185328	101.1
10	JV72	L9	True	9256.00	9157.985335	98.9



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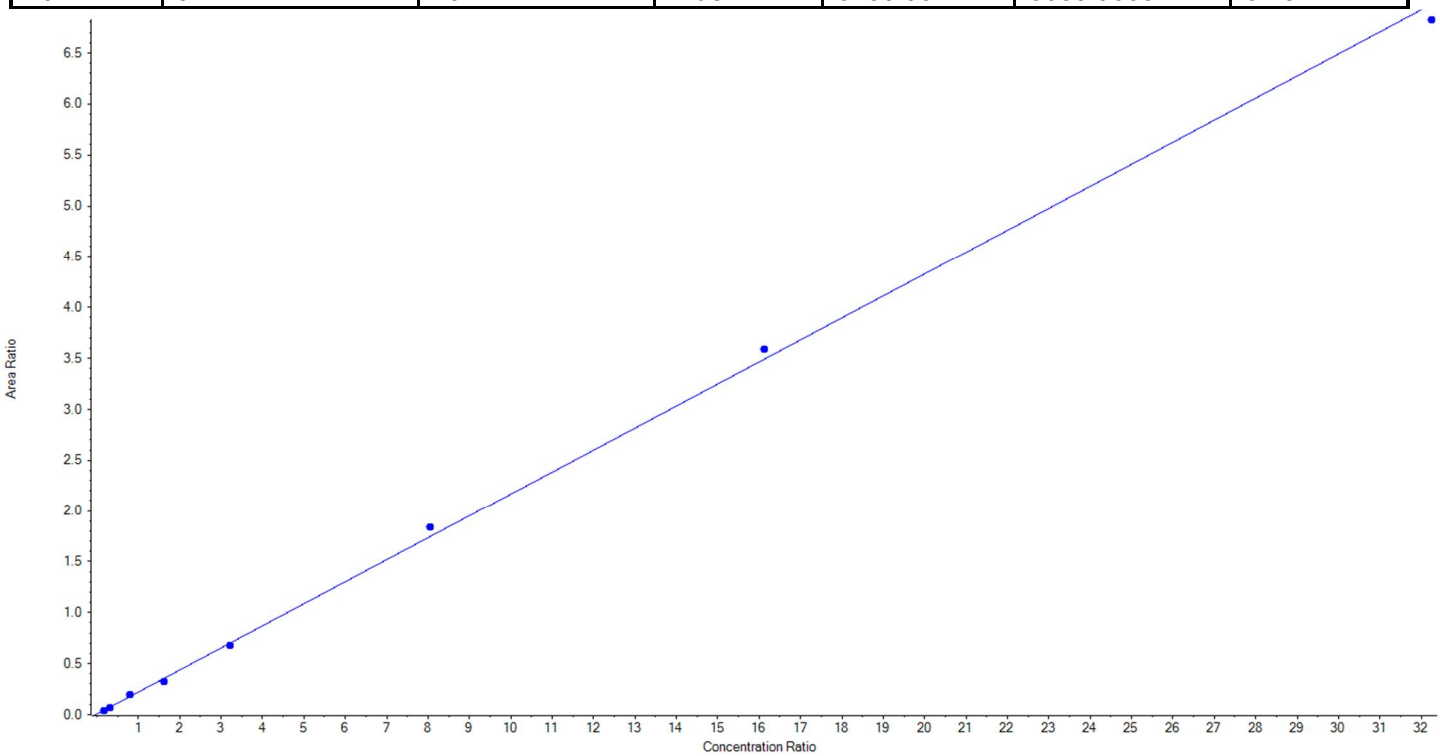
Calibration Summary Report

Analyte Name	PFOS_2	**Data File**	5500_06122018.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0343
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.21614 x + 0.00561 (r = 0.99933) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	23.15	N/A	N/A
3	JV65	L2	True	46.30	48.850325	105.5
4	JV66	L3	True	92.60	84.477615	91.2
5	JV67	L4	True	231.50	252.027708	108.9
6	JV68	L5	True	463.00	423.495829	91.5
7	JV69	L6	True	925.60	896.469482	96.9
8	JV70	L7	True	2314.00	2440.469794	105.5
9	JV71	L8	True	4628.00	4757.248377	102.8
10	JV72	L9	True	9256.00	9053.960872	97.8



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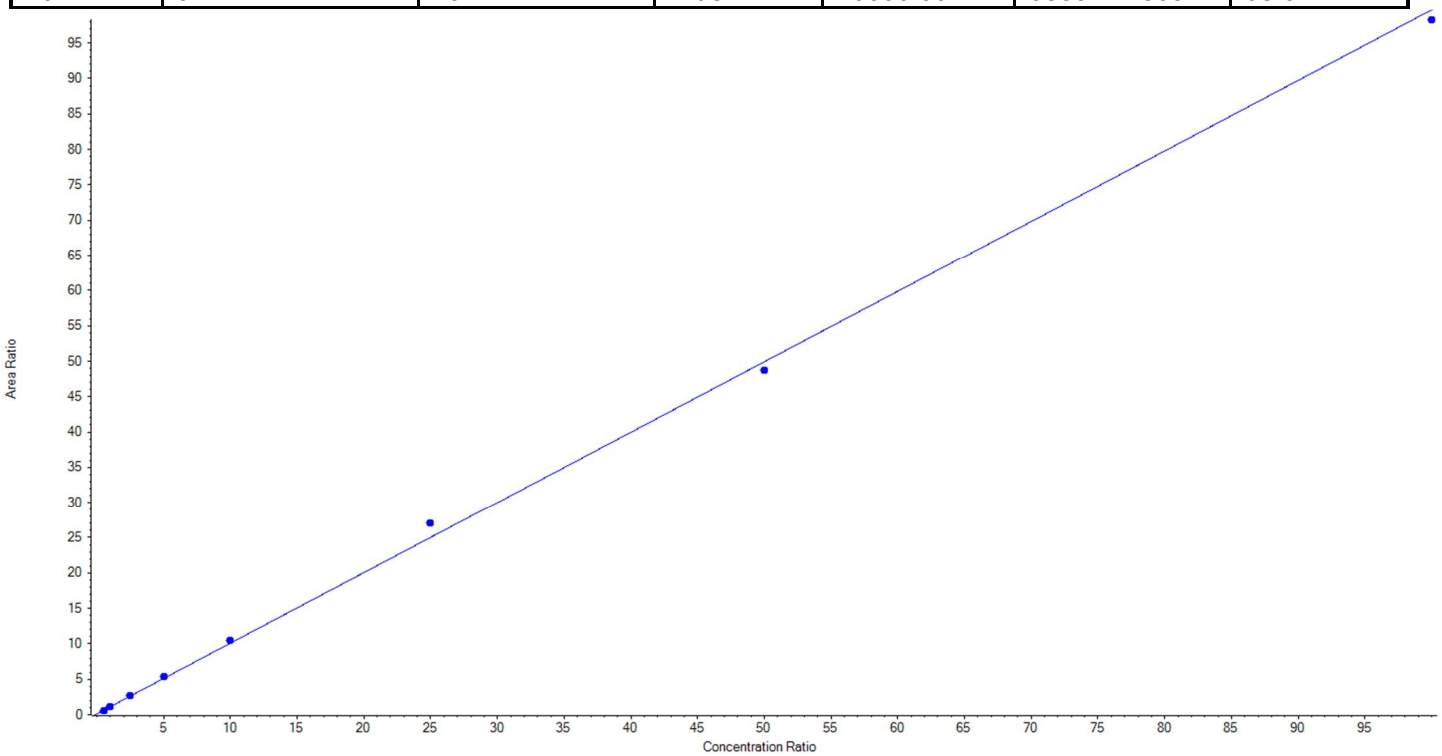
Calibration Summary Report

Analyte Name	PFDA_1	**Data File**	5500_06122018.wiff
MRM Transition	513.0 / 469.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.99557 x + 0.13515 (r = 0.99929) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	44.435832	88.9
4	JV66	L3	True	100.00	93.145766	93.2
5	JV67	L4	True	250.00	261.832997	104.7
6	JV68	L5	True	500.00	525.405873	105.1
7	JV69	L6	True	1000.00	1041.326506	104.1
8	JV70	L7	True	2500.00	2697.013223	107.9
9	JV71	L8	True	5000.00	4878.661940	97.6
10	JV72	L9	True	10000.00	9858.177863	98.6



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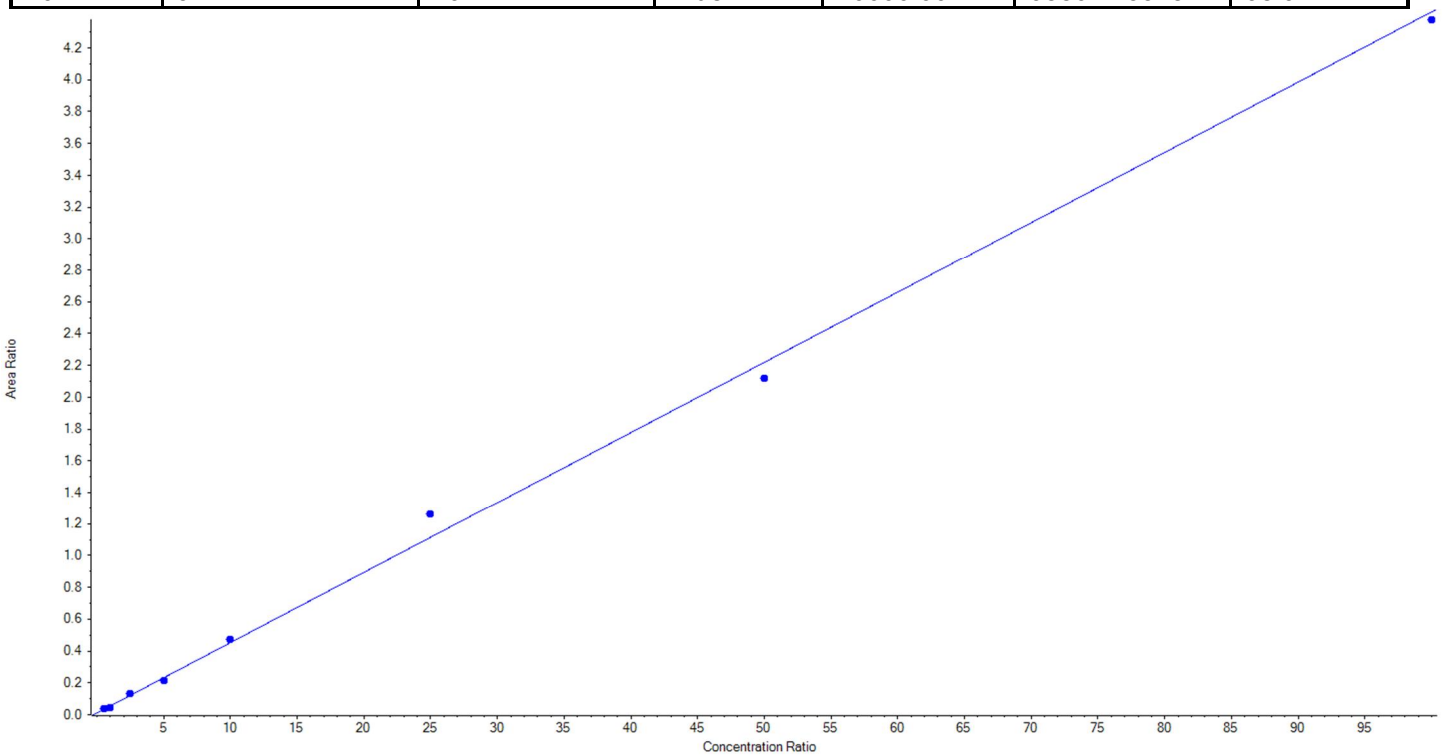
Calibration Summary Report

Analyte Name	PFDA_2	**Data File**	5500_06122018.wiff
MRM Transition	513.0 / 219.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04416 x + 0.01106 (r = 0.99805) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	55.236183	110.5
4	JV66	L3	True	100.00	76.398204	76.4
5	JV67	L4	True	250.00	272.771787	109.1
6	JV68	L5	True	500.00	459.878276	92.0
7	JV69	L6	True	1000.00	1044.129829	104.4
8	JV70	L7	True	2500.00	2833.104819	113.3
9	JV71	L8	True	5000.00	4772.307574	95.5
10	JV72	L9	True	10000.00	9886.173328	98.9



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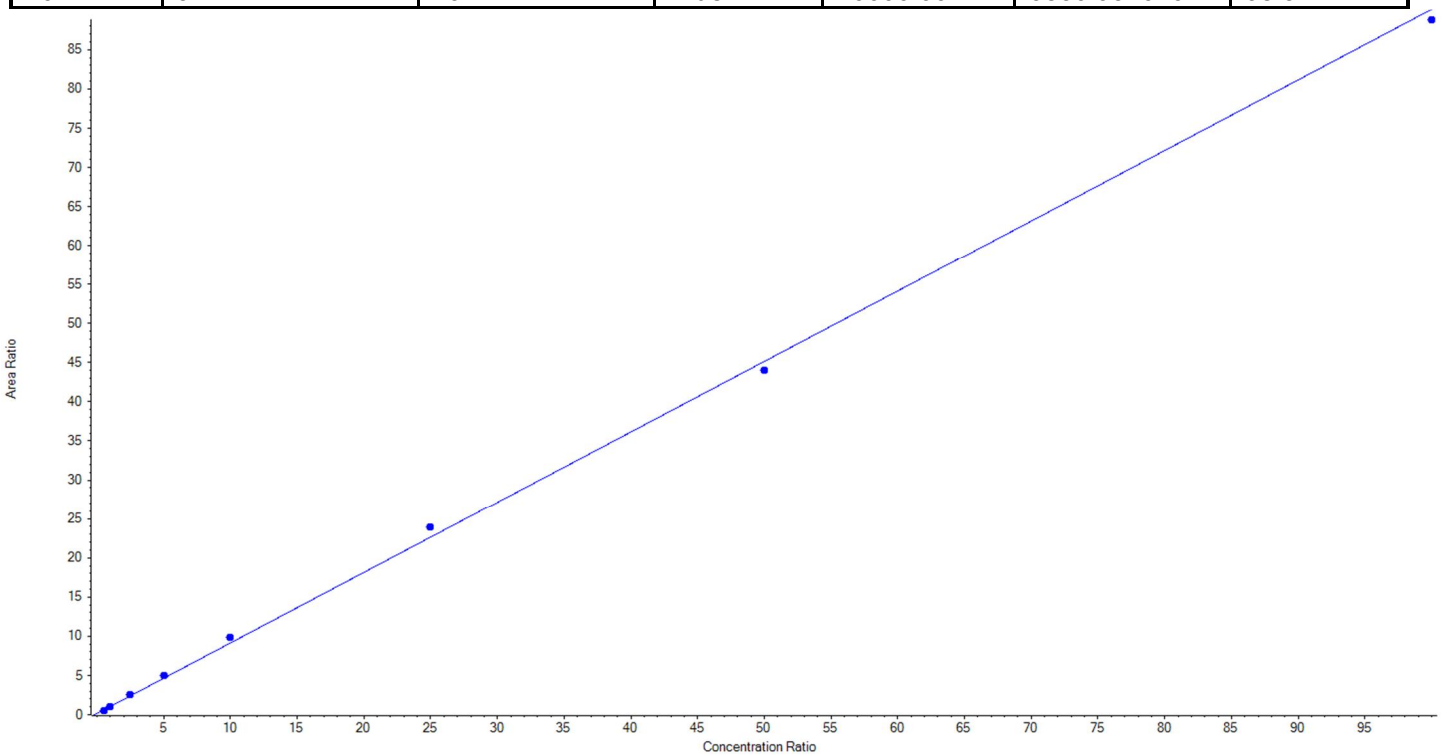
Calibration Summary Report

Analyte Name	PFUnA_1	**Data File**	5500_06122018.wiff
MRM Transition	563.0 / 519.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.90013 x + 0.14078 (r = 0.99919) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	37.715784	75.4
4	JV66	L3	True	100.00	96.757681	96.8
5	JV67	L4	True	250.00	272.425126	109.0
6	JV68	L5	True	500.00	545.715689	109.1
7	JV69	L6	True	1000.00	1081.252644	108.1
8	JV70	L7	True	2500.00	2637.960702	105.5
9	JV71	L8	True	5000.00	4877.214697	97.5
10	JV72	L9	True	10000.00	9850.957676	98.5



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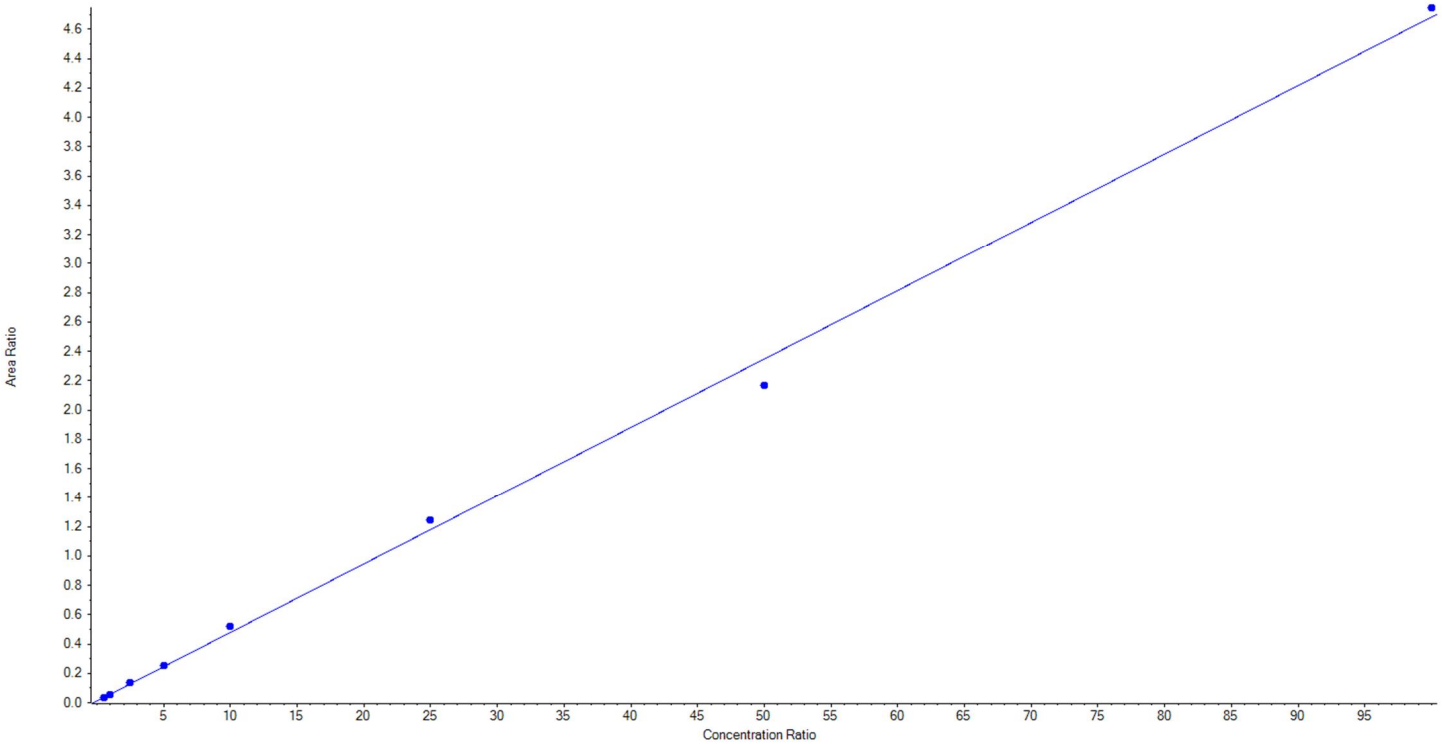
Calibration Summary Report

Analyte Name	PFUnA_2	**Data File**	5500_06122018.wiff
MRM Transition	563.0 / 269.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04673 x + 0.01136 (r = 0.99863) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	43.007491	86.0
4	JV66	L3	True	100.00	96.202057	96.2
5	JV67	L4	True	250.00	264.918139	106.0
6	JV68	L5	True	500.00	520.578495	104.1
7	JV69	L6	True	1000.00	1084.199708	108.4
8	JV70	L7	True	2500.00	2639.439523	105.6
9	JV71	L8	True	5000.00	4618.590848	92.4
10	JV72	L9	True	10000.00	10133.063739	101.3



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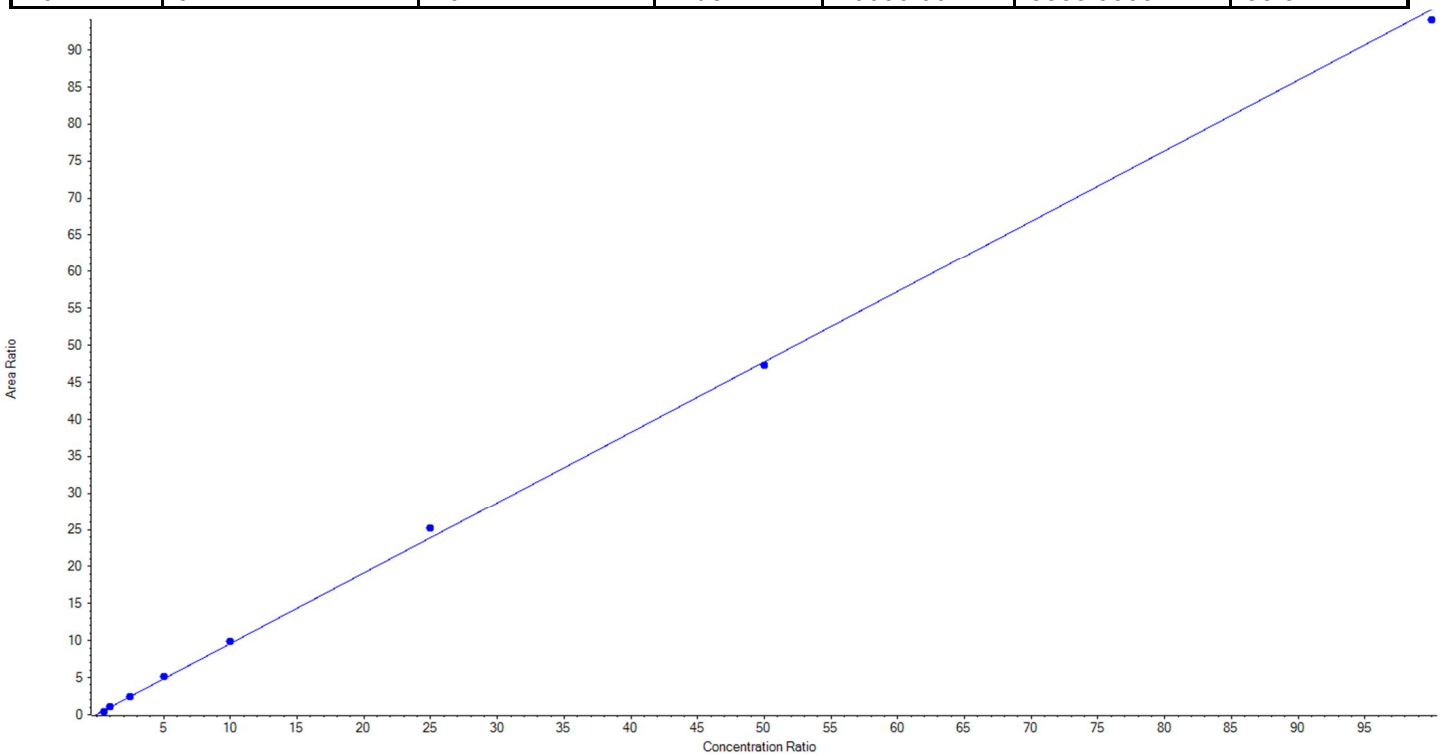
Calibration Summary Report

Analyte Name	PFDoA_1	**Data File**	5500_06122018.wiff
MRM Transition	613.0 / 569.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.95393 x + 0.06668 (r = 0.99961) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	41.996263	84.0
4	JV66	L3	True	100.00	102.502704	102.5
5	JV67	L4	True	250.00	254.423652	101.8
6	JV68	L5	True	500.00	531.541408	106.3
7	JV69	L6	True	1000.00	1023.170252	102.3
8	JV70	L7	True	2500.00	2636.134326	105.5
9	JV71	L8	True	5000.00	4956.231482	99.1
10	JV72	L9	True	10000.00	9853.999912	98.5



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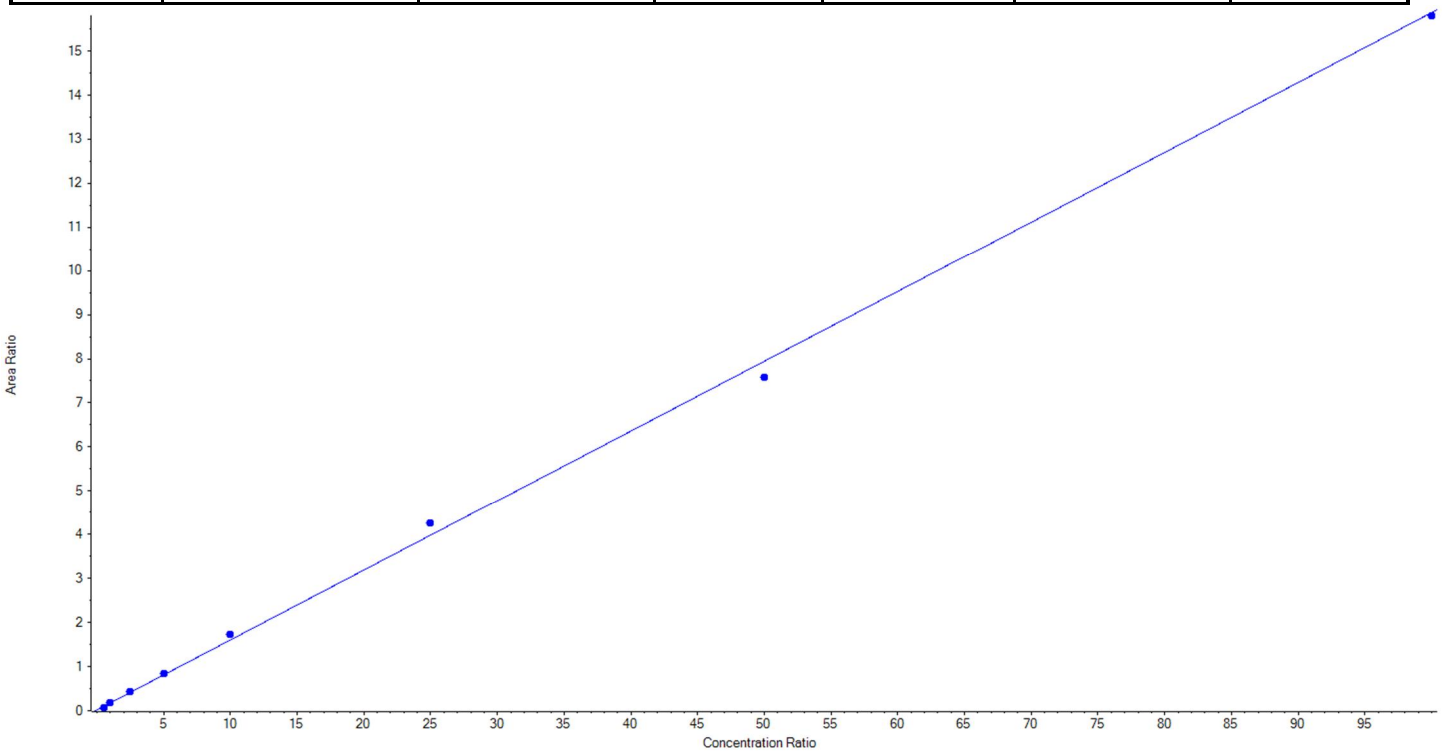
Calibration Summary Report

Analyte Name	PFDoA_2	**Data File**	5500_06122018.wiff
MRM Transition	613.0 / 319.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.15850 x + 0.01900 (r = 0.99906) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	37.377887	74.8
4	JV66	L3	True	100.00	107.351795	107.4
5	JV67	L4	True	250.00	260.643724	104.3
6	JV68	L5	True	500.00	522.047312	104.4
7	JV69	L6	True	1000.00	1072.560309	107.3
8	JV70	L7	True	2500.00	2675.490267	107.0
9	JV71	L8	True	5000.00	4770.454972	95.4
10	JV72	L9	True	10000.00	9954.073734	99.5



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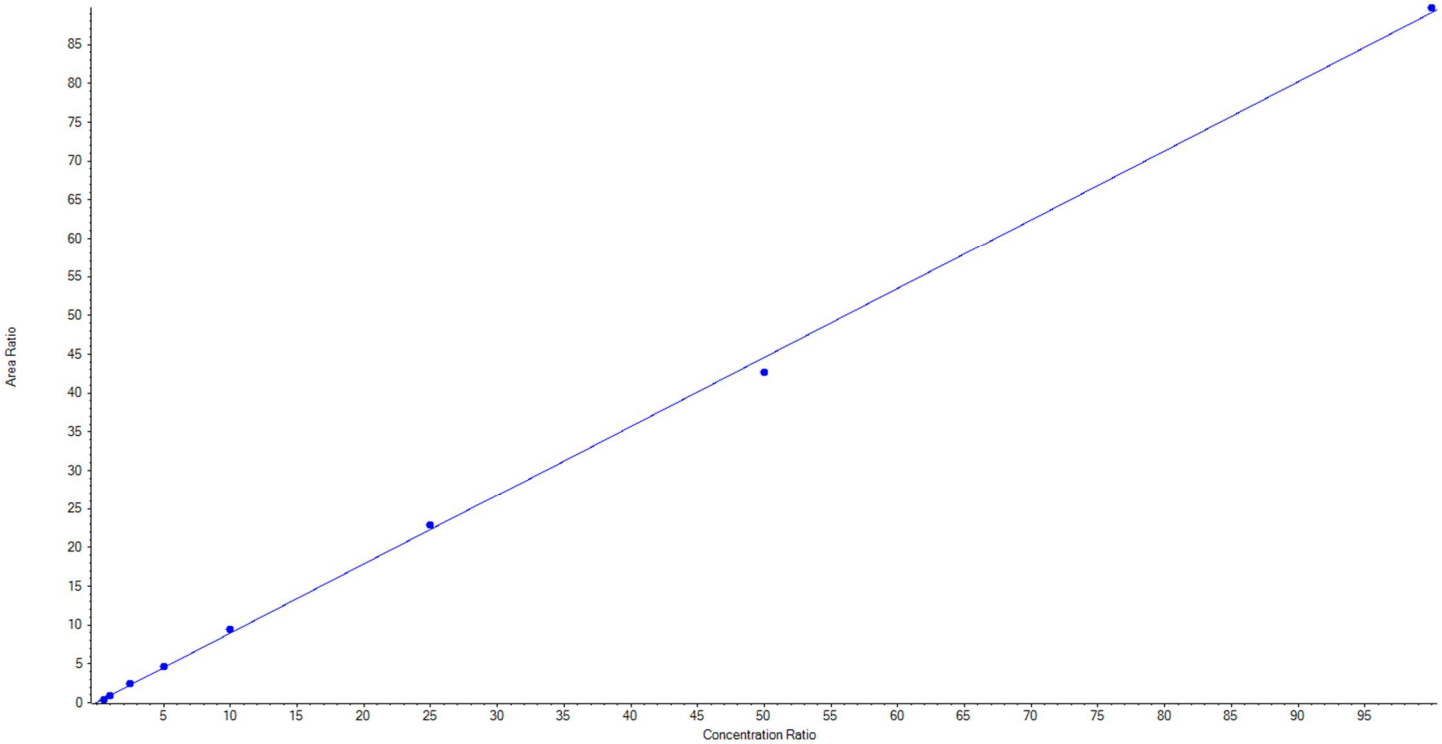
Calibration Summary Report

Analyte Name	PFTrDA_1	**Data File**	5500_06122018.wiff
MRM Transition	663.0 / 619.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.89048 x + 0.06159 (r = 0.99953) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	43.306796	86.6
4	JV66	L3	True	100.00	97.875153	97.9
5	JV67	L4	True	250.00	268.128055	107.3
6	JV68	L5	True	500.00	519.973497	104.0
7	JV69	L6	True	1000.00	1055.027052	105.5
8	JV70	L7	True	2500.00	2557.249009	102.3
9	JV71	L8	True	5000.00	4788.826360	95.8
10	JV72	L9	True	10000.00	10069.614078	100.7



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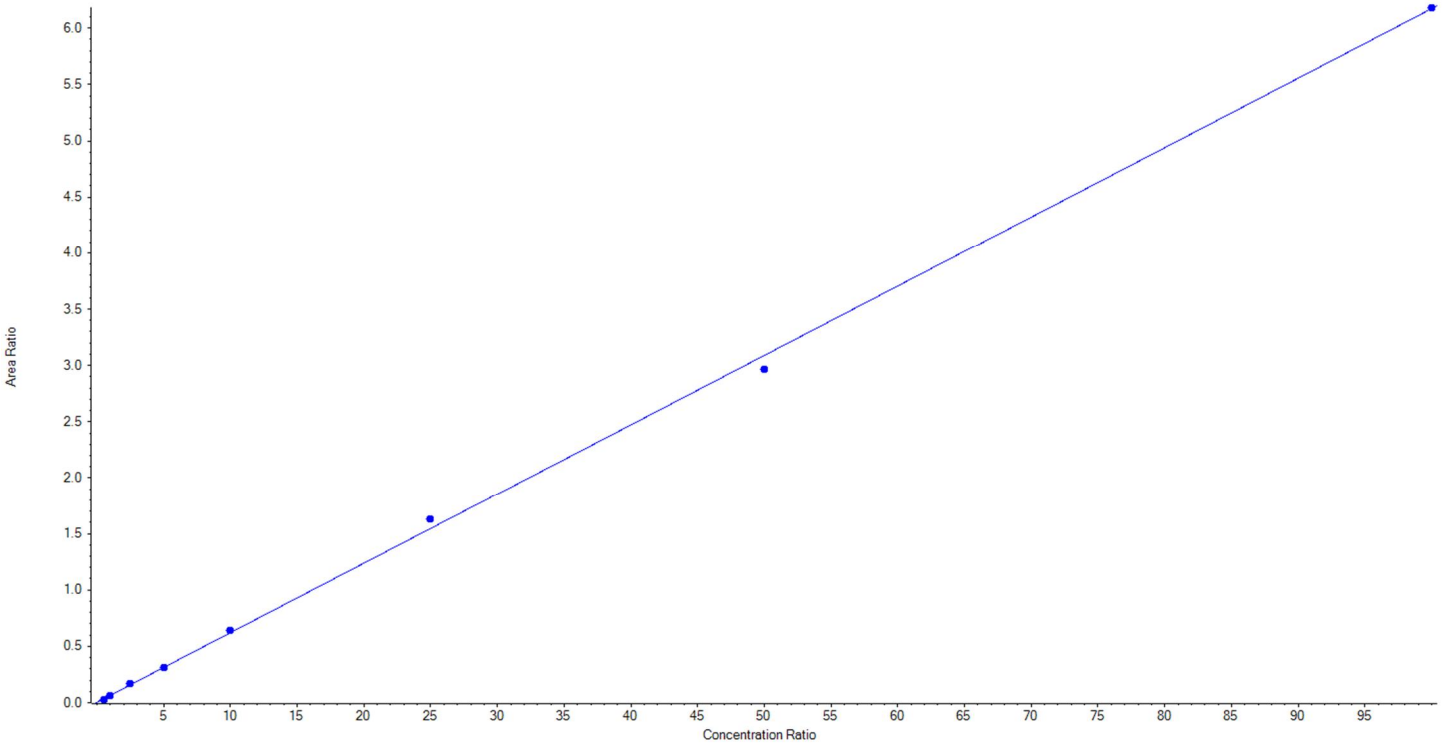
Calibration Summary Report

Analyte Name	PFTrDA_2	**Data File**	5500_06122018.wiff
MRM Transition	663.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.06169 x + 0.00409 (r = 0.99944) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	42.710965	85.4
4	JV66	L3	True	100.00	101.078791	101.1
5	JV67	L4	True	250.00	268.774951	107.5
6	JV68	L5	True	500.00	503.487021	100.7
7	JV69	L6	True	1000.00	1037.186073	103.7
8	JV70	L7	True	2500.00	2637.864972	105.5
9	JV71	L8	True	5000.00	4796.971525	95.9
10	JV72	L9	True	10000.00	10011.925702	100.1



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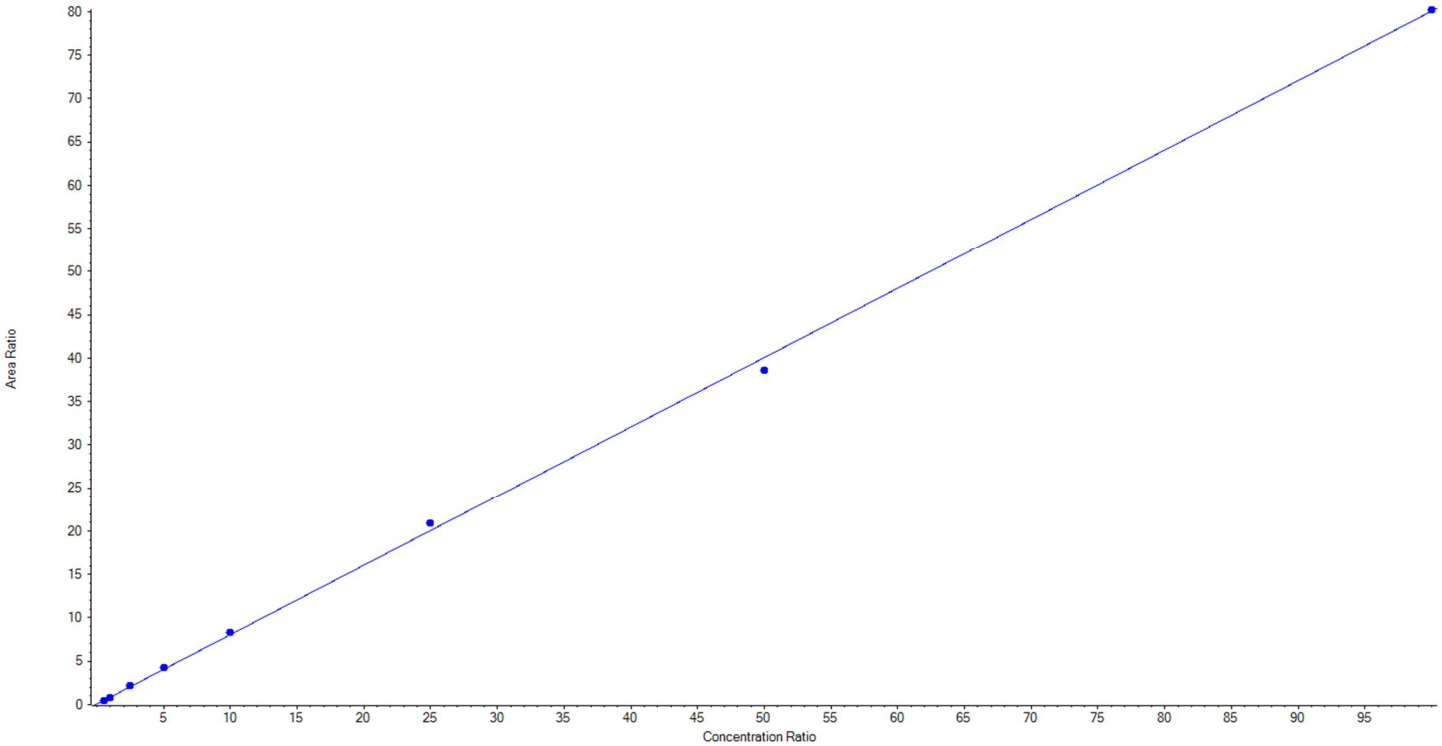
Calibration Summary Report

Analyte Name	PFTeDA_1	**Data File**	5500_06122018.wiff
MRM Transition	713.0 / 669.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.80004 x + 0.06870 (r = 0.99959) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	45.773410	91.6
4	JV66	L3	True	100.00	94.128615	94.1
5	JV67	L4	True	250.00	264.348234	105.7
6	JV68	L5	True	500.00	524.723513	104.9
7	JV69	L6	True	1000.00	1029.276875	102.9
8	JV70	L7	True	2500.00	2603.251203	104.1
9	JV71	L8	True	5000.00	4819.785187	96.4
10	JV72	L9	True	10000.00	10018.712963	100.2



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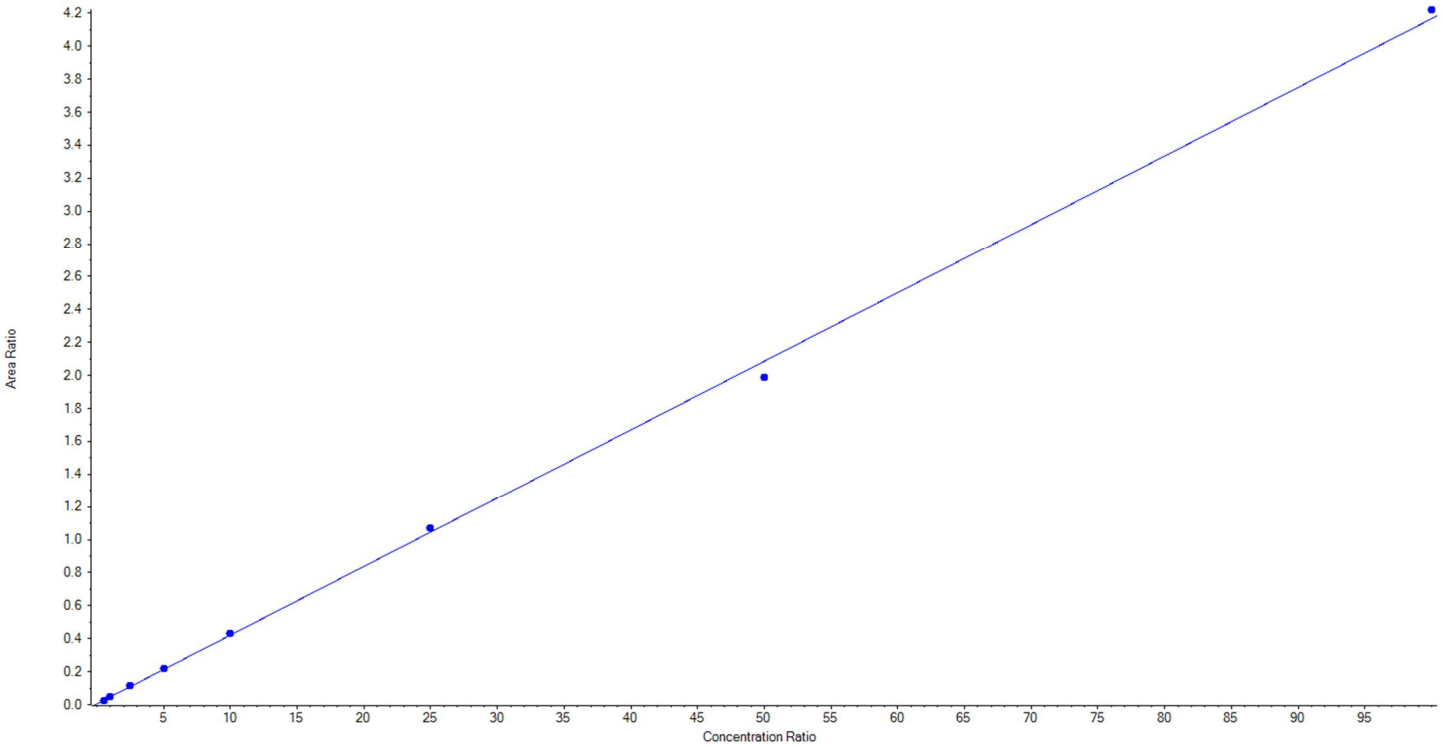
Calibration Summary Report

Analyte Name	PFTeDA_2	**Data File**	5500_06122018.wiff
MRM Transition	713.0 / 169.0	**Result Table**	18-0343
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04161 x + 0.00538 (r = 0.99955) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	44.375819	88.8
4	JV66	L3	True	100.00	103.538442	103.5
5	JV67	L4	True	250.00	259.862901	104.0
6	JV68	L5	True	500.00	508.886391	101.8
7	JV69	L6	True	1000.00	1031.689261	103.2
8	JV70	L7	True	2500.00	2553.743509	102.2
9	JV71	L8	True	5000.00	4768.977837	95.4
10	JV72	L9	True	10000.00	10128.925840	101.3



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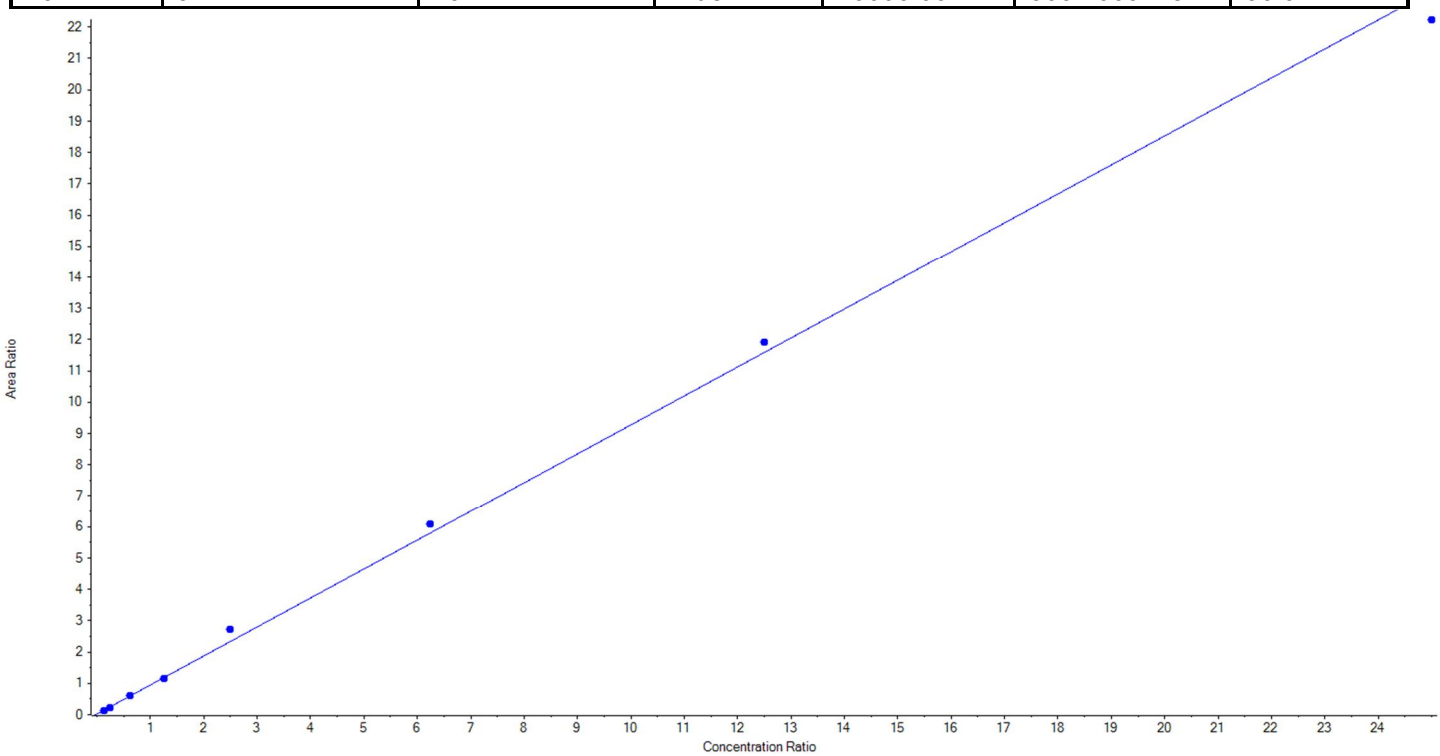
Calibration Summary Report

Analyte Name	NMeFOSAA_1	**Data File**	5500_06122018.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.92525 x + 0.02274 (r = 0.99850) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	44.993770	90.0
4	JV66	L3	True	100.00	89.798642	89.8
5	JV67	L4	True	250.00	254.880308	102.0
6	JV68	L5	True	500.00	492.964120	98.6
7	JV69	L6	True	1000.00	1162.362016	116.2
8	JV70	L7	True	2500.00	2617.467082	104.7
9	JV71	L8	True	5000.00	5135.864638	102.7
10	JV72	L9	True	10000.00	9601.669425	96.0



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Calibration Summary Report

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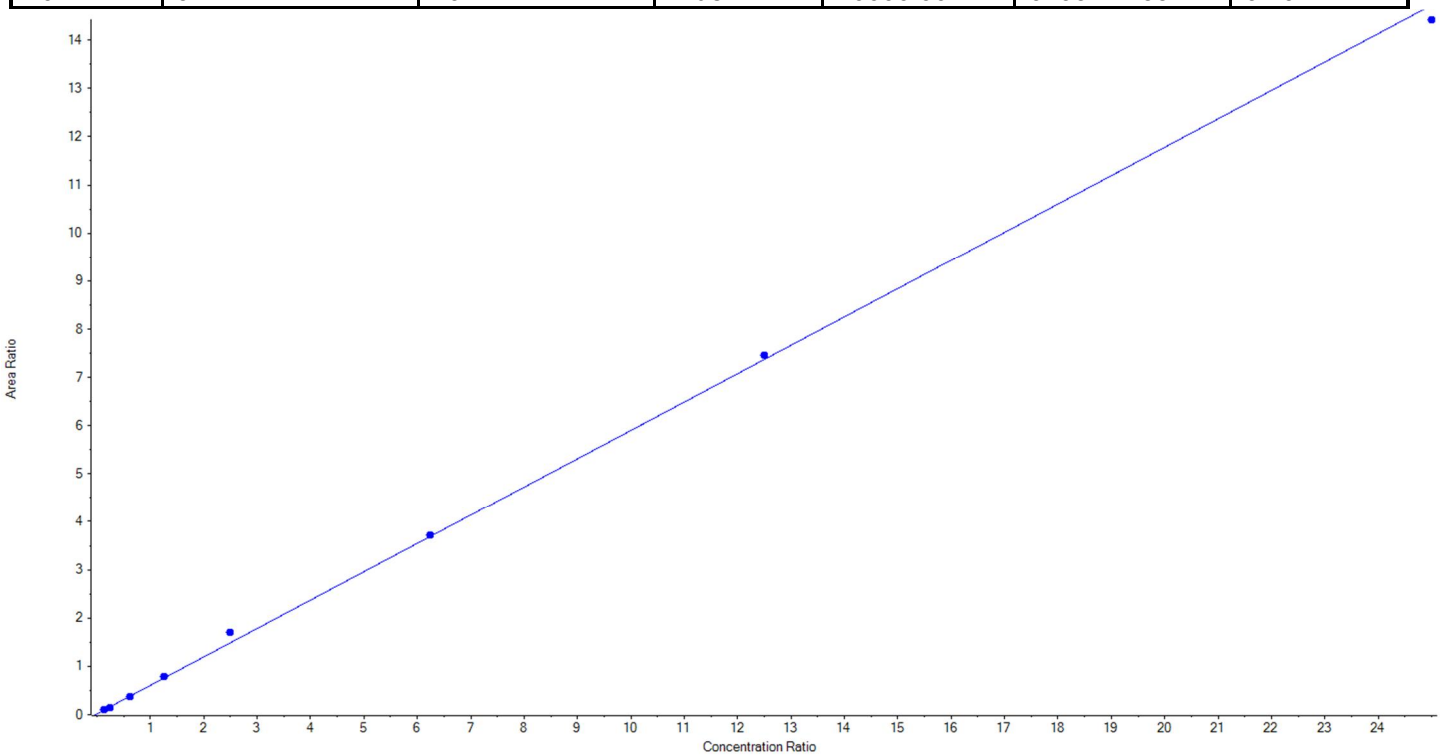
Printed: 15/06/2018 10:32:33 AM

Analyte Name	NMeFOSAA_2	**Data File**	5500_06122018.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.58812 x + 0.01851 (r = 0.99910) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	53.131505	106.3
4	JV66	L3	True	100.00	81.277095	81.3
5	JV67	L4	True	250.00	234.789364	93.9
6	JV68	L5	True	500.00	521.635618	104.3
7	JV69	L6	True	1000.00	1146.164220	114.6
8	JV70	L7	True	2500.00	2513.765137	100.6
9	JV71	L8	True	5000.00	5055.762729	101.1
10	JV72	L9	True	10000.00	9793.474332	97.9



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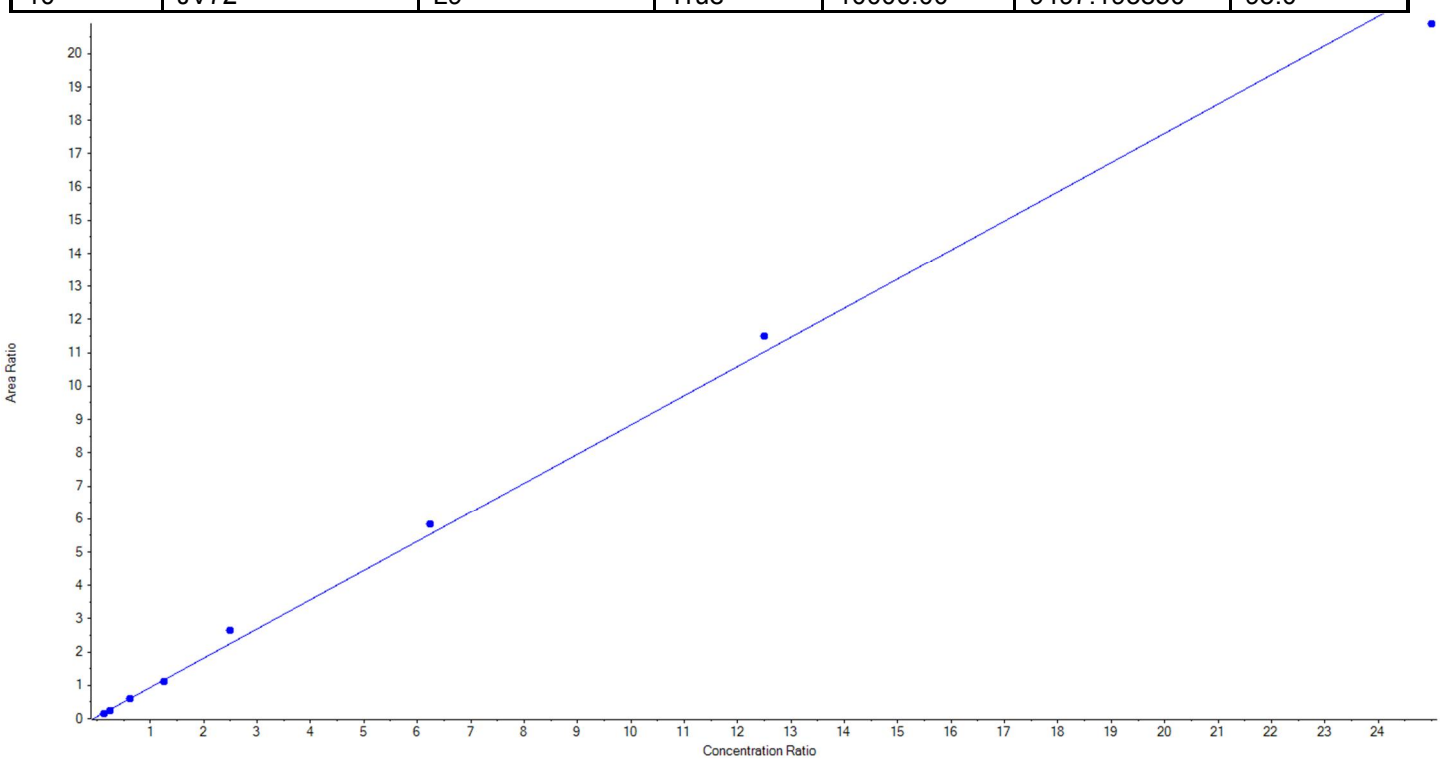
Printed: 15/06/2018 10:32:33 AM

Calibration Summary Report

Analyte Name	NEtFOSAA_1	**Data File**	5500_06122018.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.87755 x + 0.05939 (r = 0.99776) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	True	50.00	47.804781	95.6
4	JV66	L3	True	100.00	84.814537	84.8
5	JV67	L4	True	250.00	252.859431	101.1
6	JV68	L5	True	500.00	476.518984	95.3
7	JV69	L6	True	1000.00	1182.459476	118.3
8	JV70	L7	True	2500.00	2637.173291	105.5
9	JV71	L8	True	5000.00	5221.175648	104.4
10	JV72	L9	True	10000.00	9497.193850	95.0



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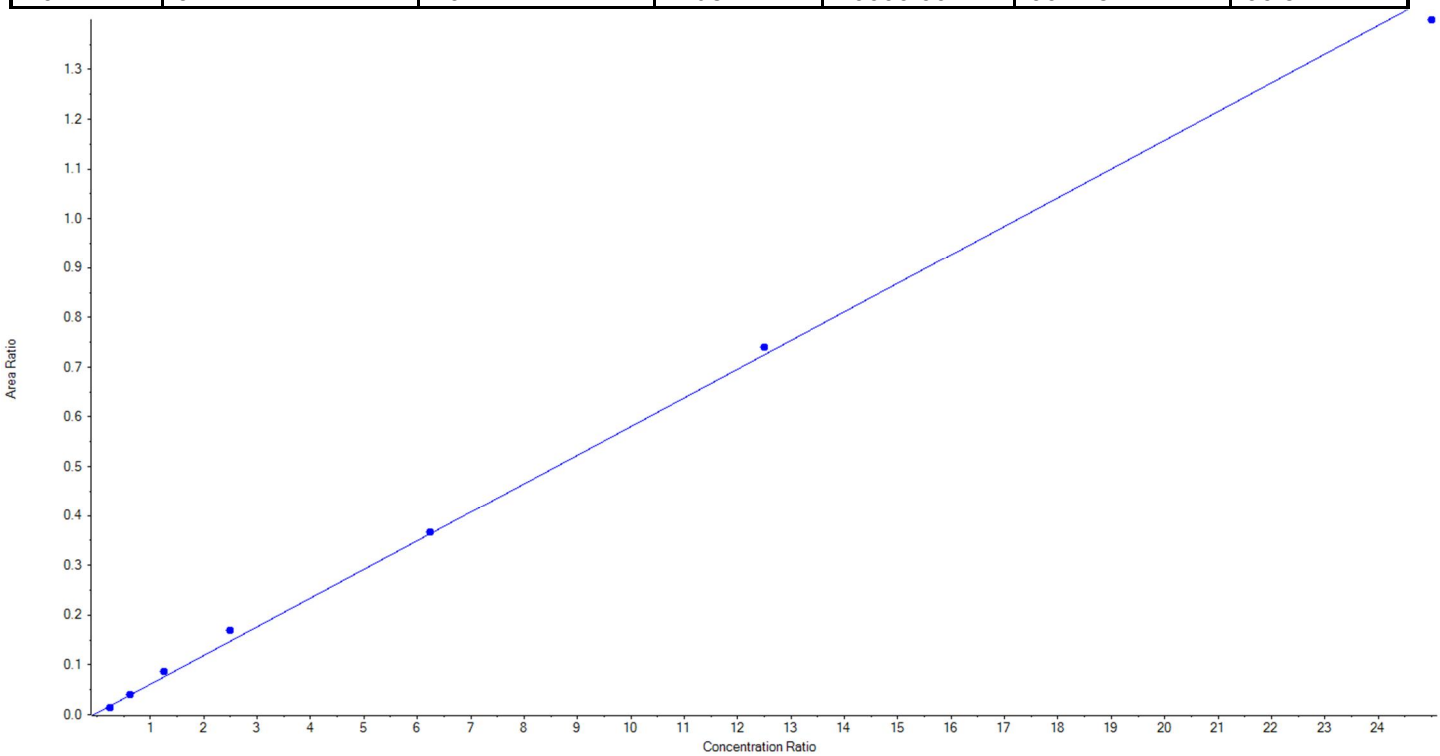
Calibration Summary Report

Analyte Name	NEtFOSAA_2	**Data File**	5500_06122018.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0343
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/12/2018 3:38:26 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.05771 x + 0.00339 (r = 0.99834) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	N/A	N/A
3	JV65	L2	False	50.00	N/A	N/A
4	JV66	L3	True	100.00	70.704094	70.7
5	JV67	L4	True	250.00	249.151225	99.7
6	JV68	L5	True	500.00	575.232732	115.1
7	JV69	L6	True	1000.00	1149.132061	114.9
8	JV70	L7	True	2500.00	2516.924520	100.7
9	JV71	L8	True	5000.00	5111.012896	102.2
10	JV72	L9	True	10000.00	9677.842472	96.8



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Calibration Summary Report

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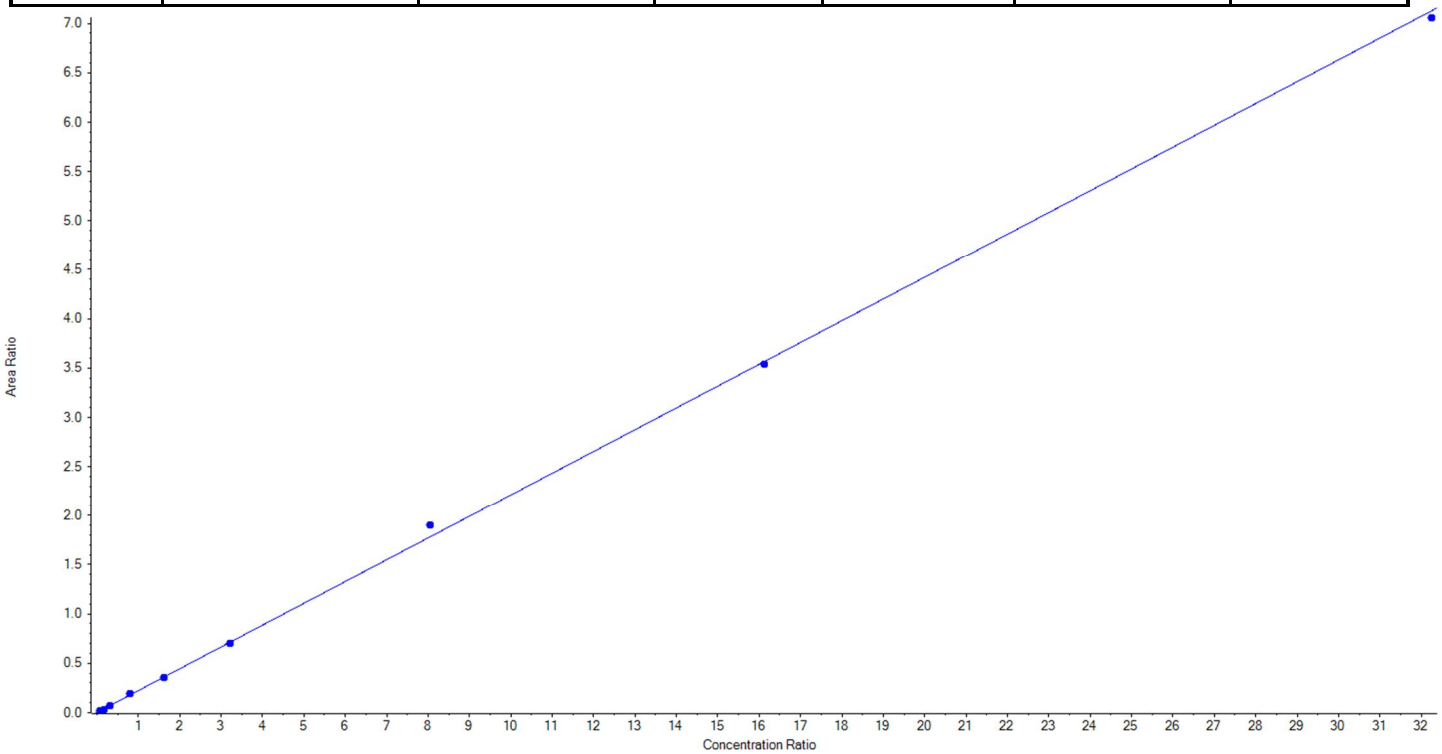
Printed: 19/06/2018 2:42:29 PM

Analyte Name	PFOS_2	**Data File**	06142018.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.22092 x + 0.00318 (r = 0.99956) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	23.15	26.735128	115.5
3	JV65	L2	True	46.30	36.731310	79.3
4	JV66	L3	True	92.60	88.887552	96.0
5	JV67	L4	True	231.50	249.396516	107.7
6	JV68	L5	True	463.00	458.995774	99.1
7	JV69	L6	True	925.60	905.536816	97.8
8	JV70	L7	True	2314.00	2459.747244	106.3
9	JV71	L8	True	4628.00	4590.585831	99.2
10	JV72	L9	True	9256.00	9163.533829	99.0



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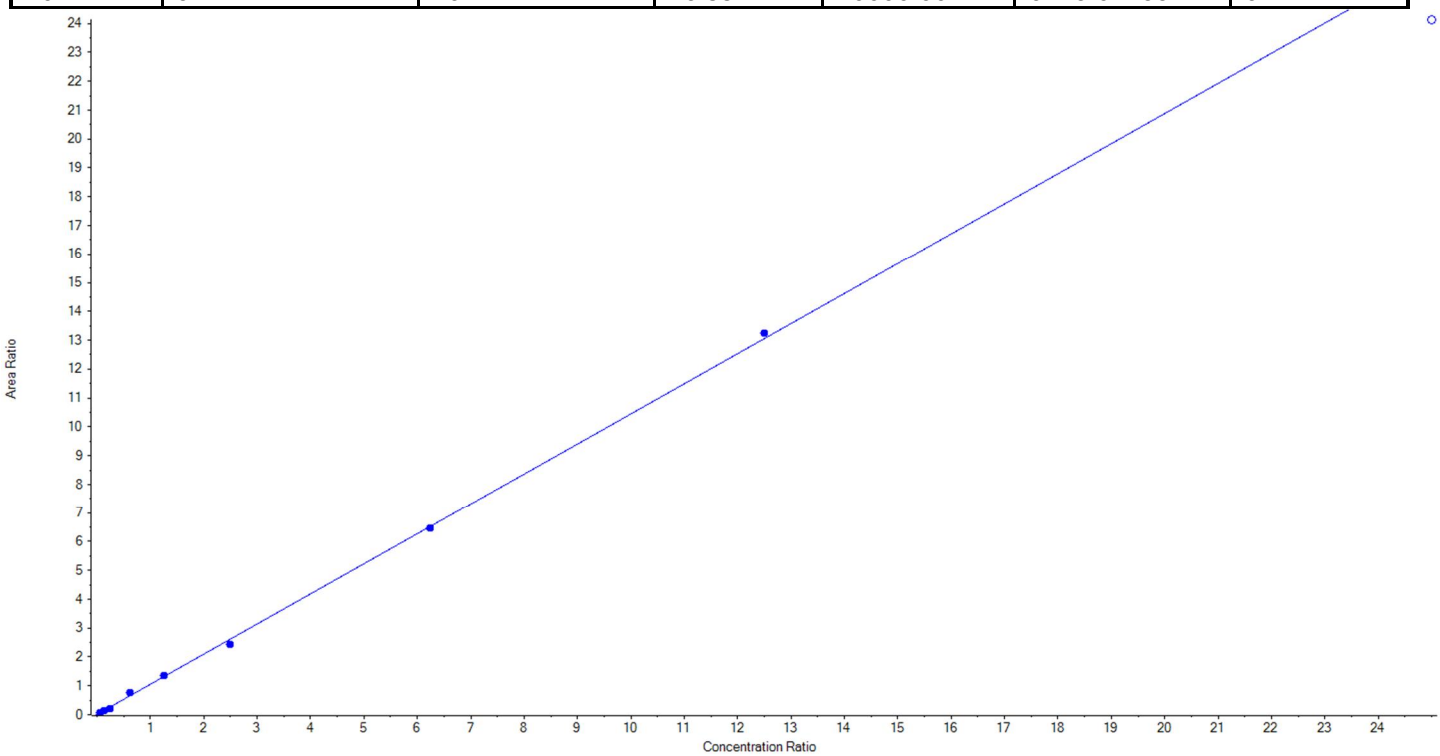
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	NMeFOSAA_1	**Data File**	06142018.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 1.04367 x + 0.00890 (r = 0.99895) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	25.00	27.548977	110.2
3	JV65	L2	True	50.00	50.212959	100.4
4	JV66	L3	True	100.00	78.681781	78.7
5	JV67	L4	True	250.00	288.160229	115.3
6	JV68	L5	True	500.00	513.619150	102.7
7	JV69	L6	True	1000.00	923.273499	92.3
8	JV70	L7	True	2500.00	2475.552639	99.0
9	JV71	L8	True	5000.00	5067.950766	101.4
10	JV72	L9	False	10000.00	9243.627332	92.4



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Calibration Summary Report

Created with Analyst Reporter
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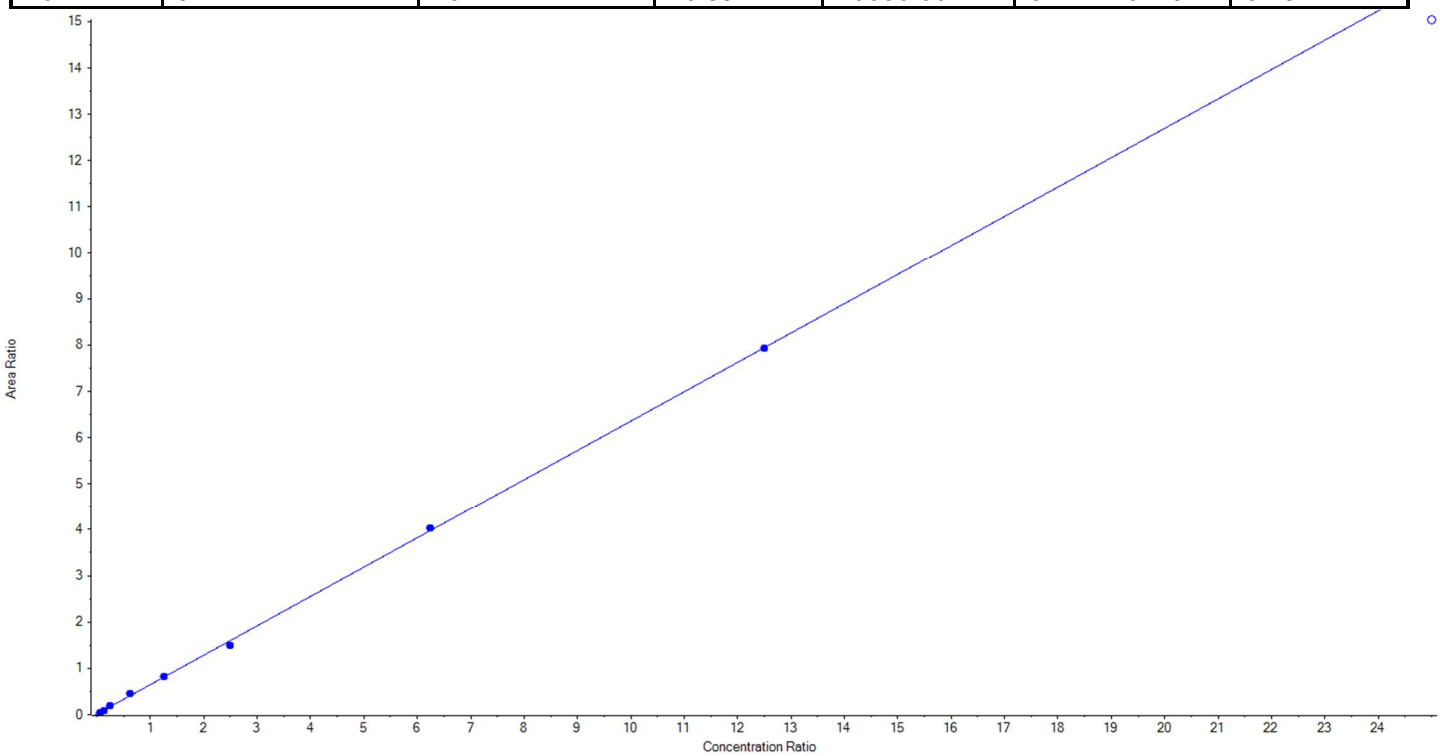
Analyte Name	NMeFOSAA_2	**Data File**	06142018.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.63405 x + 0.01526 (r = 0.99945) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	25.00	22.615513	90.5
3	JV65	L2	True	50.00	47.579201	95.2
4	JV66	L3	True	100.00	107.001946	107.0
5	JV67	L4	True	250.00	275.582161	110.2
6	JV68	L5	True	500.00	515.586020	103.1
7	JV69	L6	True	1000.00	928.182576	92.8
8	JV70	L7	True	2500.00	2532.011080	101.3
9	JV71	L8	True	5000.00	4996.441503	99.9
10	JV72	L9	False	10000.00	9477.219279	94.8



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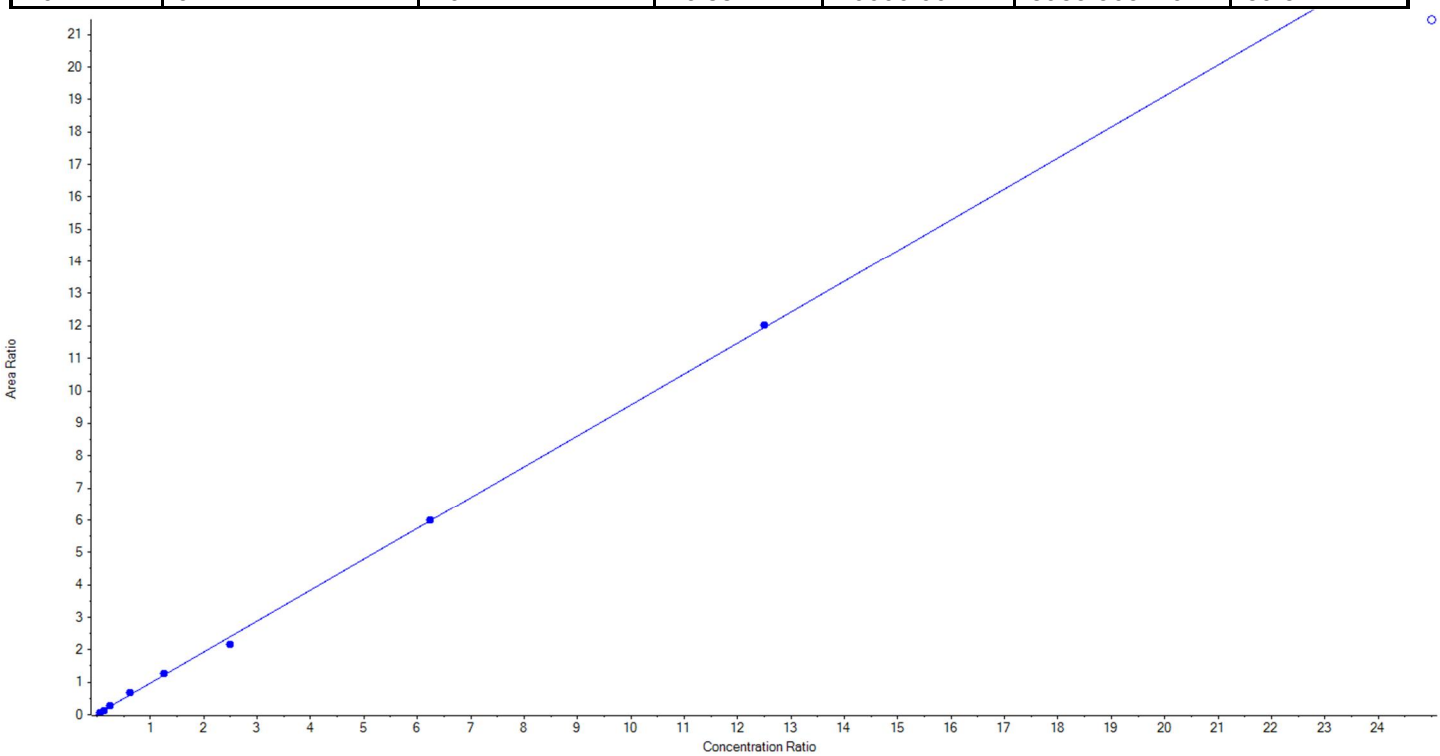
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	NEtFOSAA_1	**Data File**	06142018.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.95440 x + 0.01894 (r = 0.99905) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	25.00	21.706634	86.8
3	JV65	L2	True	50.00	50.086096	100.2
4	JV66	L3	True	100.00	104.127892	104.1
5	JV67	L4	True	250.00	281.802609	112.7
6	JV68	L5	True	500.00	526.305609	105.3
7	JV69	L6	True	1000.00	899.501802	90.0
8	JV70	L7	True	2500.00	2505.582444	100.2
9	JV71	L8	True	5000.00	5035.886915	100.7
10	JV72	L9	False	10000.00	8983.565719	89.8



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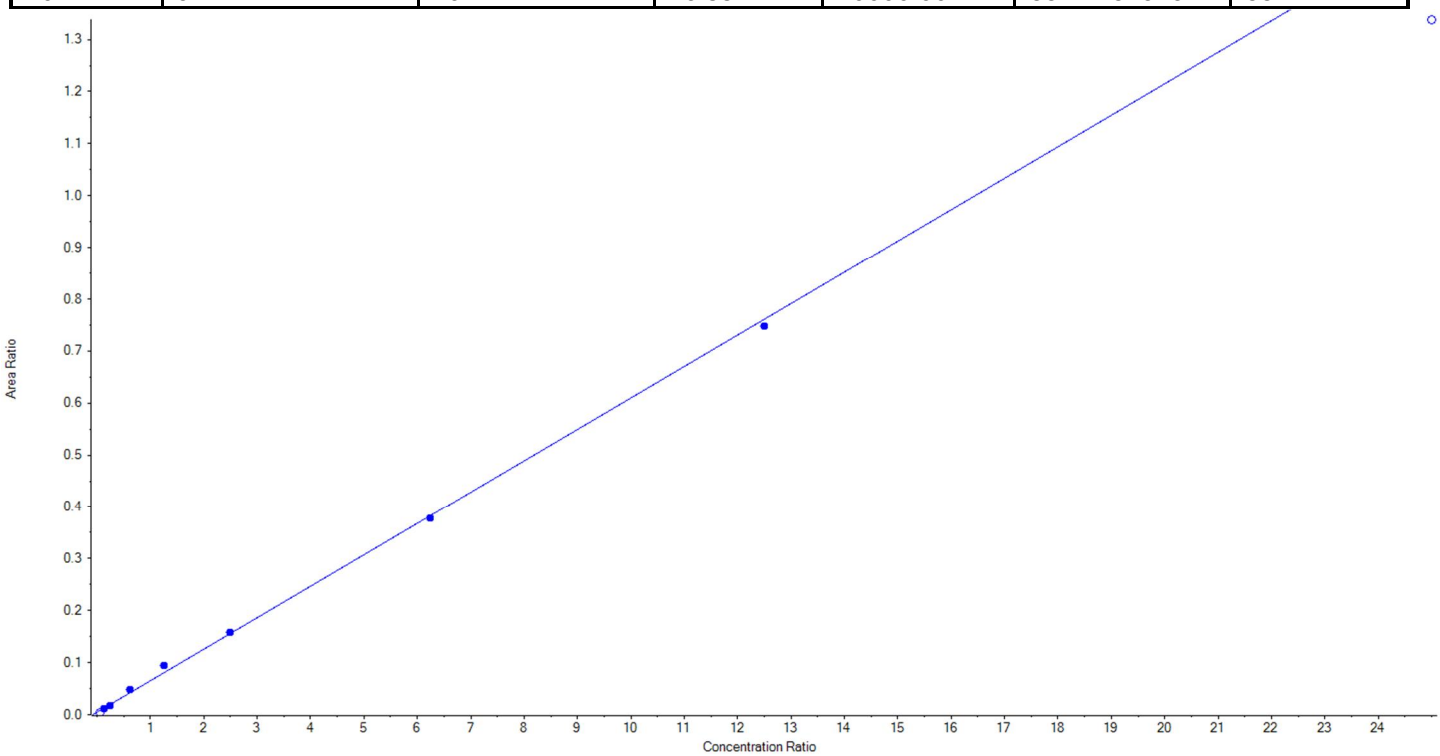
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	NEtFOSAA_2	**Data File**	06142018.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0343_D
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.06052 x + 0.00462 (r = 0.99821) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	False	25.00	< 0	N/A
3	JV65	L2	True	50.00	43.168842	86.3
4	JV66	L3	True	100.00	81.448858	81.5
5	JV67	L4	True	250.00	288.381153	115.4
6	JV68	L5	True	500.00	590.474442	118.1
7	JV69	L6	True	1000.00	1018.984274	101.9
8	JV70	L7	True	2500.00	2465.841563	98.6
9	JV71	L8	True	5000.00	4911.700867	98.2
10	JV72	L9	False	10000.00	8811.481525	88.1



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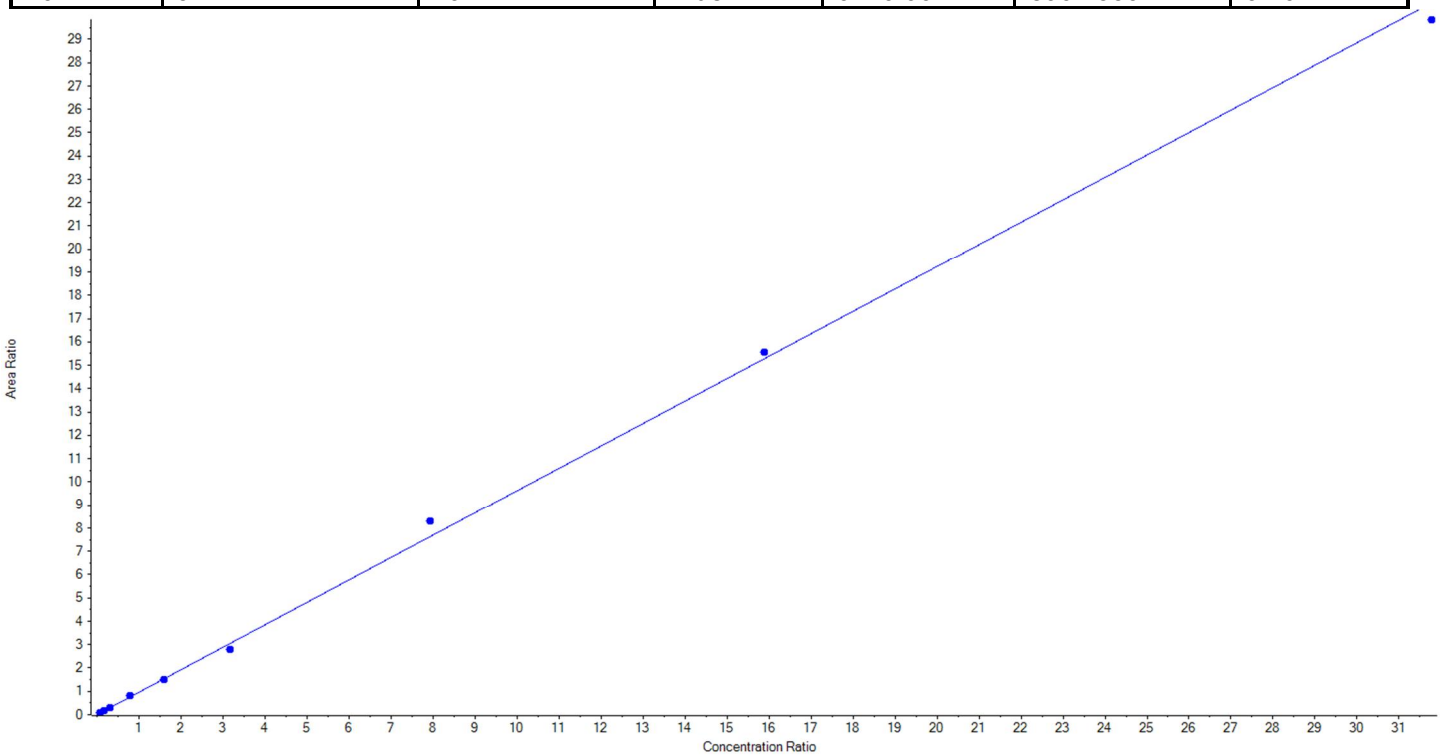
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	PFHxS_1	**Data File**	06142018.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.96173 x + 8.14311e-4 (r = 0.99904) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	22.80	23.113979	101.4
3	JV65	L2	True	45.60	45.133652	99.0
4	JV66	L3	True	91.20	85.929781	94.2
5	JV67	L4	True	228.00	242.553797	106.4
6	JV68	L5	True	456.00	451.959127	99.1
7	JV69	L6	True	912.00	835.159405	91.6
8	JV70	L7	True	2280.00	2480.305200	108.8
9	JV71	L8	True	4560.00	4649.105634	102.0
10	JV72	L9	True	9120.00	8902.339424	97.6



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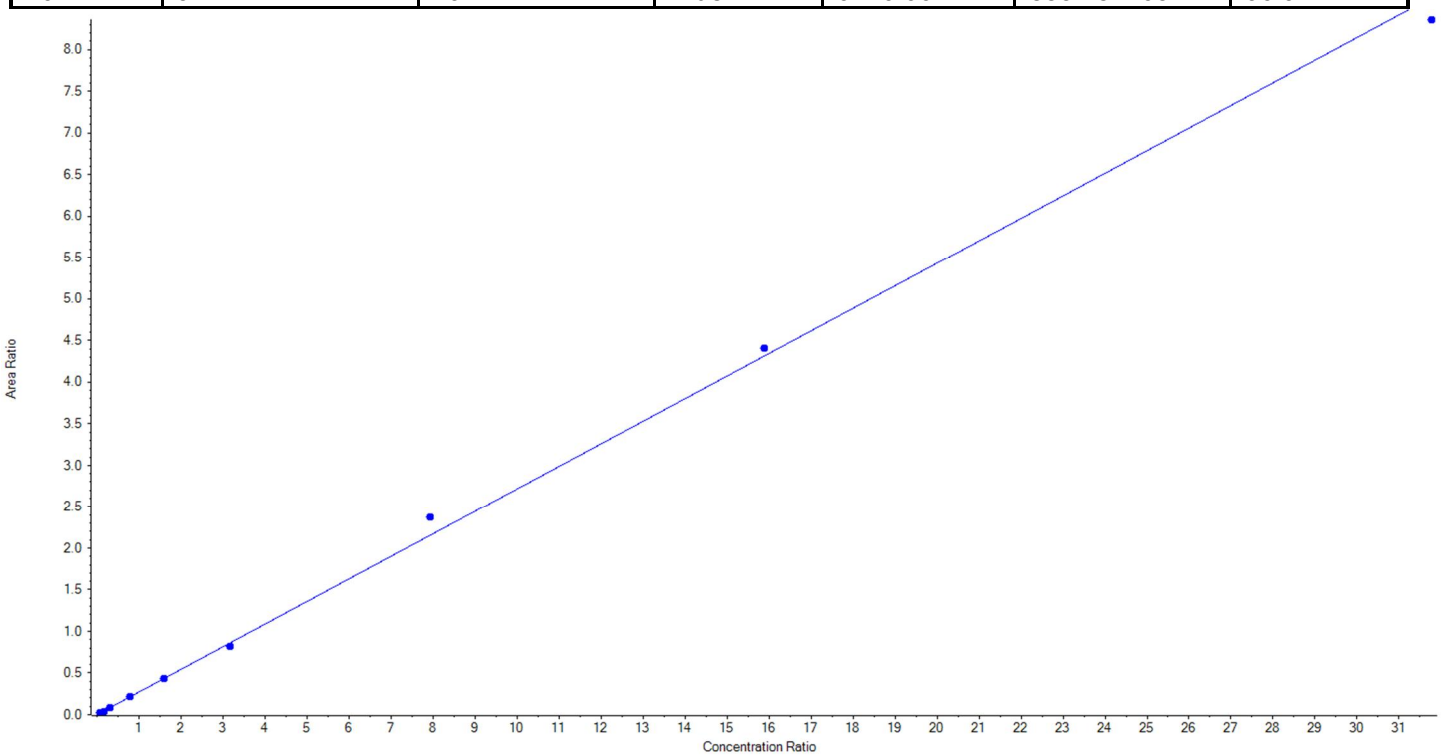
Calibration Summary Report

Created with Analyst Reporter
Printed: 19/06/2018 2:42:29 PM

Analyte Name	PFHxS_2	**Data File**	06142018.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0343_D
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/14/2018 4:50:52 PM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.27149 x + 2.53933e-4 (r = 0.99889) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JV64	L1	True	22.80	22.866571	100.3
3	JV65	L2	True	45.60	42.803628	93.9
4	JV66	L3	True	91.20	89.969775	98.7
5	JV67	L4	True	228.00	233.773888	102.5
6	JV68	L5	True	456.00	461.321184	101.2
7	JV69	L6	True	912.00	860.777010	94.4
8	JV70	L7	True	2280.00	2508.578625	110.0
9	JV71	L8	True	4560.00	4660.695287	102.2
10	JV72	L9	True	9120.00	8834.814031	96.9



	Drinking Water Calibration Curve Concentrations (ng/L)								
	JV64	**JV65**	**JV66**	**JV67**	**JV68**	**JV69**	**JV70**	**JV71**	**JV72**
PFHxA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFHpA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFOA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFNA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFUnA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDoA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTrDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTeDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NMeFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NEtFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFBS	22.15	44.30	88.60	221.50	443.00	885.00	2,212.50	4,425.00	8,850.00
PFHxS (branched)	22.80	45.60	91.20	228.00	456.00	912.00	2,280.00	4,560.00	9,120.00
PFOS (branched)	23.15	46.30	92.60	231.50	463.00	925.60	2,314.00	4,628.00	9,256.00
	Surrogates								
13C2-PFHxA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C2-PFDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
d5-EtFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
	Internal Standards								
13C2-PFOA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C4-PFOS	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00
d3-MeFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:07:10 AM

Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T15:56:17	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.355	0.314	ü
PFHxA_1	313.0 / 269.0	N/A	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	N/A	0.070	
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	PFHpA	N/A	0.025	
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.262	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.083	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.97	PFNA	0.281	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.207	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.061	0.046	ü
PFUnA_1	563.0 / 519.0	3.65	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.066	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.94	PFDoA	0.167	0.170	ü
PFTrDA_1	663.0 / 619.0	4.19	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.068	0.069	ü
PFTeDA_1	713.0 / 669.0	4.41	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	PFTeDA	0.055	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.762	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	NEtFOSAA	N/A	0.065	
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.63		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:05:13	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.325	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.060	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.029	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.268	0.278	ü
PFOA_1	413.0 / 369.0	2.59	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.080	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.283	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.175	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.65	PFUnA			
PFUnA_2	563.0 / 269.0	3.65	PFUnA	0.056	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.181	0.170	ü
PFTrDA_1	663.0 / 619.0	4.19	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.071	0.069	ü
PFTeDA_1	713.0 / 669.0	4.41	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	PFTeDA	0.059	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.599	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.63	NEtFOSAA	0.055	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:14:09	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.302	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.071	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.027	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.272	0.278	ü
PFOA_1	413.0 / 369.0	2.59	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.076	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.266	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.203	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.048	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.052	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.173	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.41	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.594	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.61	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:23:04	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.308	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.069	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.023	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.278	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.077	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.268	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.186	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.040	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.050	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.165	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.067	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.051	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.675	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.61	NEtFOSAA	0.078	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:32:01	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.302	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.025	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.275	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.97	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.286	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.182	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.045	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.053	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.175	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.068	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.628	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:40:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.305	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.074	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.286	0.278	ü
PFOA_1	413.0 / 369.0	2.59	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.079	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.300	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.190	0.190	ü
PFDA_1	513.0 / 469.0	3.32	PFDA			
PFDA_2	513.0 / 219.0	3.32	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.052	0.054	ü
PFDoA_1	613.0 / 569.0	3.93	PFDoA			
PFDoA_2	613.0 / 319.0	3.93	PFDoA	0.169	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.071	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.051	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.47	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.47	NMeFOSAA	0.611	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.063	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.31		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:49:51	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.309	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.073	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.025	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.289	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.287	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.189	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.044	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.049	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.160	0.170	ü
PFTrDA_1	663.0 / 619.0	4.18	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.18	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.626	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T16:58:44	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.307	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.82	PFHxA	0.072	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.023	0.025	ü
PFHxS_1	399.0 / 80.0	2.21	PFHxS			
PFHxS_2	399.0 / 99.0	2.21	PFHxS	0.290	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.077	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.285	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.184	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.045	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.053	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.168	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.39	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.649	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.62	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.067	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JV64	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T16:59:48	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.208	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.633	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.58	NEtFOSAA	0.042	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.280	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV65	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:08:44	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.175	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.648	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.081	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.268	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV66	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:17:40	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.196	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.863	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.61	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.063	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.296	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV67	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:26:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.202	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.594	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.070	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.60				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.272	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV68	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:35:30	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.201	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.617	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.074	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.288	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV69	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:44:26	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.194	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.615	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.073	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.291	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV70	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T17:53:22	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.190	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.623	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.063	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.286	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
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Sample Name	JV71	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:02:19	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.188	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.43	NMeFOSAA	0.600	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.062	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.283	0.283	ü

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Summary Ion Ratio Report

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Sample Name	JV72	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:11:15	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.93	PFOS			
PFOS_2	499.0 / 99.0	2.93	PFOS	0.181	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.623	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.59	NEtFOSAA	0.062	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.280	0.283	ü

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QC Summary Report

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Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.53	769.814184	885.00	86.98
PFBS_2	298.9 / 99.0	1.53	768.732726	885.00	86.86
PFHxA_1	313.0 / 269.0	1.83	913.521393	1000.00	91.35
PFHxA_2	313.0 / 119.0	1.83	959.405514	1000.00	95.94
PFHpA_1	363.0 / 319.0	2.20	975.515715	1000.00	97.55
PFHpA_2	363.0 / 169.0	2.20	933.315191	1000.00	93.33
PFHxS_1	399.0 / 80.0	2.22	811.740410	912.00	89.01
PFHxS_2	399.0 / 99.0	2.22	817.049228	912.00	89.59
PFOA_1	413.0 / 369.0	2.58	965.386755	1000.00	96.54
PFOA_2	413.0 / 169.0	2.58	998.658491	1000.00	99.87
PFNA_1	463.0 / 419.0	2.96	1012.084378	1000.00	101.21
PFNA_2	463.0 / 219.0	2.96	999.124217	1000.00	99.91
PFOS_1	499.0 / 80.0	2.96	830.439673	925.60	89.72
PFOS_2	499.0 / 99.0	2.96	958.171478	925.60	103.52
PFDA_1	513.0 / 469.0	3.31	991.407583	1000.00	99.14
PFDA_2	513.0 / 219.0	3.31	945.139477	1000.00	94.51
PFUnA_1	563.0 / 519.0	3.64	967.807751	1000.00	96.78
PFUnA_2	563.0 / 269.0	3.64	916.483234	1000.00	91.65
PFDoA_1	613.0 / 569.0	3.92	941.687144	1000.00	94.17
PFDoA_2	613.0 / 319.0	3.92	1014.928377	1000.00	101.49
PFTrDA_1	663.0 / 619.0	4.17	1018.529815	1000.00	101.85
PFTrDA_2	663.0 / 169.0	4.17	949.195149	1000.00	94.92
PFTeDA_1	713.0 / 669.0	4.40	968.709307	1000.00	96.87
PFTeDA_2	713.0 / 169.0	4.39	951.457285	1000.00	95.15
NMeFOSAA_1	570.0 / 419.0	3.46	1180.922001	1000.00	118.09
NMeFOSAA_2	570.0 / 512.0	3.46	1019.447817	1000.00	101.94
NEtFOSAA_1	584.0 / 419.0	3.63	1095.902443	1000.00	109.59
NEtFOSAA_2	584.0 / 483.0	3.62	910.459126	1000.00	91.05
13C2-PFHxA	315.0 / 270.0	1.82	95.569328	100.00	95.57
13C2-PFDA	515.0 / 470.0	3.30	99.569731	100.00	99.57
d5-EtFOSAA	589.0 / 419.0	3.62	396.879979	400.00	99.22

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QC Summary Report

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Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.53	881.857889	885.00	99.64
PFBS_2	298.9 / 99.0	1.52	849.892294	885.00	96.03
PFHxA_1	313.0 / 269.0	1.82	1034.069600	1000.00	103.41
PFHxA_2	313.0 / 119.0	1.81	1091.443831	1000.00	109.14
PFHpA_1	363.0 / 319.0	2.19	1002.612281	1000.00	100.26
PFHpA_2	363.0 / 169.0	2.19	998.898230	1000.00	99.89
PFHxS_1	399.0 / 80.0	2.20	876.169410	912.00	96.07
PFHxS_2	399.0 / 99.0	2.20	876.686414	912.00	96.13
PFOA_1	413.0 / 369.0	2.57	1002.975354	1000.00	100.30
PFOA_2	413.0 / 169.0	2.57	1038.225708	1000.00	103.82
PFNA_1	463.0 / 419.0	2.95	1037.366769	1000.00	103.74
PFNA_2	463.0 / 219.0	2.95	1031.087202	1000.00	103.11
PFOS_1	499.0 / 80.0	2.95	948.400082	925.60	102.46
PFOS_2	499.0 / 99.0	2.95	955.315612	925.60	103.21
PFDA_1	513.0 / 469.0	3.30	991.771585	1000.00	99.18
PFDA_2	513.0 / 219.0	3.30	1035.697641	1000.00	103.57
PFUnA_1	563.0 / 519.0	3.63	1034.712043	1000.00	103.47
PFUnA_2	563.0 / 269.0	3.63	1059.849536	1000.00	105.98
PFDoA_1	613.0 / 569.0	3.91	1010.145399	1000.00	101.01
PFDoA_2	613.0 / 319.0	3.91	1032.524238	1000.00	103.25
PFTrDA_1	663.0 / 619.0	4.16	1075.677948	1000.00	107.57
PFTrDA_2	663.0 / 169.0	4.16	1075.514084	1000.00	107.55
PFTeDA_1	713.0 / 669.0	4.38	1058.986582	1000.00	105.90
PFTeDA_2	713.0 / 169.0	4.38	1044.190425	1000.00	104.42
NMeFOSAA_1	570.0 / 419.0	3.45	1022.268574	1000.00	102.23
NMeFOSAA_2	570.0 / 512.0	3.45	985.718286	1000.00	98.57
NEtFOSAA_1	584.0 / 419.0	3.61	1020.436238	1000.00	102.04
NEtFOSAA_2	584.0 / 483.0	3.60	1052.187110	1000.00	105.22
13C2-PFHxA	315.0 / 270.0	1.81	101.542239	100.00	101.54
13C2-PFDA	515.0 / 470.0	3.29	102.044634	100.00	102.04
d5-EtFOSAA	589.0 / 419.0	3.61	398.416383	400.00	99.60

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QC Summary Report

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Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.52	2259.136103	2212.50	102.11
PFBS_2	298.9 / 99.0	1.52	2194.392765	2212.50	99.18
PFHxA_1	313.0 / 269.0	1.81	2620.579452	2500.00	104.82
PFHxA_2	313.0 / 119.0	1.81	2687.066684	2500.00	107.48
PFHpA_1	363.0 / 319.0	2.19	2540.015150	2500.00	101.60
PFHpA_2	363.0 / 169.0	2.18	2555.364373	2500.00	102.21
PFHxS_1	399.0 / 80.0	2.20	2239.862810	2280.00	98.24
PFHxS_2	399.0 / 99.0	2.20	2185.367686	2280.00	95.85
PFOA_1	413.0 / 369.0	2.57	2497.354006	2500.00	99.89
PFOA_2	413.0 / 169.0	2.56	2655.754414	2500.00	106.23
PFNA_1	463.0 / 419.0	2.95	2664.589533	2500.00	106.58
PFNA_2	463.0 / 219.0	2.94	2686.051730	2500.00	107.44
PFOS_1	499.0 / 80.0	2.94	2274.079112	2314.00	98.27
PFOS_2	499.0 / 99.0	2.94	2484.053411	2314.00	107.35
PFDA_1	513.0 / 469.0	3.29	2543.892704	2500.00	101.76
PFDA_2	513.0 / 219.0	3.29	2396.781290	2500.00	95.87
PFUnA_1	563.0 / 519.0	3.62	2719.449304	2500.00	108.78
PFUnA_2	563.0 / 269.0	3.62	2669.210041	2500.00	106.77
PFDoA_1	613.0 / 569.0	3.90	2682.223083	2500.00	107.29
PFDoA_2	613.0 / 319.0	3.90	2526.462529	2500.00	101.06
PFTrDA_1	663.0 / 619.0	4.15	2822.284791	2500.00	112.89
PFTrDA_2	663.0 / 169.0	4.15	2811.064588	2500.00	112.44
PFTeDA_1	713.0 / 669.0	4.37	2618.133951	2500.00	104.73
PFTeDA_2	713.0 / 169.0	4.37	2638.079251	2500.00	105.52
NMeFOSAA_1	570.0 / 419.0	3.44	2701.184358	2500.00	108.05
NMeFOSAA_2	570.0 / 512.0	3.44	2750.606573	2500.00	110.02
NEtFOSAA_1	584.0 / 419.0	3.61	2771.708903	2500.00	110.87
NEtFOSAA_2	584.0 / 483.0	3.60	2685.150118	2500.00	107.41
13C2-PFHxA	315.0 / 270.0	1.80	106.376897	100.00	106.38
13C2-PFDA	515.0 / 470.0	3.28	107.168729	100.00	107.17
d5-EtFOSAA	589.0 / 419.0	3.60	402.783760	400.00	100.70

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QC Summary Report

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Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFOS_1	499.0 / 80.0	2.94	776.808686	925.60	83.92
PFOS_2	499.0 / 99.0	2.94	927.382992	925.60	100.19
NMeFOSAA_1	570.0 / 419.0	3.44	1047.991249	1000.00	104.80
NMeFOSAA_2	570.0 / 512.0	3.44	958.185598	1000.00	95.82
NEtFOSAA_1	584.0 / 419.0	3.60	1011.174456	1000.00	101.12
NEtFOSAA_2	584.0 / 483.0	3.60	968.508372	1000.00	96.85
d5-EtFOSAA	589.0 / 419.0	3.59	336.683989	400.00	84.17
PFHxS_1	399.0 / 80.0	2.20	834.309815	912.00	91.48
PFHxS_2	399.0 / 99.0	2.20	828.791116	912.00	90.88

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QC Summary Report

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Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFOS_1	499.0 / 80.0	2.92	2382.188057	2314.00	102.95
PFOS_2	499.0 / 99.0	2.92	2415.297397	2314.00	104.38
NMeFOSAA_1	570.0 / 419.0	3.43	2363.483557	2500.00	94.54
NMeFOSAA_2	570.0 / 512.0	3.42	2517.716065	2500.00	100.71
NEtFOSAA_1	584.0 / 419.0	3.59	2529.071006	2500.00	101.16
NEtFOSAA_2	584.0 / 483.0	3.57	2582.116782	2500.00	103.28
d5-EtFOSAA	589.0 / 419.0	3.58	396.266324	400.00	99.07
PFHxS_1	399.0 / 80.0	2.19	2224.752859	2280.00	97.58
PFHxS_2	399.0 / 99.0	2.19	2274.191190	2280.00	99.75

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Summary Quant Report

Created with Analyst Reporter
Printed: 15/06/2018 10:39:35 AM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	323659.14	769.814184	1310.9	false
PFBS_2	298.9 / 99.0	1.53	99677.31	768.732726	712.6	false
PFHxA_1	313.0 / 269.0	1.83	421454.43	913.521393	100.3	true
PFHxA_2	313.0 / 119.0	1.83	31525.30	959.405514	79.2	false
PFHpA_1	363.0 / 319.0	2.20	489477.54	975.515715	171.5	false
PFHpA_2	363.0 / 169.0	2.20	11477.65	933.315191	158.3	true
PFHxS_1	399.0 / 80.0	2.22	419684.42	811.740410	359.7	false
PFHxS_2	399.0 / 99.0	2.22	120864.86	817.049228	309.4	false
PFOA_1	413.0 / 369.0	2.58	528070.92	965.386755	186.6	false
PFOA_2	413.0 / 169.0	2.58	42807.17	998.658491	151.2	false
PFNA_1	463.0 / 419.0	2.96	494935.41	1012.084378	330.3	false
PFNA_2	463.0 / 219.0	2.96	139828.85	999.124217	247.0	false
PFOS_1	499.0 / 80.0	2.96	487877.99	830.439673	75.2	true
PFOS_2	499.0 / 99.0	2.96	105127.24	958.171478	90.0	true
PFDA_1	513.0 / 469.0	3.31	517316.64	991.407583	588.2	false
PFDA_2	513.0 / 219.0	3.31	22152.46	945.139477	581.6	false
PFUnA_1	563.0 / 519.0	3.64	457702.03	967.807751	512.2	false
PFUnA_2	563.0 / 269.0	3.64	22728.78	916.483234	277.8	false
PFDoA_1	613.0 / 569.0	3.92	467909.25	941.687144	451.5	false
PFDoA_2	613.0 / 319.0	3.92	84158.50	1014.928377	599.8	false
PFTrDA_1	663.0 / 619.0	4.17	472130.14	1018.529815	696.2	false
PFTrDA_2	663.0 / 169.0	4.17	30487.30	949.195149	426.1	false
PFTeDA_1	713.0 / 669.0	4.40	404261.23	968.709307	1154.4	false
PFTeDA_2	713.0 / 169.0	4.39	20747.44	951.457285	806.7	false
NMeFOSAA_1	570.0 / 419.0	3.46	68024.59	1180.922001	914.7	false
NMeFOSAA_2	570.0 / 512.0	3.46	37475.24	1019.447817	642.2	false
NEtFOSAA_1	584.0 / 419.0	3.63	60844.62	1095.902443	540.2	false
NEtFOSAA_2	584.0 / 483.0	3.62	3327.84	910.459126	362.3	false
13C2-PFHxA	315.0 / 270.0	1.82	42294.38	95.569328	792.8	false
13C2-PFDA	515.0 / 470.0	3.30	50904.40	99.569731	666.5	false
d5-EtFOSAA	589.0 / 419.0	3.62	24796.73	396.879979	241.7	false

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Summary Quant Report

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Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	420599.32	881.857889	1612.8	false
PFBS_2	298.9 / 99.0	1.52	124945.86	849.892294	874.2	false
PFHxA_1	313.0 / 269.0	1.82	540639.07	1034.069600	123.9	false
PFHxA_2	313.0 / 119.0	1.81	40749.30	1091.443831	77.9	false
PFHpA_1	363.0 / 319.0	2.19	573835.63	1002.612281	221.6	false
PFHpA_2	363.0 / 169.0	2.19	13968.12	998.898230	181.4	false
PFHxS_1	399.0 / 80.0	2.20	513944.02	876.169410	361.5	false
PFHxS_2	399.0 / 99.0	2.20	147231.22	876.686414	295.8	false
PFOA_1	413.0 / 369.0	2.57	625201.86	1002.975354	185.7	false
PFOA_2	413.0 / 169.0	2.57	50709.60	1038.225708	156.1	false
PFNA_1	463.0 / 419.0	2.95	578761.62	1037.366769	410.8	false
PFNA_2	463.0 / 219.0	2.95	164632.98	1031.087202	253.3	false
PFOS_1	499.0 / 80.0	2.95	631966.64	948.400082	40.4	true
PFOS_2	499.0 / 99.0	2.95	118927.06	955.315612	70.1	true
PFDA_1	513.0 / 469.0	3.30	590646.67	991.771585	510.7	false
PFDA_2	513.0 / 219.0	3.30	27643.42	1035.697641	475.8	false
PFUnA_1	563.0 / 519.0	3.63	557930.97	1034.712043	510.1	false
PFUnA_2	563.0 / 269.0	3.63	29894.37	1059.849536	310.9	false
PFDoA_1	613.0 / 569.0	3.91	572579.78	1010.145399	565.0	false
PFDoA_2	613.0 / 319.0	3.91	97699.08	1032.524238	664.5	false
PFTrDA_1	663.0 / 619.0	4.16	568890.44	1075.677948	692.9	false
PFTrDA_2	663.0 / 169.0	4.16	39394.89	1075.514084	466.0	false
PFTeDA_1	713.0 / 669.0	4.38	504019.89	1058.986582	1280.6	false
PFTeDA_2	713.0 / 169.0	4.38	25956.85	1044.190425	956.3	false
NMeFOSAA_1	570.0 / 419.0	3.45	68455.79	1022.268574	639.0	false
NMeFOSAA_2	570.0 / 512.0	3.45	42087.96	985.718286	741.8	false
NEtFOSAA_1	584.0 / 419.0	3.61	65895.25	1020.436238	499.2	false
NEtFOSAA_2	584.0 / 483.0	3.60	4450.04	1052.187110	541.1	false
13C2-PFHxA	315.0 / 270.0	1.81	51289.08	101.542239	598.9	false
13C2-PFDA	515.0 / 470.0	3.29	59543.20	102.044634	3309.8	false
d5-EtFOSAA	589.0 / 419.0	3.61	28901.26	398.416383	282.6	false

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Summary Quant Report

Created with Analyst Reporter
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Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.52	1030287.58	2259.136103	2804.2	false
PFBS_2	298.9 / 99.0	1.52	307424.60	2194.392765	1315.3	false
PFHxA_1	313.0 / 269.0	1.81	1276267.02	2620.579452	161.5	false
PFHxA_2	313.0 / 119.0	1.81	94735.97	2687.066684	139.5	false
PFHpA_1	363.0 / 319.0	2.19	1381887.26	2540.015150	327.0	false
PFHpA_2	363.0 / 169.0	2.18	33296.17	2555.364373	258.2	false
PFHxS_1	399.0 / 80.0	2.20	1256661.02	2239.862810	421.2	false
PFHxS_2	399.0 / 99.0	2.20	352890.21	2185.367686	440.2	false
PFOA_1	413.0 / 369.0	2.57	1463344.19	2497.354006	297.2	false
PFOA_2	413.0 / 169.0	2.56	121754.86	2655.754414	275.5	false
PFNA_1	463.0 / 419.0	2.95	1417280.19	2664.589533	591.6	false
PFNA_2	463.0 / 219.0	2.94	409915.06	2686.051730	398.9	false
PFOS_1	499.0 / 80.0	2.94	1448036.67	2274.079112	81.3	true
PFOS_2	499.0 / 99.0	2.94	294523.82	2484.053411	125.1	true
PFDA_1	513.0 / 469.0	3.29	1446990.07	2543.892704	839.5	false
PFDA_2	513.0 / 219.0	3.29	60781.02	2396.781290	772.6	false
PFUnA_1	563.0 / 519.0	3.62	1399137.76	2719.449304	707.4	false
PFUnA_2	563.0 / 269.0	3.62	71525.44	2669.210041	494.7	false
PFDoA_1	613.0 / 569.0	3.90	1457893.86	2682.223083	685.5	false
PFDoA_2	613.0 / 319.0	3.90	228659.80	2526.462529	767.8	false
PFTrDA_1	663.0 / 619.0	4.15	1431759.68	2822.284791	1008.1	false
PFTrDA_2	663.0 / 169.0	4.15	98785.47	2811.064588	745.4	false
PFTeDA_1	713.0 / 669.0	4.37	1194282.68	2618.133951	1728.2	false
PFTeDA_2	713.0 / 169.0	4.37	62688.10	2638.079251	1321.4	false
NMeFOSAA_1	570.0 / 419.0	3.44	168359.65	2701.184358	1174.2	false
NMeFOSAA_2	570.0 / 512.0	3.44	109074.47	2750.606573	981.8	false
NEtFOSAA_1	584.0 / 419.0	3.61	164847.86	2771.708903	653.9	false
NEtFOSAA_2	584.0 / 483.0	3.60	10491.60	2685.150118	405.3	false
13C2-PFHxA	315.0 / 270.0	1.80	51745.06	106.376897	674.5	false
13C2-PFDA	515.0 / 470.0	3.28	60221.77	107.168729	965.0	false
d5-EtFOSAA	589.0 / 419.0	3.60	27357.01	402.783760	236.3	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:47:19 PM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.94	587622.45	776.808686	164.3	true
PFOS_2	499.0 / 99.0	2.94	130411.74	927.382992	168.0	true
NMeFOSAA_1	570.0 / 419.0	3.44	81522.04	1047.991249	1008.7	false
NMeFOSAA_2	570.0 / 512.0	3.44	45589.20	958.185598	888.7	false
NEtFOSAA_1	584.0 / 419.0	3.60	72260.20	1011.174456	777.2	false
NEtFOSAA_2	584.0 / 483.0	3.60	4491.63	968.508372	318.3	false
d5-EtFOSAA	589.0 / 419.0	3.59	27828.01	336.683989	310.7	false
PFHxS_1	399.0 / 80.0	2.20	508615.46	834.309815	498.4	false
PFHxS_2	399.0 / 99.0	2.20	142633.50	828.791116	438.8	false

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Summary Quant Report

Created with Analyst Reporter
Printed: 19/06/2018 2:47:23 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFOS_1	499.0 / 80.0	2.92	1842903.58	2382.188057	157.8	false
PFOS_2	499.0 / 99.0	2.92	346243.35	2415.297397	198.4	false
NMeFOSAA_1	570.0 / 419.0	3.43	182461.28	2363.483557	1200.0	false
NMeFOSAA_2	570.0 / 512.0	3.42	118364.27	2517.716065	1154.8	false
NEtFOSAA_1	584.0 / 419.0	3.59	178848.30	2529.071006	663.0	false
NEtFOSAA_2	584.0 / 483.0	3.57	11678.49	2582.116782	488.1	false
d5-EtFOSAA	589.0 / 419.0	3.58	32563.64	396.266324	321.4	false
PFHxS_1	399.0 / 80.0	2.19	1386140.69	2224.752859	506.0	false
PFHxS_2	399.0 / 99.0	2.19	399996.71	2274.191190	420.4	false

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:07:58 AM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
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	0.308	0.314	ü
PFHxA_1	313.0 / 269.0	1.83	PFHxA			
PFHxA_2	313.0 / 119.0	1.83	PFHxA	0.075	0.070	ü
PFHpA_1	363.0 / 319.0	2.20	PFHpA			
PFHpA_2	363.0 / 169.0	2.20	PFHpA	0.023	0.025	ü
PFHxS_1	399.0 / 80.0	2.22	PFHxS			
PFHxS_2	399.0 / 99.0	2.22	PFHxS	0.288	0.278	ü
PFOA_1	413.0 / 369.0	2.58	PFOA			
PFOA_2	413.0 / 169.0	2.58	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.96	PFNA			
PFNA_2	463.0 / 219.0	2.96	PFNA	0.283	0.282	ü
PFOS_1	499.0 / 80.0	2.96	PFOS			
PFOS_2	499.0 / 99.0	2.96	PFOS	0.216	0.190	ü
PFDA_1	513.0 / 469.0	3.31	PFDA			
PFDA_2	513.0 / 219.0	3.31	PFDA	0.043	0.046	ü
PFUnA_1	563.0 / 519.0	3.64	PFUnA			
PFUnA_2	563.0 / 269.0	3.64	PFUnA	0.050	0.054	ü
PFDoA_1	613.0 / 569.0	3.92	PFDoA			
PFDoA_2	613.0 / 319.0	3.92	PFDoA	0.180	0.170	ü
PFTrDA_1	663.0 / 619.0	4.17	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.17	PFTrDA	0.065	0.069	ü
PFTeDA_1	713.0 / 669.0	4.40	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.39	PFTeDA	0.051	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.46	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.46	NMeFOSAA	0.551	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.63	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.62	NEtFOSAA	0.055	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.82				
13C2-PFDA	515.0 / 470.0	3.30		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.62		N/A	N/A	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:08:01 AM

Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.53	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.297	0.314	ü
PFHxA_1	313.0 / 269.0	1.82	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.075	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.19	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.287	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.57	PFOA	0.081	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.95	PFNA	0.285	0.282	ü
PFOS_1	499.0 / 80.0	2.95	PFOS			
PFOS_2	499.0 / 99.0	2.95	PFOS	0.188	0.190	ü
PFDA_1	513.0 / 469.0	3.30	PFDA			
PFDA_2	513.0 / 219.0	3.30	PFDA	0.047	0.046	ü
PFUnA_1	563.0 / 519.0	3.63	PFUnA			
PFUnA_2	563.0 / 269.0	3.63	PFUnA	0.054	0.054	ü
PFDoA_1	613.0 / 569.0	3.91	PFDoA			
PFDoA_2	613.0 / 319.0	3.91	PFDoA	0.171	0.170	ü
PFTrDA_1	663.0 / 619.0	4.16	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.16	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.38	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.38	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.45	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.45	NMeFOSAA	0.615	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.61	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.068	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.81				
13C2-PFDA	515.0 / 470.0	3.29		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.61		N/A	N/A	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 15/06/2018 11:08:03 AM

Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.52	PFBS			
PFBS_2	298.9 / 99.0	1.52	PFBS	0.298	0.314	ü
PFHxA_1	313.0 / 269.0	1.81	PFHxA			
PFHxA_2	313.0 / 119.0	1.81	PFHxA	0.074	0.070	ü
PFHpA_1	363.0 / 319.0	2.19	PFHpA			
PFHpA_2	363.0 / 169.0	2.18	PFHpA	0.024	0.025	ü
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.281	0.278	ü
PFOA_1	413.0 / 369.0	2.57	PFOA			
PFOA_2	413.0 / 169.0	2.56	PFOA	0.083	0.079	ü
PFNA_1	463.0 / 419.0	2.95	PFNA			
PFNA_2	463.0 / 219.0	2.94	PFNA	0.289	0.282	ü
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.203	0.190	ü
PFDA_1	513.0 / 469.0	3.29	PFDA			
PFDA_2	513.0 / 219.0	3.29	PFDA	0.042	0.046	ü
PFUnA_1	563.0 / 519.0	3.62	PFUnA			
PFUnA_2	563.0 / 269.0	3.62	PFUnA	0.051	0.054	ü
PFDoA_1	613.0 / 569.0	3.90	PFDoA			
PFDoA_2	613.0 / 319.0	3.90	PFDoA	0.157	0.170	ü
PFTrDA_1	663.0 / 619.0	4.15	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.15	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.37	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.37	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.648	0.643	ü
NEtFOSAA_1	584.0 / 419.0	3.61	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.064	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.80				
13C2-PFDA	515.0 / 470.0	3.28		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.60		N/A	N/A	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 19/06/2018 2:53:51 PM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.94	PFOS			
PFOS_2	499.0 / 99.0	2.94	PFOS	0.222	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.44	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.44	NMeFOSAA	0.559	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.60	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.60	NEtFOSAA	0.062	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.59				
PFHxS_1	399.0 / 80.0	2.20	PFHxS			
PFHxS_2	399.0 / 99.0	2.20	PFHxS	0.280	0.283	ü

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Summary Ion Ratio Report

Created with Analyst Reporter
Printed: 19/06/2018 2:53:53 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFOS_1	499.0 / 80.0	2.92	PFOS			
PFOS_2	499.0 / 99.0	2.92	PFOS	0.188	0.193	ü
NMeFOSAA_1	570.0 / 419.0	3.43	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.42	NMeFOSAA	0.649	0.649	ü
NEtFOSAA_1	584.0 / 419.0	3.59	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.57	NEtFOSAA	0.065	0.069	ü
d5-EtFOSAA	589.0 / 419.0	3.58				
PFHxS_1	399.0 / 80.0	2.19	PFHxS			
PFHxS_2	399.0 / 99.0	2.19	PFHxS	0.289	0.283	ü

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:40:30 AM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:07:40	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHpA_2	363.0 / 169.0	2.20	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFHxS_1	399.0 / 80.0	2.22	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFHxS_2	399.0 / 99.0	2.22	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFOA_2	413.0 / 169.0	2.58	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFOS_1	499.0 / 80.0	2.96	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFOS_2	499.0 / 99.0	2.96	13C4-PFOS	503.0 / 80.0	144565.71	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFUnA_1	563.0 / 519.0	3.64	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFUnA_2	563.0 / 269.0	3.64	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFDoA_1	613.0 / 569.0	3.92	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTrDA_2	663.0 / 169.0	4.17	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTeDA_1	713.0 / 669.0	4.40	13C2-PFOA	415.0 / 370.0	51704.19	100.00
PFTeDA_2	713.0 / 169.0	4.39	13C2-PFOA	415.0 / 370.0	51704.19	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
NMeFOSAA_2	570.0 / 512.0	3.46	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
NEtFOSAA_1	584.0 / 419.0	3.63	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
NEtFOSAA_2	584.0 / 483.0	3.62	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	51704.19	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	51704.19	100.00
d5-EtFOSAA	589.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	24696.95	400.00

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:40:33 AM

Sample Name	JV69 CCV	**Injection Vial**	20
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T18:27:56	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFHxA_1	313.0 / 269.0	1.82	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHpA_2	363.0 / 169.0	2.19	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFNA_2	463.0 / 219.0	2.95	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFOS_1	499.0 / 80.0	2.95	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	164027.66	287.00
PFDA_1	513.0 / 469.0	3.30	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFDA_2	513.0 / 219.0	3.30	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFUnA_1	563.0 / 519.0	3.63	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFUnA_2	563.0 / 269.0	3.63	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFDoA_2	613.0 / 319.0	3.91	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTrDA_1	663.0 / 619.0	4.16	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTrDA_2	663.0 / 169.0	4.16	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTeDA_1	713.0 / 669.0	4.38	13C2-PFOA	415.0 / 370.0	59011.92	100.00
PFTeDA_2	713.0 / 169.0	4.38	13C2-PFOA	415.0 / 370.0	59011.92	100.00
NMeFOSAA_1	570.0 / 419.0	3.45	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
NMeFOSAA_2	570.0 / 512.0	3.45	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
NEtFOSAA_1	584.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00
13C2-PFHxA	315.0 / 270.0	1.81	13C2-PFOA	415.0 / 370.0	59011.92	100.00
13C2-PFDA	515.0 / 470.0	3.29	13C2-PFOA	415.0 / 370.0	59011.92	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	28673.97	400.00

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:40:36 AM

Sample Name	JV70 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T19:57:07	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.52	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFBS_2	298.9 / 99.0	1.52	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFHxA_1	313.0 / 269.0	1.81	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHxA_2	313.0 / 119.0	1.81	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHpA_1	363.0 / 319.0	2.19	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHpA_2	363.0 / 169.0	2.18	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFOA_1	413.0 / 369.0	2.57	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFOA_2	413.0 / 169.0	2.56	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFNA_1	463.0 / 419.0	2.95	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFNA_2	463.0 / 219.0	2.94	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	156969.18	287.00
PFDA_1	513.0 / 469.0	3.29	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFDA_2	513.0 / 219.0	3.29	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFUnA_1	563.0 / 519.0	3.62	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFUnA_2	563.0 / 269.0	3.62	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFDoA_1	613.0 / 569.0	3.90	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFDoA_2	613.0 / 319.0	3.90	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTrDA_1	663.0 / 619.0	4.15	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTrDA_2	663.0 / 169.0	4.15	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTeDA_1	713.0 / 669.0	4.37	13C2-PFOA	415.0 / 370.0	56830.73	100.00
PFTeDA_2	713.0 / 169.0	4.37	13C2-PFOA	415.0 / 370.0	56830.73	100.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
NEtFOSAA_1	584.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00
13C2-PFHxA	315.0 / 270.0	1.80	13C2-PFOA	415.0 / 370.0	56830.73	100.00
13C2-PFDA	515.0 / 470.0	3.28	13C2-PFOA	415.0 / 370.0	56830.73	100.00
d5-EtFOSAA	589.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	26847.56	400.00

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 19/06/2018 2:48:11 PM

Sample Name	JV63 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T18:20:10	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.94	13C4-PFOS	503.0 / 80.0	181871.52	287.00
PFOS_2	499.0 / 99.0	2.94	13C4-PFOS	503.0 / 80.0	181871.52	287.00
NMeFOSAA_1	570.0 / 419.0	3.44	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
NMeFOSAA_2	570.0 / 512.0	3.44	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
NEtFOSAA_1	584.0 / 419.0	3.60	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
NEtFOSAA_2	584.0 / 483.0	3.60	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
d5-EtFOSAA	589.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	29716.93	400.00
PFHxS_1	399.0 / 80.0	2.20	13C4-PFOS	503.0 / 80.0	181871.52	287.00
PFHxS_2	399.0 / 99.0	2.20	13C4-PFOS	503.0 / 80.0	181871.52	287.00

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 19/06/2018 2:48:14 PM

Sample Name	JV70 CCV	**Injection Vial**	8
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-14T21:36:35	**Data File**	06142018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343_D
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFOS_1	499.0 / 80.0	2.92	13C4-PFOS	503.0 / 80.0	185911.85	287.00
PFOS_2	499.0 / 99.0	2.92	13C4-PFOS	503.0 / 80.0	185911.85	287.00
NMeFOSAA_1	570.0 / 419.0	3.43	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
NMeFOSAA_2	570.0 / 512.0	3.42	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
NEtFOSAA_1	584.0 / 419.0	3.59	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
NEtFOSAA_2	584.0 / 483.0	3.57	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
d5-EtFOSAA	589.0 / 419.0	3.58	d3-MeFOSAA	573.0 / 419.0	29545.42	400.00
PFHxS_1	399.0 / 80.0	2.19	13C4-PFOS	503.0 / 80.0	185911.85	287.00
PFHxS_2	399.0 / 99.0	2.19	13C4-PFOS	503.0 / 80.0	185911.85	287.00

Battelle

The Business of Innovation

Chain-of-Custody

Client Contact Information
Andy Frebowitz
234 Mall Boulevard, Suite 260
King of Prussia, PA 19406
610-382-1170

Project Manager: Jonathan Thorn
Sampler Information (print name): Mary Kay Bond
Phone: 610-382-1169
Email: mary.bond@tetratech.com
Turnaround Time (TAT) Requested: 21 days

Project Name: WE04
Project No.: 112G08005-WE04

Normal ☑
Priority ☐
RUSH ☐
Time Zone: Eastern

Sampling Site: WE04

Site Information: NAS JRB Willow Grove/WGNA Warminster

COC #

Page# 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservativ: Trizma	Analysis: PFAS EPA 537 14 analytes	
WGNA-052918-RW-3124 J6258	5/29/2018	9:40	G	DW	2		X	
WGNA-052918-FRB-3124 J6259	5/29/2018	9:35	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3493 J6260	5/29/2018	10:10	G	DW	2		X	
WGNA-052918-FRB-3493 J6261	5/29/2018	10:05	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3882 J6262	5/29/2018	10:25	G	DW	2		X	
WGNA-052918-FRB-3882 J6263	5/29/2018	10:20	G	DW	2		X	Field Reagent Blank
WGNA-052918-RW-3978 J6264	5/29/2018	10:40	G	DW	2		X	
WGNA-052918-FRB-3978 J6265	5/29/2018	10:35	G	DW	2		X	Field Reagent Blank
NAWC-052918-RW-161 J6266	5/29/2018	11:40	G	DW	2		X	
NAWC-052918-FRB-161 J6267	5/29/2018	11:35	G	DW	2		X	Field Reagent Blank

Receipt Temperature:(°C) 1.7°

Samples Intact: Yes - No

Samples on Ice: Yes - No

Receipt Comments:

Relinquished by (Print/Sign)	Company	Date/Time	Received by (Print/Sign)	Company	Date/Time
	Tetra Tech	05/29/2018 16:00	Matt Schermitz	Battelle	5-30-18 10:30

Comments: FedEx Tracking # 7723 3007 0381

Battelle

The Business of Innovation

Chain-of-Custody

Client Contact Information
Andy Frebowitz
234 Mall Boulevard, Suite 260
King of Prussia, PA 19406
610-382-1170

Project Manager: Jonathan Thorn
Sampler Information (print name): Mary Kay Bond
Phone: 610-382-1169
Email: mary.bond@tetratech.com
Turnaround Time (TAT) Requested: 21 days

Project Name: WE04
Project No.: 112G08005-WE04

Normal ☑
Priority ☐
RUSH ☐
Time Zone: Eastern

Sampling Site: WE04
Site Information: NAS JRB Willow Grove/WGNA Warminster

COC #

Page# 1 of 1

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Preservative: Trizma	Analysis: PFAS EPA 537 14 analytes	
WGNA-053018-RW-3876 J6270	5/30/2018	8:10	G	DW	2		X	
WGNA-053018-FRB-3876 71	5/30/2018	8:05	G	DW	2		X	Field Reagent Blank
WGNA-053018-DUP-37 72	5/30/2018	7:00	G	DW	2		X	DUPLICATE
NAWC-053018-RW-231 73	5/30/2018	8:40	G	DW	2		X	
NAWC-053018-FRB-231 74	5/30/2018	8:35	G	DW	2		X	Field Reagent Blank
WGNA-053018-RW-3933 75	5/30/2018	11:10	G	DW	2		X	
WGNA-053018-FRB-3933 76	5/30/2018	11:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-164 77	5/30/2018	14:10	G	DW	2		X	
NAWC-053018-FRB-164 78	5/30/2018	14:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-292 79	5/30/2018	14:40	G	DW	2		X	
NAWC-053018-FRB-292 80	5/30/2018	14:35	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-271 81	5/30/2018	15:10	G	DW	2		X	
NAWC-053018-FRB-271 82	5/30/2018	15:05	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-270 83	5/30/2018	15:20	G	DW	2		X	
NAWC-053018-FRB-270 84	5/30/2018	15:15	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-196 85	5/30/2018	15:40	G	DW	2		X	
NAWC-053018-FRB-196 86	5/30/2018	15:35	G	DW	2		X	Field Reagent Blank
NAWC-053018-RW-172 87	5/30/2018	16:10	G	DW	2		X	
NAWC-053018-FRB-172 J6288	5/30/2018	16:05	G	DW	2		X	Field Reagent Blank

Receipt Temperature:(°C) 1.3

Samples Intact: Yes - No

Samples on Ice: Yes - No

Receipt Comments:

Relinquished by (Print/Sign):	Company:	Date/Time:	Received by (Print/Sign):	Company:	Date/Time:
Mary Kay Bond	Tetra Tech	05/30/2018 18:00	Matt Schumitz MS	Battelle	5-31-18 1030

Comments: FedEx Tracking # 7723 4831 5079

QA/QC Summary
Batch 18-0391

Project:	CTO-WE04 Naval Air Station Joint Reserve Base Willow Grove
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	DW
Data Set:	DP-18-0157
Analytical SOP:	5-371
Method Reference:	USEPA 537 rev. 1.1, QSM 5.1

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
5/29/2018	5/30/2018	1.7
5/30/2018	5/31/2018	1.3

Corrective Actions	None
Sample Storage	The water samples were stored refrigerated until extraction.
Related samples	The associated FRB samples are reported in SDG 18-0343.

	METHOD SUMMARIES
Sample Preparation	Water samples were spiked with surrogates in the original sample container from the field. The water was extracted using a weak ion exchange solid phase extraction (SPE) cartridge and eluted from the SPE with methanol. Extracts were concentrated to dryness under nitrogen with a water bath set between 60 °C and 65 °C, reconstituted with 96:4 methanol/water (V/V) and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis.
Prep comments	None.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations.
Analysis Comments	Samples analyzed on the Sciex 5500. All field samples were re-extracted (original Battelle SDG 18-0359). These samples were re-extracted due to suspected cross-contamination from other, un-related PFAS samples in the lab concurrently. New results do not show the levels of PFHxS and PFOS found in the original SDG extraction. The re-extracted samples are “T” qualified as they were extracted outside of the 14 day holding time. PFTeDA in the LCS was above the calibration level and is “E” qualified. There are no ion ratio exceedences above 50% RPD for any analyte detected above the MDL or the LOQ in this SDG.

QA/QC Summary
Batch 18-0391

Holding Times	Extraction Date(s)	Analysis Date(s)
	6/21/2018	6/27/2018

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

Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.
70-130% of true value	One exceedance noted.
	PFTeDA is over-recovered. Where this target is over-recovered and not detected in any of the associated samples, no further corrective action was taken.

Matrix Spike (MS) / Duplicate (MSD)	A MS/MSD were prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference was calculated to measure precision.
70-130% of true value, RPD ≤ 30%	No exceedances noted.
	MS/MSD samples were not processed with this batch of field reagent blank samples.

Surrogates Standard Analytes	Labelled surrogate compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.
70-130% of true value	No exceedances noted.
	No comments.

Internal Standard Analytes	Labelled analog compounds were added prior to analysis.
ICAL high and low points RPD ≤20%, 50-150% of average area of the ICAL and 70-140% of most recent CCV	No exceedances noted.
	No comments.

QA/QC Summary
Batch 18-0391

Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadradic curve fitting.
R^2 >0.99 Target and SIS compounds +/- 30% of true value, Low point 50-150% of true value	No exceedances noted.
	No comments.

Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
Target and SIS compounds +/- 30% of true value	No exceedances noted.
	No comments.

Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
Target and SIS compounds +/- 30% of true value Low point 50-150% of true value	No exceedances noted.
	No comments.

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BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0391

WE04 PFAS Analysis

DW

Sample ID	Description
CR038PB-FS	Procedural Blank
CR039LCS-FS	Laboratory Control Sample
J6259-FS1	WGNA-052918-FRB-3124
J6261-FS1	WGNA-052918-FRB-3493
J6263-FS1	WGNA-052918-FRB-3882
J6265-FS1	WGNA-052918-FRB-3978
J6267-FS1	NAWC-052918-FRB-161
J6271-FS1	WGNA-053018-FRB-3876
J6274-FS1	NAWC-053018-FRB-231
J6276-FS1	WGNA-053018-FRB-3933
J6278-FS1	NAWC-053018-FRB-164
J6280-FS1	NAWC-053018-FRB-292
J6282-FS1	NAWC-053018-FRB-271
J6284-FS1	NAWC-053018-FRB-270
J6286-FS1	NAWC-053018-FRB-196
J6288-FS1	NAWC-053018-FRB-172

Samples Assigned By: Stephanie Schultz Date : June 21, 2018

Comments:

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Procedural Blank			
Battelle ID	CR038PB-FS			
Sample Type	PB			
Collection Date	06/21/2018			
Extraction Date	06/21/2018			
Analysis Date	06/27/2018			
Analytical Instrument	Sciex 5500 LC/MS/MS			
% Moisture	NA			
Matrix	WATER			
Sample Size	0.250			
Size Unit-Basis	L			
Units	ng/L	MDL	LOD	LOQ
PFHxA	0.44 J	0.22	0.50	2.50
PFHpA	1.00 U	0.34	1.00	2.50
PFOA	1.00 U	0.38	1.00	2.50
PFNA	1.00 U	0.37	1.00	2.50
PFDA	1.00 U	0.39	1.00	2.50
PFUnA	1.00 U	0.38	1.00	2.50
PFDoA	1.00 U	0.42	1.00	2.50
PFTrDA	1.00 U	0.42	1.00	2.50
PFTeDA	1.50 U	0.73	1.50	2.50
NMeFOSAA	1.00 U	0.42	1.00	2.50
NEtFOSAA	1.00 U	0.44	1.00	2.50
PFBS	0.50 U	0.21	0.50	2.50
PFHxS	1.00 U	0.34	1.00	2.50
PFOS	1.00 U	0.30	1.00	2.50

Surrogate Recoveries (%)

13C2-PFHxA	106
13C2-PFDA	95
d5-EtFOSAA	104

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Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

Client ID	Laboratory Control Sample					
Battelle ID	CR039LCS-FS					
Sample Type	LCS					
Collection Date	06/21/2018					
Extraction Date	06/21/2018					
Analysis Date	06/27/2018					
Analytical Instrument	Sciex 5500 LC/MS/MS					
% Moisture	NA					
Matrix	WATER					
Sample Size	0.250					
Size Unit-Basis	L				Control Limits	
Units	ng/L	Target	Recovery	Qual	Lower	Upper
PFHxA	37.78	30.00	126		70	130
PFHpA	37.37	30.00	125		70	130
PFOA	35.66	30.00	119		70	130
PFNA	33.66	30.00	112		70	130
PFDA	35.15	30.00	117		70	130
PFUnA	34.43	30.00	115		70	130
PFDoA	34.48	30.00	115		70	130
PFTrDA	34.47	30.00	115		70	130
PFTeDA	52.57 E	30.00	175	N	70	130
NMeFOSAA	33.79	30.00	113		70	130
NEtFOSAA	37.37	30.00	125		70	130
PFBS	31.67	26.55	119		70	130
PFHxS	32.92	28.35	116		70	130
PFOS	29.27	28.65	102		70	130

Surrogate Recoveries (%)

13C2-PFHxA	105
13C2-PFDA	100
d5-EtFOSAA	83

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It can be done

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project Number: 100117920-WE04
Preparation Batch: 18-0391
Data Set: DP-18-0157
Test Code: Master_371

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	1	PFTeDA is above passing criteria however it was non detect in the PB and samples.
Matrix Spike / Matrix Spike Duplicate Recovery	NA	NA
Matrix Spike / Matrix Spike Duplicate Precision	NA	NA
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None

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BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM

Project Title:	Naval Air Station Joint Reserve Base Wi	**Data Set Number:**	DP-18-0157
Project Number:	100117920-WE04	**Prep Batch Number:**	18-0391
Entered By:	Denise Schumitz	**Entered On:**	06/28/2018
Test Code (Matrix Type):	Master_371(L)		

Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
DMS 6/28/2018

JX67 is not being used for PFOA, PFNA, PFOS and PFDA, there is no impact on the data once this point of the calibration is removed.
DMS 6/28/2018

JX75 is not being used for PFNA and NMeFOSAA, there is no impact on the data once this point of the calibration is removed.
JRT 6/29/2018

JX74 and JX75 are not being used for PFTeDA, there is no impact on the data once these points in the calibration are removed.
DMS 6/28/2018

PFTeDA is over recovered in the LCS however PFTeDA is not found in the Procedural Blank or any of the Field Reagent Blanks. PFTeDA is also above the calibration curve values and is E qualified. DMS 6/28/2018

Task Leader Approval:

SupervisorApproval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2018.06.29 10:02:56 -04'00'

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0391
Data Set: DP-18-0157

	CR038PB-FS (Procedural Blank)	CR039LCS-FS (Laboratory Control Sample)	J6259-FS1 (WGNA-052918-FRB-3124)	J6261-FS1 (WGNA-052918-FRB-3493)	J6263-FS1 (WGNA-052918-FRB-3882)	J6265-FS1 (WGNA-052918-FRB-3978)	J6267-FS1 (NAWC-052918-FRB-161)
PFHxA	-	L	-	-	-	-	-
PFHpA	-	L	-	-	-	-	-
PFOA	-	L	-	-	-	-	-
PFNA	-	L	-	-	-	-	-
PFDA	-	L	-	-	-	-	-
PFUnA	-	L	-	-	-	-	-
PFDoA	-	L	-	-	-	-	-
PFTrDA	-	L	-	-	-	-	-
PFTeDA	-	L	-	-	-	-	-
NMeFOSAA	-	L	-	-	-	-	-
NEtFOSAA	-	L	-	-	-	-	-
PFBS	-	L	-	-	-	-	-
PFHxS	-	L	-	-	-	-	-
PFOS	-	L	L/Br	L/Br	-	L/Br	-

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

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04
Preparation Batch: 18-0391
Data Set: DP-18-0157

	J6271-FS1 (WGNA-053018-FRB-3876)	J6274-FS1 (NAWC-053018-FRB-231)	J6276-FS1 (WGNA-053018-FRB-3933)	J6278-FS1 (NAWC-053018-FRB-164)	J6280-FS1 (NAWC-053018-FRB-292)	J6282-FS1 (NAWC-053018-FRB-271)	J6284-FS1 (NAWC-053018-FRB-270)	J6286-FS1 (NAWC-053018-FRB-196)	J6288-FS1 (NAWC-053018-FRB-172)
PFHxA	-	-	-	-	-	-	-	-	-
PFHpA	-	-	-	-	-	-	-	-	-
PFOA	-	-	-	-	-	-	-	-	-
PFNA	-	-	-	-	-	-	-	-	-
PFDA	-	-	-	-	-	-	-	-	-
PFUnA	-	-	-	-	-	-	-	-	-
PFDoA	-	-	-	-	-	-	-	-	-
PFTrDA	-	-	-	-	-	-	-	-	-
PFTeDA	-	-	-	-	-	-	-	-	-
NMeFOSAA	-	-	-	-	-	-	-	-	-
NEtFOSAA	-	-	-	-	-	-	-	-	-
PFBS	-	-	-	-	-	-	-	-	-
PFHxS	-	-	-	-	-	-	-	-	-
PFOS	-	-	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: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JX67	L1	6/27/18 9:05	13C4-PFOS	195,712.77	-	
JX68	L2	6/27/18 9:14	13C4-PFOS	208,133.24	-	
JX69	L3	6/27/18 9:23	13C4-PFOS	196,602.67	-	
JX70	L4	6/27/18 9:32	13C4-PFOS	221,233.77	-	
JX71	L5	6/27/18 9:41	13C4-PFOS	207,482.97	-	
JX72	L6	6/27/18 9:50	13C4-PFOS	205,389.92	-	
JX73	L7	6/27/18 9:59	13C4-PFOS	210,418.05	-	
JX74	L8	6/27/18 10:08	13C4-PFOS	173,679.17	-	
JX75	L9	6/27/18 10:17	13C4-PFOS	184,387.98	6	PASS

Average	Lower	Upper
200,337.84	100,168.92	300,506.76

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JX67	L1	6/27/18 9:05	13C4-PFOS	195,712.77	100,168.92	300,506.76		145,238.08	290,476.16	
JX68	L2	6/27/18 9:14	13C4-PFOS	208,133.24	100,168.92	300,506.76		145,238.08	290,476.16	
JX69	L3	6/27/18 9:23	13C4-PFOS	196,602.67	100,168.92	300,506.76		145,238.08	290,476.16	
JX70	L4	6/27/18 9:32	13C4-PFOS	221,233.77	100,168.92	300,506.76		145,238.08	290,476.16	
JX71	L5	6/27/18 9:41	13C4-PFOS	207,482.97	100,168.92	300,506.76		145,238.08	290,476.16	
JX72	L6	6/27/18 9:50	13C4-PFOS	205,389.92	100,168.92	300,506.76		145,238.08	290,476.16	
JX73	L7	6/27/18 9:59	13C4-PFOS	210,418.05	100,168.92	300,506.76		145,238.08	290,476.16	
JX74	L8	6/27/18 10:08	13C4-PFOS	173,679.17	100,168.92	300,506.76		145,238.08	290,476.16	
JX75	L9	6/27/18 10:17	13C4-PFOS	184,387.98	100,168.92	300,506.76		145,238.08	290,476.16	
JV66 ICC	ICC	6/27/18 10:26	13C4-PFOS	198,955.94	100,168.92	300,506.76		145,238.08	290,476.16	
CR038PB-FS(0)	Procedural Blank	6/27/18 10:43	13C4-PFOS	225,022.84	100,168.92	300,506.76		145,238.08	290,476.16	
CR039LCS-FS(0)	Laboratory Control Sample	6/27/18 10:52	13C4-PFOS	152,210.75	100,168.92	300,506.76		145,238.08	290,476.16	
J6259-FS1(0)	WGNA-052918-FRB-3124	6/27/18 11:01	13C4-PFOS	180,195.54	100,168.92	300,506.76		145,238.08	290,476.16	
J6261-FS1(0)	WGNA-052918-FRB-3493	6/27/18 11:10	13C4-PFOS	205,385.70	100,168.92	300,506.76		145,238.08	290,476.16	
J6263-FS1(0)	WGNA-052918-FRB-3882	6/27/18 11:19	13C4-PFOS	188,519.90	100,168.92	300,506.76		145,238.08	290,476.16	
J6265-FS1(0)	WGNA-052918-FRB-3978	6/27/18 11:28	13C4-PFOS	164,186.92	100,168.92	300,506.76		145,238.08	290,476.16	
J6267-FS1(0)	NAWC-052918-FRB-161	6/27/18 11:37	13C4-PFOS	145,398.75	100,168.92	300,506.76		145,238.08	290,476.16	
J6271-FS1(0)	WGNA-053018-FRB-3876	6/27/18 11:46	13C4-PFOS	195,694.27	100,168.92	300,506.76		145,238.08	290,476.16	
JX71 CCV	CCV	6/27/18 11:55	13C4-PFOS	219,627.88	100,168.92	300,506.76		145,238.08	290,476.16	
J6274-FS1(0)	NAWC-053018-FRB-231	6/27/18 12:13	13C4-PFOS	200,366.83	100,168.92	300,506.76		153,739.52	307,479.03	
J6276-FS1(0)	WGNA-053018-FRB-3933	6/27/18 12:22	13C4-PFOS	186,902.87	100,168.92	300,506.76		153,739.52	307,479.03	
J6278-FS1(0)	NAWC-053018-FRB-164	6/27/18 12:31	13C4-PFOS	194,513.22	100,168.92	300,506.76		153,739.52	307,479.03	
J6280-FS1(0)	NAWC-053018-FRB-292	6/27/18 12:40	13C4-PFOS	189,125.92	100,168.92	300,506.76		153,739.52	307,479.03	
J6282-FS1(0)	NAWC-053018-FRB-271	6/27/18 12:48	13C4-PFOS	173,540.17	100,168.92	300,506.76		153,739.52	307,479.03	
J6284-FS1(0)	NAWC-053018-FRB-270	6/27/18 12:57	13C4-PFOS	181,494.76	100,168.92	300,506.76		153,739.52	307,479.03	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JX67	L1	6/27/18 9:05	13C4-PFOS	195,712.77	-	
JX68	L2	6/27/18 9:14	13C4-PFOS	208,133.24	-	
JX69	L3	6/27/18 9:23	13C4-PFOS	196,602.67	-	
JX70	L4	6/27/18 9:32	13C4-PFOS	221,233.77	-	
JX71	L5	6/27/18 9:41	13C4-PFOS	207,482.97	-	
JX72	L6	6/27/18 9:50	13C4-PFOS	205,389.92	-	
JX73	L7	6/27/18 9:59	13C4-PFOS	210,418.05	-	
JX74	L8	6/27/18 10:08	13C4-PFOS	173,679.17	-	
JX75	L9	6/27/18 10:17	13C4-PFOS	184,387.98	6	PASS

Average	Lower	Upper
200,337.84	100,168.92	300,506.76

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6286-FS1(0)	NAWC-053018-FRB-196	6/27/18 13:06	13C4-PFOS	192,046.27	100,168.92	300,506.76		153,739.52	307,479.03	
J6288-FS1(0)	NAWC-053018-FRB-172	6/27/18 13:15	13C4-PFOS	193,563.16	100,168.92	300,506.76		153,739.52	307,479.03	
JX72 CCV	CCV	6/27/18 13:24	13C4-PFOS	212,681.05	100,168.92	300,506.76		153,739.52	307,479.03	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JX67	L1	6/27/18 9:05	13C2-PFOA	62,699.72	-	
JX68	L2	6/27/18 9:14	13C2-PFOA	68,551.10	-	
JX69	L3	6/27/18 9:23	13C2-PFOA	68,688.50	-	
JX70	L4	6/27/18 9:32	13C2-PFOA	68,613.81	-	
JX71	L5	6/27/18 9:41	13C2-PFOA	68,780.04	-	
JX72	L6	6/27/18 9:50	13C2-PFOA	70,145.13	-	
JX73	L7	6/27/18 9:59	13C2-PFOA	68,944.70	-	
JX74	L8	6/27/18 10:08	13C2-PFOA	60,796.66	-	
JX75	L9	6/27/18 10:17	13C2-PFOA	68,647.41	9.1	PASS

Average	Lower	Upper
67,318.56	33,659.28	100,977.84

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JX67	L1	6/27/18 9:05	13C2-PFOA	62,699.72	33,659.28	100,977.84		48,146.03	96,292.06	
JX68	L2	6/27/18 9:14	13C2-PFOA	68,551.10	33,659.28	100,977.84		48,146.03	96,292.06	
JX69	L3	6/27/18 9:23	13C2-PFOA	68,688.50	33,659.28	100,977.84		48,146.03	96,292.06	
JX70	L4	6/27/18 9:32	13C2-PFOA	68,613.81	33,659.28	100,977.84		48,146.03	96,292.06	
JX71	L5	6/27/18 9:41	13C2-PFOA	68,780.04	33,659.28	100,977.84		48,146.03	96,292.06	
JX72	L6	6/27/18 9:50	13C2-PFOA	70,145.13	33,659.28	100,977.84		48,146.03	96,292.06	
JX73	L7	6/27/18 9:59	13C2-PFOA	68,944.70	33,659.28	100,977.84		48,146.03	96,292.06	
JX74	L8	6/27/18 10:08	13C2-PFOA	60,796.66	33,659.28	100,977.84		48,146.03	96,292.06	
JX75	L9	6/27/18 10:17	13C2-PFOA	68,647.41	33,659.28	100,977.84		48,146.03	96,292.06	
JV66 ICC	ICC	6/27/18 10:26	13C2-PFOA	64,713.81	33,659.28	100,977.84		48,146.03	96,292.06	
CR038PB-FS(0)	Procedural Blank	6/27/18 10:43	13C2-PFOA	74,771.38	33,659.28	100,977.84		48,146.03	96,292.06	
CR039LCS-FS(0)	Laboratory Control Sample	6/27/18 10:52	13C2-PFOA	51,742.87	33,659.28	100,977.84		48,146.03	96,292.06	
J6259-FS1(0)	WGNA-052918-FRB-3124	6/27/18 11:01	13C2-PFOA	59,385.53	33,659.28	100,977.84		48,146.03	96,292.06	
J6261-FS1(0)	WGNA-052918-FRB-3493	6/27/18 11:10	13C2-PFOA	66,889.73	33,659.28	100,977.84		48,146.03	96,292.06	
J6263-FS1(0)	WGNA-052918-FRB-3882	6/27/18 11:19	13C2-PFOA	62,147.50	33,659.28	100,977.84		48,146.03	96,292.06	
J6265-FS1(0)	WGNA-052918-FRB-3978	6/27/18 11:28	13C2-PFOA	55,473.53	33,659.28	100,977.84		48,146.03	96,292.06	
J6267-FS1(0)	NAWC-052918-FRB-161	6/27/18 11:37	13C2-PFOA	48,894.83	33,659.28	100,977.84		48,146.03	96,292.06	
J6271-FS1(0)	WGNA-053018-FRB-3876	6/27/18 11:46	13C2-PFOA	63,825.98	33,659.28	100,977.84		48,146.03	96,292.06	
JX71 CCV	CCV	6/27/18 11:55	13C2-PFOA	74,398.92	33,659.28	100,977.84		48,146.03	96,292.06	
J6274-FS1(0)	NAWC-053018-FRB-231	6/27/18 12:13	13C2-PFOA	60,327.15	33,659.28	100,977.84		52,079.24	104,158.49	
J6276-FS1(0)	WGNA-053018-FRB-3933	6/27/18 12:22	13C2-PFOA	59,078.12	33,659.28	100,977.84		52,079.24	104,158.49	
J6278-FS1(0)	NAWC-053018-FRB-164	6/27/18 12:31	13C2-PFOA	62,085.23	33,659.28	100,977.84		52,079.24	104,158.49	
J6280-FS1(0)	NAWC-053018-FRB-292	6/27/18 12:40	13C2-PFOA	60,490.88	33,659.28	100,977.84		52,079.24	104,158.49	
J6282-FS1(0)	NAWC-053018-FRB-271	6/27/18 12:48	13C2-PFOA	56,098.07	33,659.28	100,977.84		52,079.24	104,158.49	
J6284-FS1(0)	NAWC-053018-FRB-270	6/27/18 12:57	13C2-PFOA	56,641.98	33,659.28	100,977.84		52,079.24	104,158.49	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JX67	L1	6/27/18 9:05	13C2-PFOA	62,699.72	-	
JX68	L2	6/27/18 9:14	13C2-PFOA	68,551.10	-	
JX69	L3	6/27/18 9:23	13C2-PFOA	68,688.50	-	
JX70	L4	6/27/18 9:32	13C2-PFOA	68,613.81	-	
JX71	L5	6/27/18 9:41	13C2-PFOA	68,780.04	-	
JX72	L6	6/27/18 9:50	13C2-PFOA	70,145.13	-	
JX73	L7	6/27/18 9:59	13C2-PFOA	68,944.70	-	
JX74	L8	6/27/18 10:08	13C2-PFOA	60,796.66	-	
JX75	L9	6/27/18 10:17	13C2-PFOA	68,647.41	9.1	PASS

Average	Lower	Upper
67,318.56	33,659.28	100,977.84

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6286-FS1(0)	NAWC-053018-FRB-196	6/27/18 13:06	13C2-PFOA	64,159.00	33,659.28	100,977.84		52,079.24	104,158.49	
J6288-FS1(0)	NAWC-053018-FRB-172	6/27/18 13:15	13C2-PFOA	68,300.17	33,659.28	100,977.84		52,079.24	104,158.49	
JX72 CCV	CCV	6/27/18 13:24	13C2-PFOA	73,895.68	33,659.28	100,977.84		52,079.24	104,158.49	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JX67	L1	6/27/18 9:05	d3-MeFOSAA	19,727.67	-	
JX68	L2	6/27/18 9:14	d3-MeFOSAA	21,450.12	-	
JX69	L3	6/27/18 9:23	d3-MeFOSAA	19,858.14	-	
JX70	L4	6/27/18 9:32	d3-MeFOSAA	23,210.57	-	
JX71	L5	6/27/18 9:41	d3-MeFOSAA	21,173.96	-	
JX72	L6	6/27/18 9:50	d3-MeFOSAA	23,772.73	-	
JX73	L7	6/27/18 9:59	d3-MeFOSAA	21,328.18	-	
JX74	L8	6/27/18 10:08	d3-MeFOSAA	18,053.74	-	
JX75	L9	6/27/18 10:17	d3-MeFOSAA	21,785.07	9.9	PASS

Average	Lower	Upper
21,151.13	10,575.57	31,726.70

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
JX67	L1	6/27/18 9:05	d3-MeFOSAA	19,727.67	10,575.57	31,726.70		14,821.77	29,643.54	
JX68	L2	6/27/18 9:14	d3-MeFOSAA	21,450.12	10,575.57	31,726.70		14,821.77	29,643.54	
JX69	L3	6/27/18 9:23	d3-MeFOSAA	19,858.14	10,575.57	31,726.70		14,821.77	29,643.54	
JX70	L4	6/27/18 9:32	d3-MeFOSAA	23,210.57	10,575.57	31,726.70		14,821.77	29,643.54	
JX71	L5	6/27/18 9:41	d3-MeFOSAA	21,173.96	10,575.57	31,726.70		14,821.77	29,643.54	
JX72	L6	6/27/18 9:50	d3-MeFOSAA	23,772.73	10,575.57	31,726.70		14,821.77	29,643.54	
JX73	L7	6/27/18 9:59	d3-MeFOSAA	21,328.18	10,575.57	31,726.70		14,821.77	29,643.54	
JX74	L8	6/27/18 10:08	d3-MeFOSAA	18,053.74	10,575.57	31,726.70		14,821.77	29,643.54	
JX75	L9	6/27/18 10:17	d3-MeFOSAA	21,785.07	10,575.57	31,726.70		14,821.77	29,643.54	
JV66 ICC	ICC	6/27/18 10:26	d3-MeFOSAA	18,742.21	10,575.57	31,726.70		14,821.77	29,643.54	
CR038PB-FS(0)	Procedural Blank	6/27/18 10:43	d3-MeFOSAA	20,767.55	10,575.57	31,726.70		14,821.77	29,643.54	
CR039LCS-FS(0)	Laboratory Control Sample	6/27/18 10:52	d3-MeFOSAA	17,020.44	10,575.57	31,726.70		14,821.77	29,643.54	
J6259-FS1(0)	WGNA-052918-FRB-3124	6/27/18 11:01	d3-MeFOSAA	16,791.71	10,575.57	31,726.70		14,821.77	29,643.54	
J6261-FS1(0)	WGNA-052918-FRB-3493	6/27/18 11:10	d3-MeFOSAA	18,014.99	10,575.57	31,726.70		14,821.77	29,643.54	
J6263-FS1(0)	WGNA-052918-FRB-3882	6/27/18 11:19	d3-MeFOSAA	17,937.64	10,575.57	31,726.70		14,821.77	29,643.54	
J6265-FS1(0)	WGNA-052918-FRB-3978	6/27/18 11:28	d3-MeFOSAA	15,356.66	10,575.57	31,726.70		14,821.77	29,643.54	
J6267-FS1(0)	NAWC-052918-FRB-161	6/27/18 11:37	d3-MeFOSAA	14,942.44	10,575.57	31,726.70		14,821.77	29,643.54	
J6271-FS1(0)	WGNA-053018-FRB-3876	6/27/18 11:46	d3-MeFOSAA	17,808.82	10,575.57	31,726.70		14,821.77	29,643.54	
JX71 CCV	CCV	6/27/18 11:55	d3-MeFOSAA	20,862.99	10,575.57	31,726.70		14,821.77	29,643.54	
J6274-FS1(0)	NAWC-053018-FRB-231	6/27/18 12:13	d3-MeFOSAA	17,198.28	10,575.57	31,726.70		14,604.09	29,208.19	
J6276-FS1(0)	WGNA-053018-FRB-3933	6/27/18 12:22	d3-MeFOSAA	15,229.19	10,575.57	31,726.70		14,604.09	29,208.19	
J6278-FS1(0)	NAWC-053018-FRB-164	6/27/18 12:31	d3-MeFOSAA	15,284.67	10,575.57	31,726.70		14,604.09	29,208.19	
J6280-FS1(0)	NAWC-053018-FRB-292	6/27/18 12:40	d3-MeFOSAA	14,886.46	10,575.57	31,726.70		14,604.09	29,208.19	
J6282-FS1(0)	NAWC-053018-FRB-271	6/27/18 12:48	d3-MeFOSAA	14,624.86	10,575.57	31,726.70		14,604.09	29,208.19	
J6284-FS1(0)	NAWC-053018-FRB-270	6/27/18 12:57	d3-MeFOSAA	15,232.48	10,575.57	31,726.70		14,604.09	29,208.19	

Project Client: Tetra Tech
Project Name: Naval Air Station Joint Reserve Base Willow Grove, PA
Project No.: 100117920-WE04

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It can be done

Sample Name	Sample ID	Analysis Date	Analyte	Area	RPD (L1/L9)	
JX67	L1	6/27/18 9:05	d3-MeFOSAA	19,727.67	-	
JX68	L2	6/27/18 9:14	d3-MeFOSAA	21,450.12	-	
JX69	L3	6/27/18 9:23	d3-MeFOSAA	19,858.14	-	
JX70	L4	6/27/18 9:32	d3-MeFOSAA	23,210.57	-	
JX71	L5	6/27/18 9:41	d3-MeFOSAA	21,173.96	-	
JX72	L6	6/27/18 9:50	d3-MeFOSAA	23,772.73	-	
JX73	L7	6/27/18 9:59	d3-MeFOSAA	21,328.18	-	
JX74	L8	6/27/18 10:08	d3-MeFOSAA	18,053.74	-	
JX75	L9	6/27/18 10:17	d3-MeFOSAA	21,785.07	9.9	PASS

Average	Lower	Upper
21,151.13	10,575.57	31,726.70

Sample Name	Sample ID	Analysis Date	Analyte	Area	Lower	Upper	Qualifier	CCV Lower	CCV Upper	Qualifier
J6286-FS1(0)	NAWC-053018-FRB-196	6/27/18 13:06	d3-MeFOSAA	14,939.62	10,575.57	31,726.70		14,604.09	29,208.19	
J6288-FS1(0)	NAWC-053018-FRB-172	6/27/18 13:15	d3-MeFOSAA	18,215.38	10,575.57	31,726.70		14,604.09	29,208.19	
JX72 CCV	CCV	6/27/18 13:24	d3-MeFOSAA	19,404.97	10,575.57	31,726.70		14,604.09	29,208.19	

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Summary Asymmetry Report

Created with Analyst Reporter
Printed: 28/06/2018 11:26:40 AM

Sample Name	JX73	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 9:59:20 AM	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.50	0.96	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.78	1.40	0.8 – 1.5

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Mass Spectral Acquisition Rate Report

Created with Analyst Reporter
Printed: 28/06/2018 11:27:58 AM

Sample Name	JX73	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 9:59:20 AM	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.50	30	>10
PFBS_2	298.9 / 99.0	1.50	35	>10
PFHxA_1	313.0 / 269.0	1.78	26	>10
PFHxA_2	313.0 / 119.0	1.78	29	>10
PFHpA_1	363.0 / 319.0	2.14	32	>10
PFHpA_2	363.0 / 169.0	2.14	31	>10
PFHxS_1	399.0 / 80.0	2.15	32	>10
PFHxS_2	399.0 / 99.0	2.15	35	>10
PFOA_1	413.0 / 369.0	2.51	35	>10
PFOA_2	413.0 / 169.0	2.51	33	>10
PFNA_1	463.0 / 419.0	2.89	32	>10
PFNA_2	463.0 / 219.0	2.89	25	>10
PFOS_1	499.0 / 80.0	2.88	36	>10
PFOS_2	499.0 / 99.0	2.88	35	>10
PFDA_1	513.0 / 469.0	3.23	27	>10
PFDA_2	513.0 / 219.0	3.23	33	>10
PFUnA_1	563.0 / 519.0	3.55	35	>10
PFUnA_2	563.0 / 269.0	3.55	27	>10
PFDoA_1	613.0 / 569.0	3.84	35	>10
PFDoA_2	613.0 / 319.0	3.84	32	>10
PFTrDA_1	663.0 / 619.0	4.09	31	>10
PFTrDA_2	663.0 / 169.0	4.09	26	>10
PFTeDA_1	713.0 / 669.0	4.31	43	>10
PFTeDA_2	713.0 / 169.0	4.31	37	>10
NMeFOSAA_1	570.0 / 419.0	3.38	35	>10
NMeFOSAA_2	570.0 / 512.0	3.38	46	>10
NEtFOSAA_1	584.0 / 419.0	3.54	31	>10
NEtFOSAA_2	584.0 / 483.0	3.54	35	>10
13C2-PFHxA	315.0 / 270.0	1.77	32	>10
13C2-PFDA	515.0 / 470.0	3.23	35	>10
d5-EtFOSAA	589.0 / 419.0	3.53	30	>10

BATTELLE DETECTION LIMITS FOR PFAS IN DRINKING WATER

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

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

Analytes on NELAP and ELAP QSM 5.1 Scope of accreditation

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ID 626 04/18

Analytical Transitions for PFAS in drinking water

SOP 5-371 (EPA 537 Version 1.1)

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFBS	375-73-5	Target	298.9.0 / 80.0	298.9.0 / 99.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
13C2-PFHxA	NA	SIS	315.0 / 270.0	NA
13C2-PFDA	NA	SIS	515.0 / 470.0	NA
d5-EtFOSAA	NA	SIS	589.0 / 419.0	NA
$^{13}C_2$-PFOA	NA	IS	415.0 / 270.0	NA
$^{13}C_4$-PFOS	NA	IS	503.0 / 80.0	NA
d3-MeFOSAA	NA	IS	573.0 / 419.0	NA

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

Mass calibration and Tune Check

QTRAP 5500
Preventive Maintenance Checklist

Preventive Maintenance Date:	22-Feb-2017

Request ID:	3683
Company Name:	Battelle Memorial Institute
Instrument ID:	X60666
Instrument Model:	QTRAP 5500
Instrument Serial Number:	AU23051004

☑ **PASS** ☐ **FAIL**

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

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

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

Comments:_____

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

Approved By :_____ **Date:** _____

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PRE PM PPG PERFORMANCE EVALUATION:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.5	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	1.9	Read Only
☑ CAD Medium	2.4	Read Only
☑ CAD High	3.4	Read Only
☑ CAD 12	3.4	2.4 to 4.5 x10^{-5} Torr

☑ Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification

☑ No degradation or Sensitivity drop

☑ Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification

☑ No degradation or Sensitivity drop

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

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

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

☑ Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: :__19.51%__ (Read Only)

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

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

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

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

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

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

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PREVENTIVE MAINTENANCE CHECKLIST:

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

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

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

☑Pump down overnight if possible. ☐ N/A

☑Perform Maintenance on Turbo V source.

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

POST PM PPG PERFORMANCE TESTS:

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

CAD Settings	Vacuum Reading (x 10^{-5} Torr)	Acceptance Criteria
☑ CAD 0	0.8	0.4 to 1.1 x10^{-5} Torr
☑ CAD Low	2.1	Read Only
☑ CAD Medium	2.6	Read Only
☑ CAD High	3.7	Read Only
☑ CAD 12	3.7	2.4 to 4.5 x10^{-5} Torr

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

Mass	Q1 Intensity		Q1 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133	5.94 e6	≥1.2^{e}6	0.6933	0.6 to 0.8
Q1 500.380	2.25 e7	≥9.0^{e}6	0.7444	0.6 to 0.8
Q1 906.673	2.74 e7	≥1.4^{e}7	0.7347	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673	1.33 e8	≥6.8^{e}7	0.7656	0.6 to 0.8

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

Mass	Q3 Intensity		Q3 Width	Width Specs
	Value	Spec	Value	
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133	4.54 e6	≥1.2^{e}6	0.6390	0.6 to 0.8
Q3 500.380	2.13 e7	≥9.0^{e}6	0.7008	0.6 to 0.8
Q3 906.673	3.04 e7	≥1.4^{e}7	0.7683	0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673	1.51 e8	≥6.8^{e}7	0.7118	0.6 to 0.8

☑ Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.
Transmission Efficiency: 16.93% (≥ 10.0%)

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

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10	1.31 e7	≥1.0^{e}7	0.6895	0.6 to 0.8
Q1 933.636	1000	50	6.32 e7	≥4.0^{e}7	0.6740	0.6 to 0.8

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

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10	1.70 e7	≥8.0^{e}6	0.7665	0.6 to 0.8
Q3 933.636	1000	50	7.41 e7	≥4.0^{e}7	0.7292	0.6 to 0.8

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

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

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

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05	8.08 e6	≥7.2 ^{e}6	0.1302	<0.35
ER 922.010	0.05	3.89 e7	≥2.8 ^{e}6	0.2603	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05	2.55 e7	≥2.4 ^{e}7	0.3740	<0.65
ER 922.010	0.05	2.37 e8	≥6.8 ^{e}7	0.5407	<0.65

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

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05	1.05 e8	≥4.4 ^{e}7	0.1840	<0.35
ER 601.978	0.05	7.74 e7	≥5.6 ^{e}7	0.1849	<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05	3.43 e8	≥1.2 ^{e}8	0.4382	<0.65
ER 601.978	0.05	2.55 e8	≥1.6 ^{e}8	0.6205	<0.65

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QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

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

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

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

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000	3.2 e7	Contains only 397.2	N/A	N/A
☐ 236 OR ☑ 365	1000	1.19 e8	Fragment Intensity	> 4.4 e6	≥1.6x 10e6

REVIEW:

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

END OF PREVENTIVE MAINTENANCE CHECKLIST

Document history:

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

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BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS

Project Title(s)	**Project No.(s)**
Naval Air Station Joint Reserve Base Willow Grove, PA	100117920-WE04

18-0391

WE04 PFAS Analysis

DW

SOP Numbers (see workplan for modifications)

VOASOP No. 5-371

This Batch Contains The Following Samples:		
CR038PB-FS	J6267-FS1	J6282-FS1
CR039LCS-FS	J6271-FS1	J6284-FS1
J6259-FS1	J6274-FS1	J6286-FS1
J6261-FS1	J6276-FS1	J6288-FS1
J6263-FS1	J6278-FS1	
J6265-FS1	J6280-FS1	

Laboratory Preparation Records

COMPLETE AND VALIDATED

Prep Task Leader: Stephanie Schultz

Approved By:	Date	Initials
Denise Schumitz	06/26/2018	DMS

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It can be done

BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0391

WE04 PFAS Analysis

DW

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
CR038PB-FS	Procedural Blank	250.0	NA	--	06/21/18 SAS
CR039LCS-FS	Laboratory Control Sample	250.0	NA	--	06/21/18 SAS
J6259-FS1	WGNA-052918-FRB-3124	250.0	2	C	06/21/18 LMG
J6261-FS1	WGNA-052918-FRB-3493	260.0	2	C	06/21/18 LMG
J6263-FS1	WGNA-052918-FRB-3882	265.0	2	C	06/21/18 LMG
J6265-FS1	WGNA-052918-FRB-3978	270.0	2	C	06/21/18 LMG
J6267-FS1	NAWC-052918-FRB-161	260.0	2	C	06/21/18 LMG
J6271-FS1	WGNA-053018-FRB-3876	255.0	2	C	06/21/18 LMG
J6274-FS1	NAWC-053018-FRB-231	270.0	2	C	06/21/18 LMG
J6276-FS1	WGNA-053018-FRB-3933	250.0	2	C	06/21/18 LMG
J6278-FS1	NAWC-053018-FRB-164	270.0	2	C	06/21/18 LMG
J6280-FS1	NAWC-053018-FRB-292	255.0	2	C	06/21/18 LMG
J6282-FS1	NAWC-053018-FRB-271	270.0	2	C	06/21/18 LMG
J6284-FS1	NAWC-053018-FRB-270	260.0	2	C	06/21/18 LMG
J6286-FS1	NAWC-053018-FRB-196	245.0	2	C	06/21/18 LMG
J6288-FS1	NAWC-053018-FRB-172	240.0	2	C	06/21/18 LMG

Comments:

Sample ID:	Comments:
CR038PB-FS	1.23g Trizma(170526-01) weighed on BAL-009
CR039LCS-FS	1.26g Trizma(170526-01) weighed on BAL-009

Samples Assigned By Stephanie Schultz Date : June 21, 2018

* - "C" = Sample is Consumed

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It can be done

BATTELLE - NORWELL OPERATIONS
INTERNAL STANDARD SPIKING FORM

Project Title(s)
Naval Air Station Joint Reserve Base Willow Grove, PA

Project No.(s)
100117920-WE04

18-0391
WE04 PFAS Analysis
DW

(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
CR038PB-FS(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
CR039LCS-FS(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6259-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6261-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6263-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6265-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6267-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6271-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6274-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6276-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6278-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6280-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6282-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6284-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6286-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG
J6288-FS1(0)	950	50	JV59	50	1	1000	1.000	06/22/18 LMG	SG

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

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

BATTELLE

Sequence Report

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Printed: 28/06/2018 11:29:12 AM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MeOH		6/27/2018 8:56:44 AM	5-0371.dam	06252018_5-371.wiff
2	JX67	L1	6/27/2018 9:05:43 AM	5-0371.dam	06252018_5-371.wiff
3	JX68	L2	6/27/2018 9:14:41 AM	5-0371.dam	06252018_5-371.wiff
4	JX69	L3	6/27/2018 9:23:38 AM	5-0371.dam	06252018_5-371.wiff
5	JX70	L4	6/27/2018 9:32:34 AM	5-0371.dam	06252018_5-371.wiff
6	JX71	L5	6/27/2018 9:41:29 AM	5-0371.dam	06252018_5-371.wiff
7	JX72	L6	6/27/2018 9:50:24 AM	5-0371.dam	06252018_5-371.wiff
8	JX73	L7	6/27/2018 9:59:20 AM	5-0371.dam	06252018_5-371.wiff
9	JX74	L8	6/27/2018 10:08:14 AM	5-0371.dam	06252018_5-371.wiff
10	JX75	L9	6/27/2018 10:17:08 AM	5-0371.dam	06252018_5-371.wiff
11	JV66 ICC	ICC	6/27/2018 10:26:04 AM	5-0371.dam	06252018_5-371.wiff
12	MeOH		6/27/2018 10:34:59 AM	5-0371.dam	06252018_5-371.wiff
13	CR038PB-FS(0)	Procedural Blank	6/27/2018 10:43:54 AM	5-0371.dam	06252018_5-371.wiff
14	CR039LCS-FS(0)	Laboratory Control Sample	6/27/2018 10:52:49 AM	5-0371.dam	06252018_5-371.wiff
15	J6259-FS1(0)	WGNA-052918-FRB-3124	6/27/2018 11:01:45 AM	5-0371.dam	06252018_5-371.wiff
16	J6261-FS1(0)	WGNA-052918-FRB-3493	6/27/2018 11:10:41 AM	5-0371.dam	06252018_5-371.wiff
17	J6263-FS1(0)	WGNA-052918-FRB-3882	6/27/2018 11:19:39 AM	5-0371.dam	06252018_5-371.wiff
18	J6265-FS1(0)	WGNA-052918-FRB-3978	6/27/2018 11:28:34 AM	5-0371.dam	06252018_5-371.wiff
19	J6267-FS1(0)	NAWC-052918-FRB-161	6/27/2018 11:37:30 AM	5-0371.dam	06252018_5-371.wiff
20	J6271-FS1(0)	WGNA-053018-FRB-3876	6/27/2018 11:46:27 AM	5-0371.dam	06252018_5-371.wiff
21	JX71 CCV	CCV	6/27/2018 11:55:23 AM	5-0371.dam	06252018_5-371.wiff
12	MeOH		6/27/2018 12:04:19 PM	5-0371.dam	06252018_5-371.wiff
22	J6274-FS1(0)	NAWC-053018-FRB-231	6/27/2018 12:13:16 PM	5-0371.dam	06252018_5-371.wiff
23	J6276-FS1(0)	WGNA-053018-FRB-3933	6/27/2018 12:22:12 PM	5-0371.dam	06252018_5-371.wiff
24	J6278-FS1(0)	NAWC-053018-FRB-164	6/27/2018 12:31:07 PM	5-0371.dam	06252018_5-371.wiff
25	J6280-FS1(0)	NAWC-053018-FRB-292	6/27/2018 12:40:02 PM	5-0371.dam	06252018_5-371.wiff
26	J6282-FS1(0)	NAWC-053018-FRB-	6/27/2018 12:48:57	5-0371.dam	06252018_5-371.wiff

BATTELLE

Sequence Report

Created with Analyst Reporter
Printed: 28/06/2018 11:29:12 AM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
		271	PM		
27	J6284-FS1(0)	NAWC-053018-FRB-270	6/27/2018 12:57:53 PM	5-0371.dam	06252018_5-371.wiff
28	J6286-FS1(0)	NAWC-053018-FRB-196	6/27/2018 1:06:48 PM	5-0371.dam	06252018_5-371.wiff
29	J6288-FS1(0)	NAWC-053018-FRB-172	6/27/2018 1:15:44 PM	5-0371.dam	06252018_5-371.wiff
30	JX72 CCV	CCV	6/27/2018 1:24:40 PM	5-0371.dam	06252018_5-371.wiff

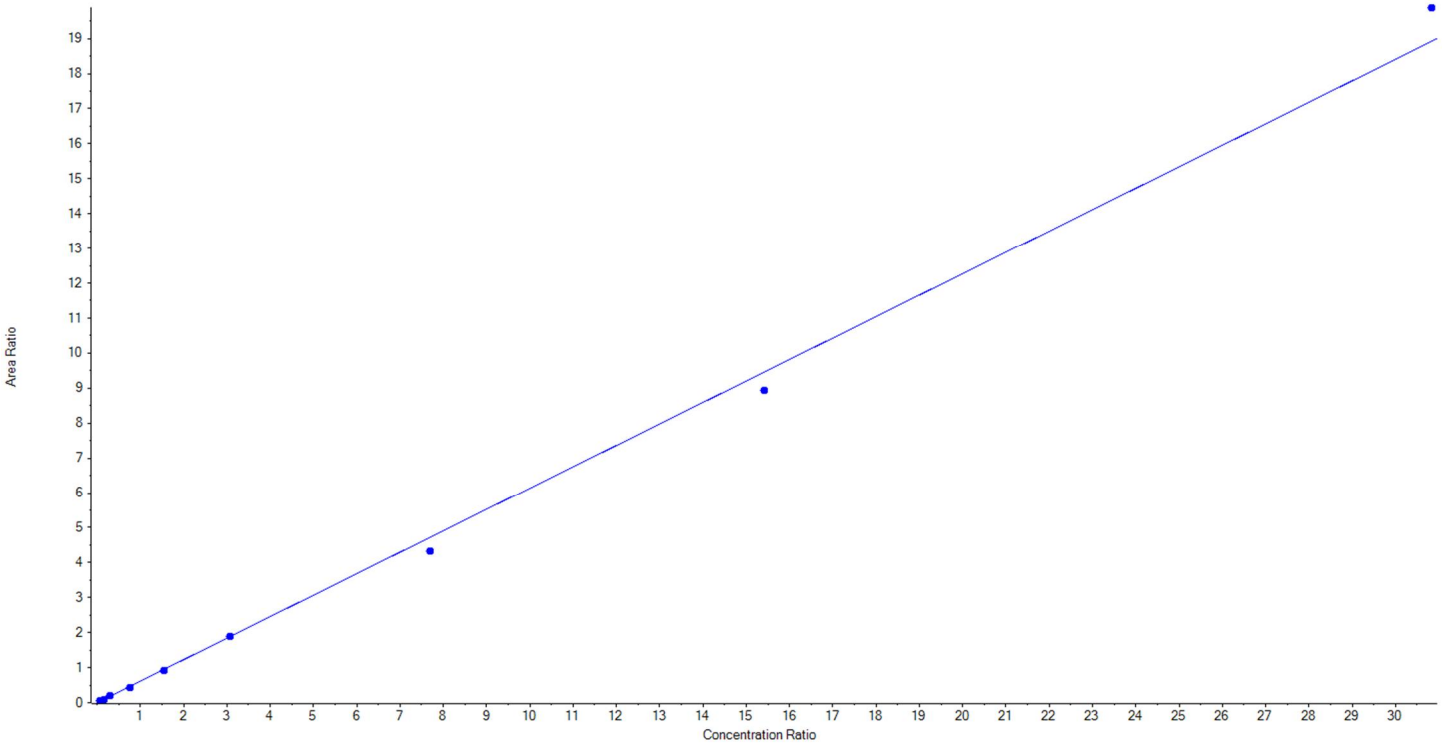
Created with Analyst Reporter
Printed: 28/06/2018 11:29:38 AM

Calibration Summary Report

Analyte Name	PFBS_1	**Data File**	06252018_5-371.wiff
MRM Transition	298.9 / 80.0	**Result Table**	18-0391
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.61363 x + -0.00126 (r = 0.99834) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	22.15	23.830433	107.6
3	JX68	L2	True	44.30	46.278541	104.5
4	JX69	L3	True	88.60	93.683891	105.7
5	JX70	L4	True	221.50	206.327632	93.2
6	JX71	L5	True	443.00	432.516100	97.6
7	JX72	L6	True	885.00	888.747710	100.4
8	JX73	L7	True	2212.50	2024.674722	91.5
9	JX74	L8	True	4425.00	4178.992960	94.4
10	JX75	L9	True	8850.00	9296.998012	105.1



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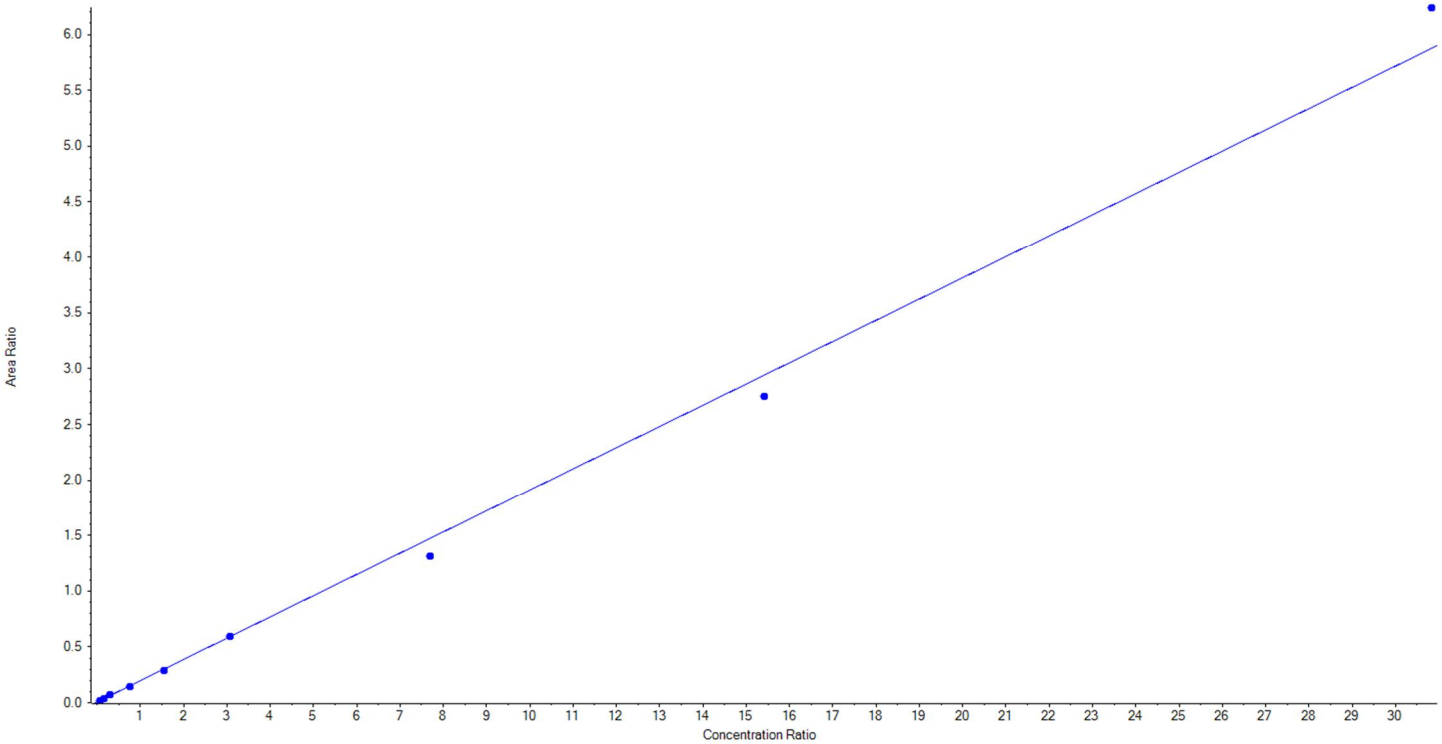
Calibration Summary Report

Analyte Name	PFBS_2	**Data File**	06252018_5-371.wiff
MRM Transition	298.9 / 99.0	**Result Table**	18-0391
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.19036 x + 0.00658 (r = 0.99747) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	22.15	22.983577	103.8
3	JX68	L2	True	44.30	49.356949	111.4
4	JX69	L3	True	88.60	93.887974	106.0
5	JX70	L4	True	221.50	205.818634	92.9
6	JX71	L5	True	443.00	429.643049	97.0
7	JX72	L6	True	885.00	889.170002	100.5
8	JX73	L7	True	2212.50	1962.210653	88.7
9	JX74	L8	True	4425.00	4142.359203	93.6
10	JX75	L9	True	8850.00	9396.619960	106.2



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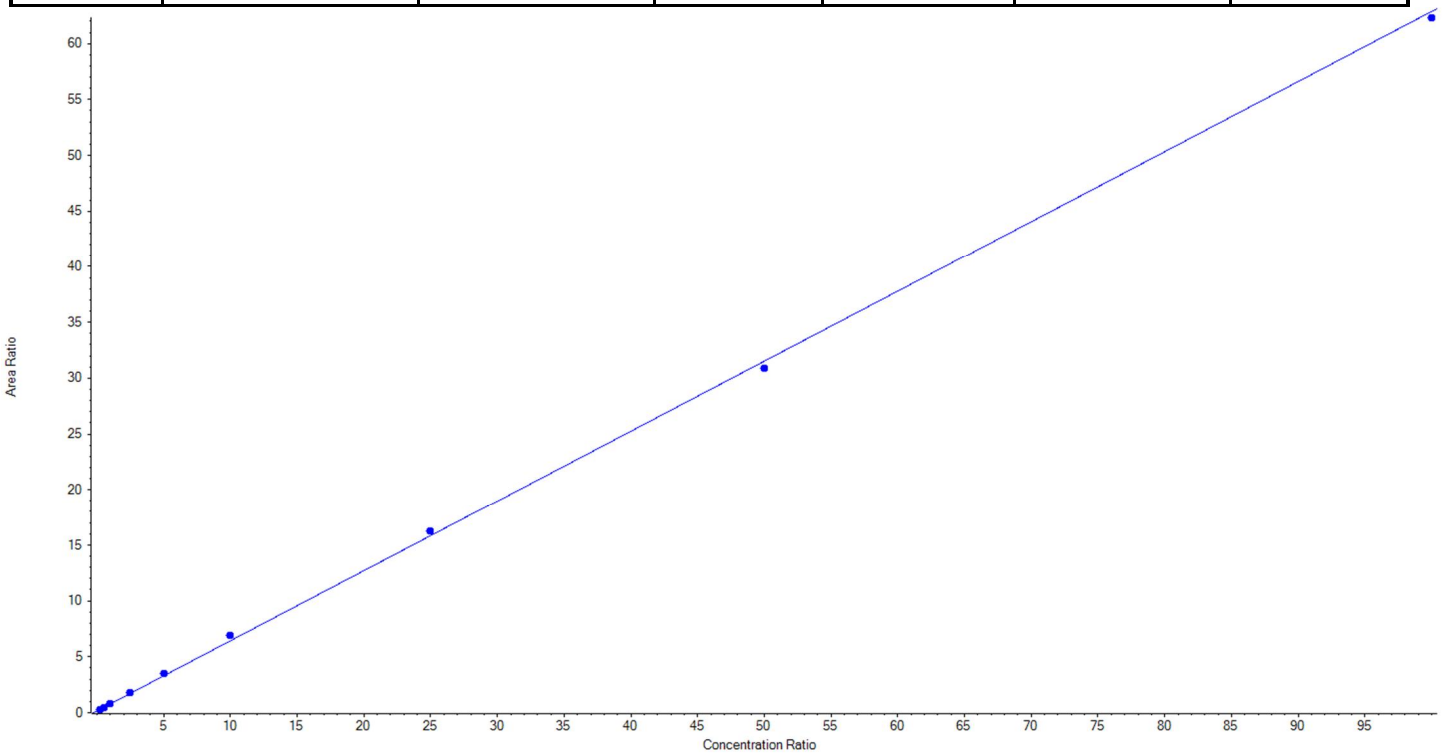
Calibration Summary Report

Analyte Name	PFHxA_1	**Data File**	06252018_5-371.wiff
MRM Transition	313.0 / 269.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.62713 x + 0.16053 (r = 0.99957) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	18.791994	75.2
3	JX68	L2	True	50.00	51.402415	102.8
4	JX69	L3	True	100.00	104.015969	104.0
5	JX70	L4	True	250.00	256.894451	102.8
6	JX71	L5	True	500.00	536.593763	107.3
7	JX72	L6	True	1000.00	1083.560155	108.4
8	JX73	L7	True	2500.00	2559.637674	102.4
9	JX74	L8	True	5000.00	4905.213315	98.1
10	JX75	L9	True	10000.00	9908.890264	99.1



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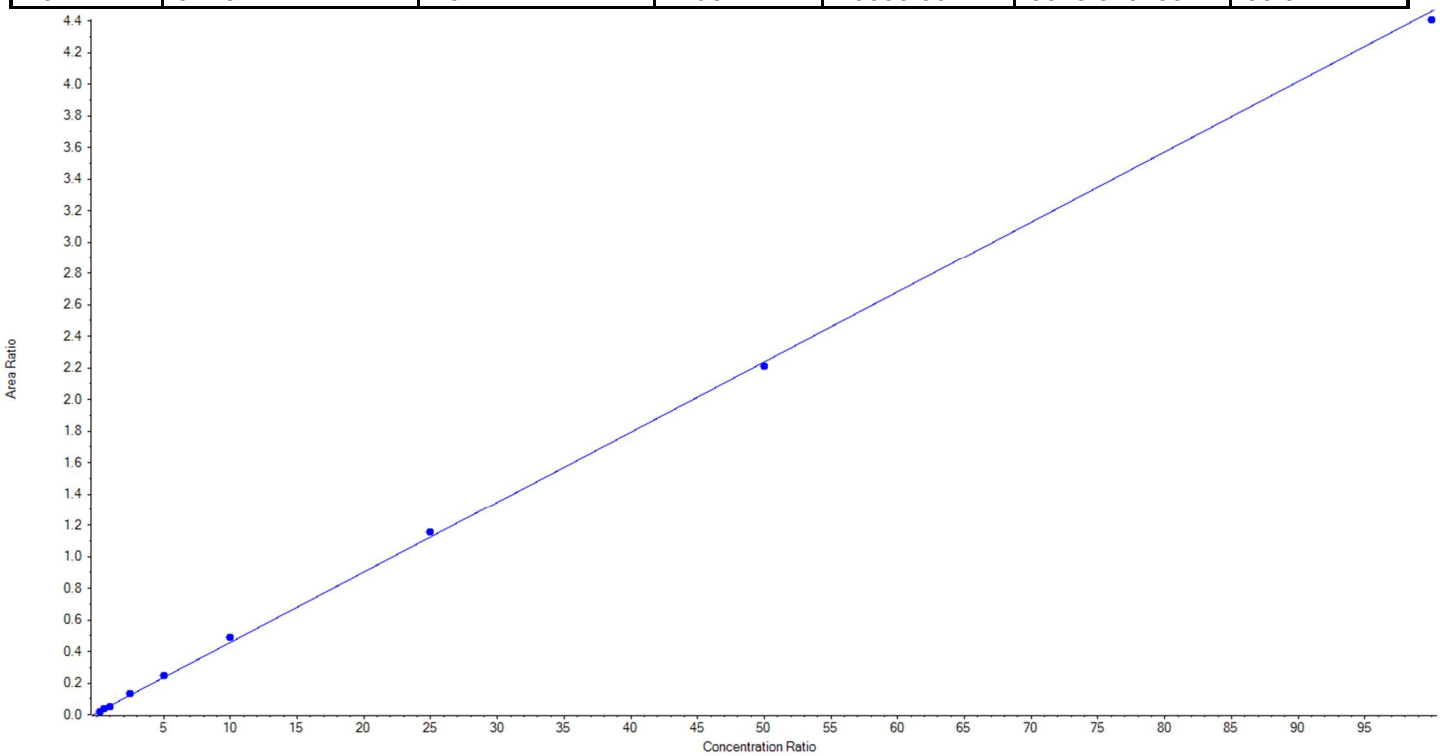
Calibration Summary Report

Analyte Name	PFHxA_2	**Data File**	06252018_5-371.wiff
MRM Transition	313.0 / 119.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.04450 x + 0.01264 (r = 0.99956) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	20.296701	81.2
3	JX68	L2	True	50.00	53.760551	107.5
4	JX69	L3	True	100.00	88.961255	89.0
5	JX70	L4	True	250.00	271.044383	108.4
6	JX71	L5	True	500.00	529.040331	105.8
7	JX72	L6	True	1000.00	1077.865222	107.8
8	JX73	L7	True	2500.00	2570.917958	102.8
9	JX74	L8	True	5000.00	4935.064490	98.7
10	JX75	L9	True	10000.00	9878.049109	98.8



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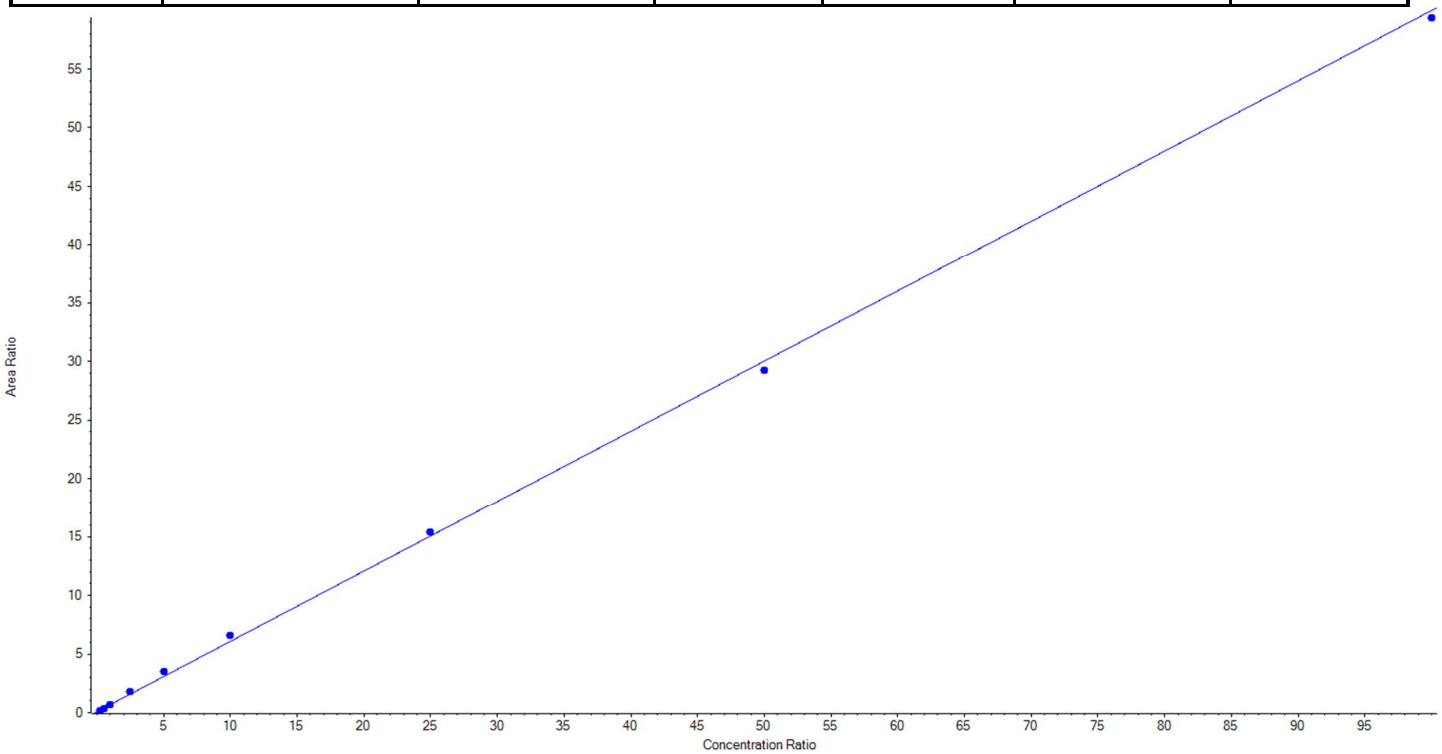
Calibration Summary Report

Analyte Name	PFHpA_1	**Data File**	06252018_5-371.wiff
MRM Transition	363.0 / 319.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.59900 x + 0.08720 (r = 0.99924) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	18.302340	73.2
3	JX68	L2	True	50.00	44.691384	89.4
4	JX69	L3	True	100.00	104.066690	104.1
5	JX70	L4	True	250.00	283.179151	113.3
6	JX71	L5	True	500.00	564.092719	112.8
7	JX72	L6	True	1000.00	1085.640666	108.6
8	JX73	L7	True	2500.00	2557.091682	102.3
9	JX74	L8	True	5000.00	4872.389047	97.5
10	JX75	L9	True	10000.00	9895.546320	99.0



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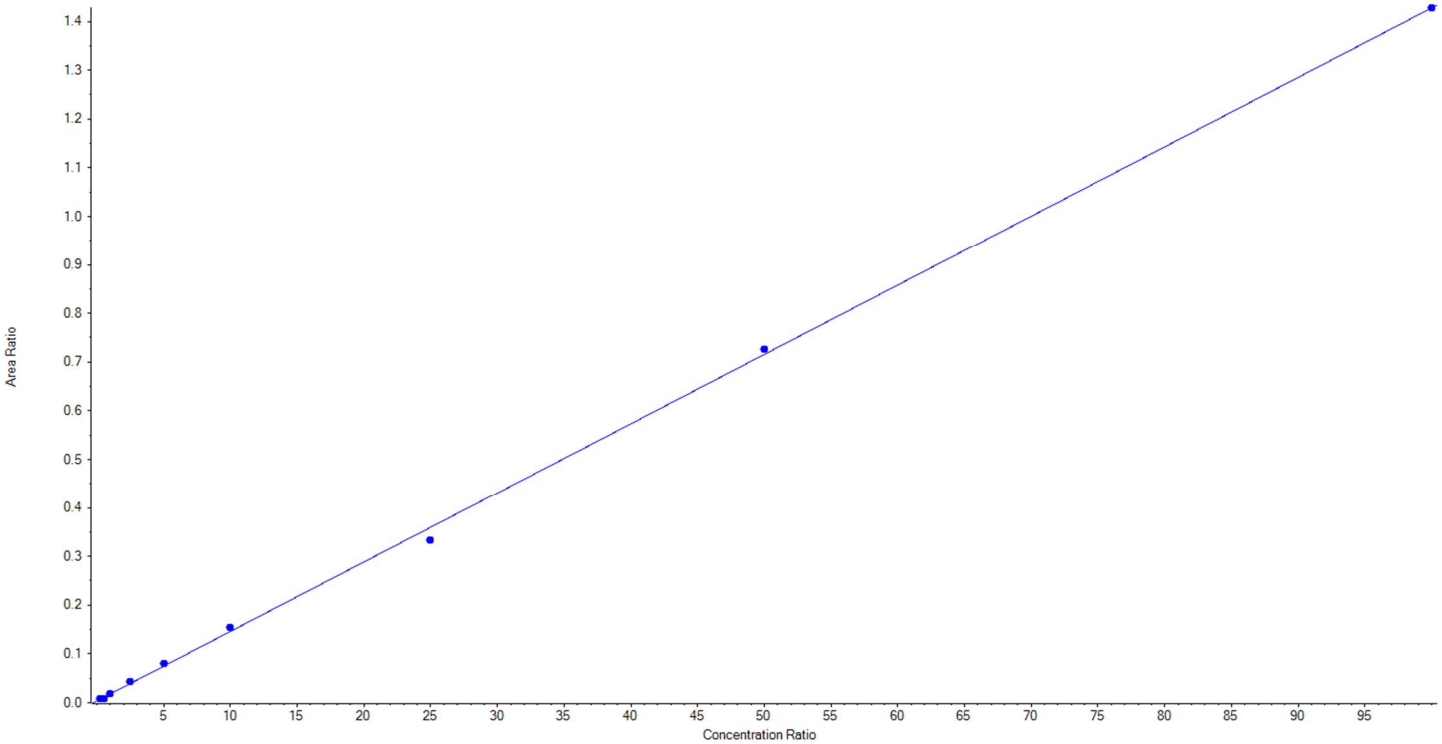
Calibration Summary Report

Analyte Name	PFHpA_2	**Data File**	06252018_5-371.wiff
MRM Transition	363.0 / 169.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.01424 x + 0.00368 (r = 0.99920) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	25.182337	100.7
3	JX68	L2	True	50.00	37.004714	74.0
4	JX69	L3	True	100.00	106.084205	106.1
5	JX70	L4	True	250.00	279.413504	111.8
6	JX71	L5	True	500.00	537.484438	107.5
7	JX72	L6	True	1000.00	1062.086999	106.2
8	JX73	L7	True	2500.00	2307.985347	92.3
9	JX74	L8	True	5000.00	5068.903345	101.4
10	JX75	L9	True	10000.00	10000.855110	100.0



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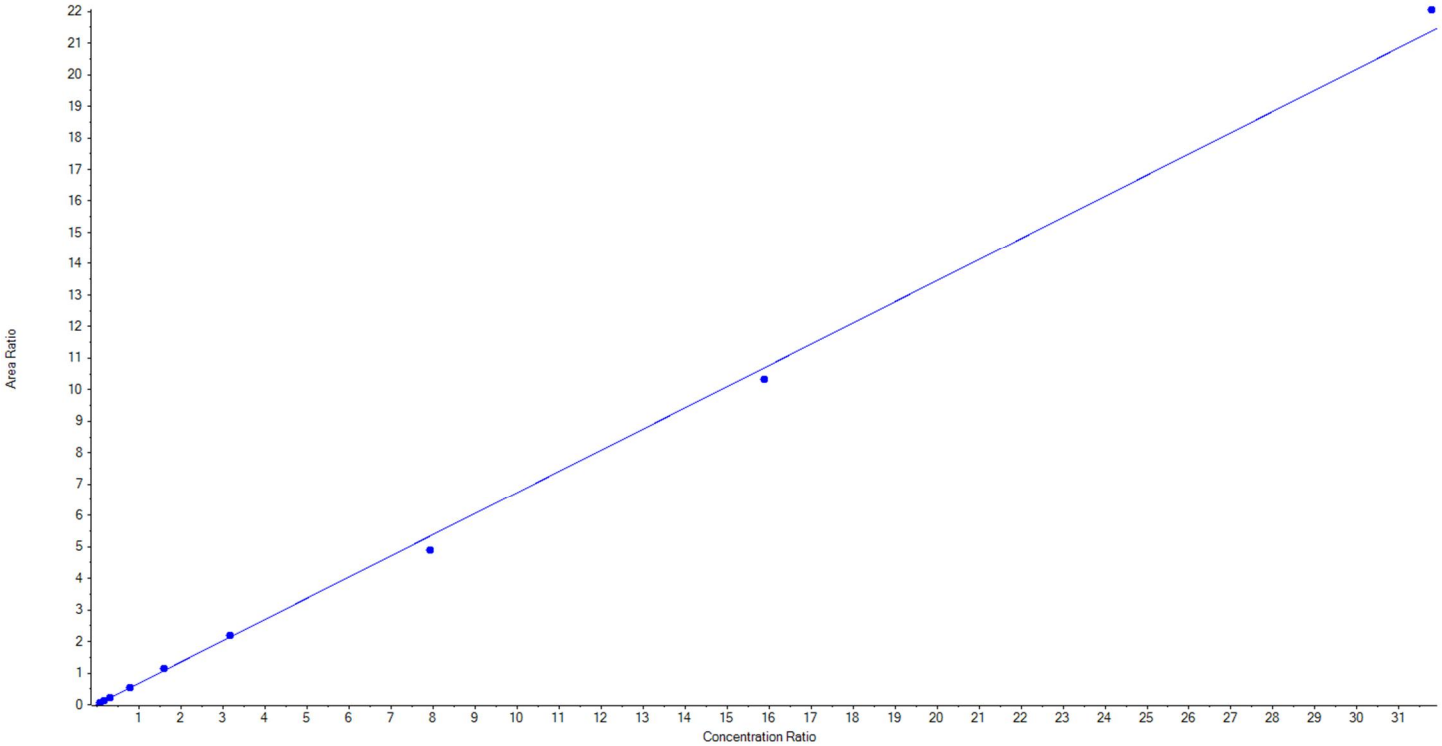
Calibration Summary Report

Analyte Name	PFHxS_1	**Data File**	06252018_5-371.wiff
MRM Transition	399.0 / 80.0	**Result Table**	18-0391
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.67255 x + 0.00557 (r = 0.99899) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	22.80	21.540088	94.5
3	JX68	L2	True	45.60	45.354398	99.5
4	JX69	L3	True	91.20	94.429375	103.5
5	JX70	L4	True	228.00	231.961115	101.7
6	JX71	L5	True	456.00	490.677670	107.6
7	JX72	L6	True	912.00	928.885400	101.9
8	JX73	L7	True	2280.00	2086.096882	91.5
9	JX74	L8	True	4560.00	4408.253001	96.7
10	JX75	L9	True	9120.00	9408.402070	103.2



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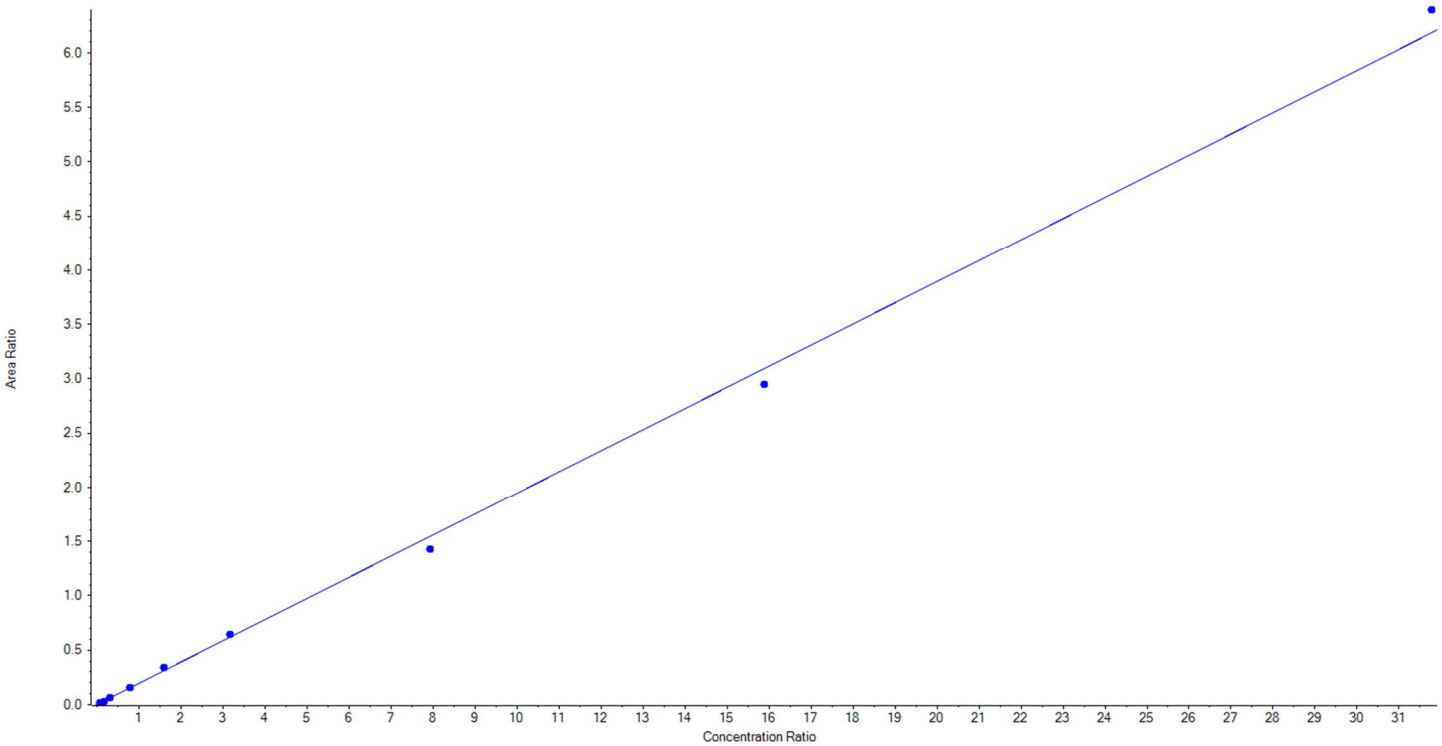
Calibration Summary Report

Analyte Name	PFHxS_2	**Data File**	06252018_5-371.wiff
MRM Transition	399.0 / 99.0	**Result Table**	18-0391
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.19454 x + 0.00249 (r = 0.99879) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	22.80	21.831569	95.8
3	JX68	L2	True	45.60	43.862949	96.2
4	JX69	L3	True	91.20	95.814283	105.1
5	JX70	L4	True	228.00	224.050348	98.3
6	JX71	L5	True	456.00	499.804218	109.6
7	JX72	L6	True	912.00	950.335119	104.2
8	JX73	L7	True	2280.00	2101.773991	92.2
9	JX74	L8	True	4560.00	4346.681282	95.3
10	JX75	L9	True	9120.00	9431.446241	103.4



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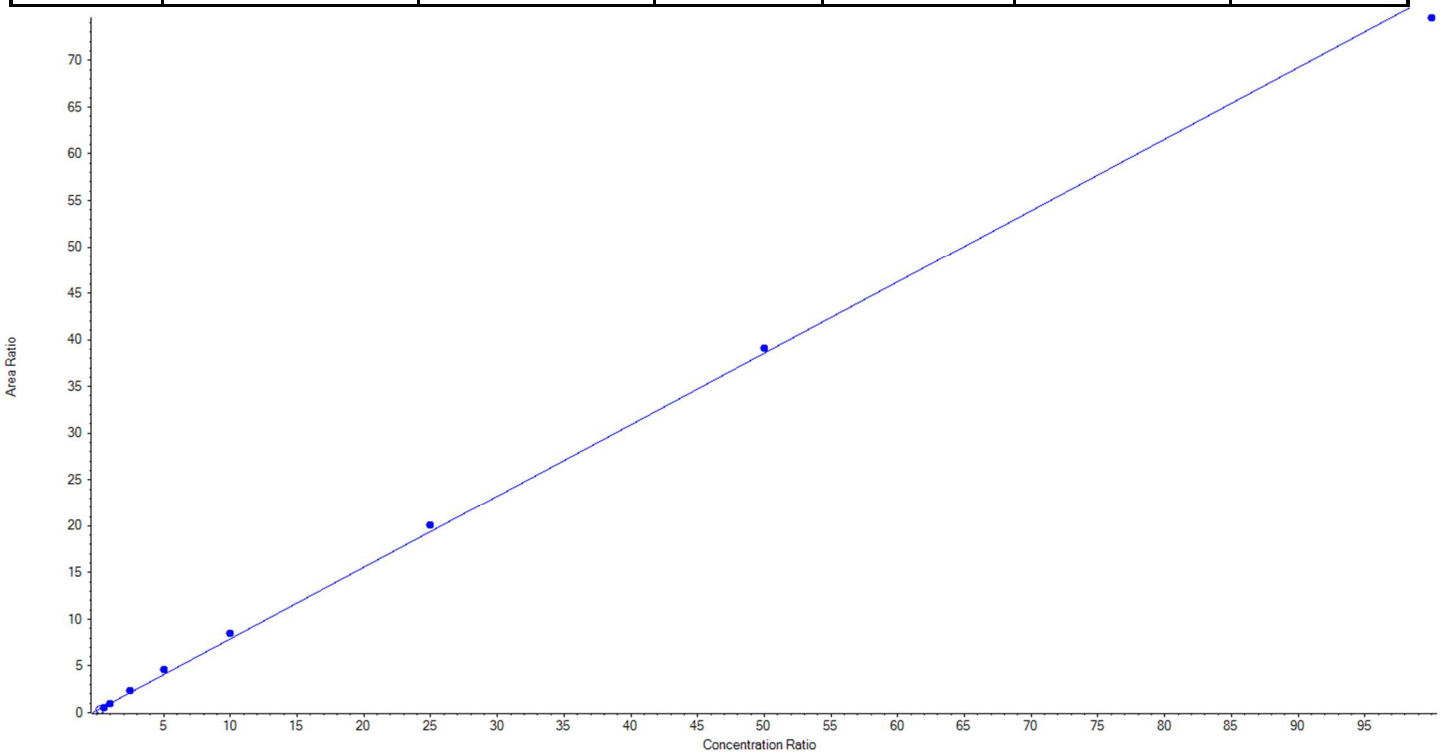
Calibration Summary Report

Analyte Name	PFOA_1	**Data File**	06252018_5-371.wiff
MRM Transition	413.0 / 369.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.76657 x + 0.23682 (r = 0.99897) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	5.415311	21.7
3	JX68	L2	True	50.00	36.683792	73.4
4	JX69	L3	True	100.00	92.235736	92.2
5	JX70	L4	True	250.00	275.902665	110.4
6	JX71	L5	True	500.00	572.330827	114.5
7	JX72	L6	True	1000.00	1079.143229	107.9
8	JX73	L7	True	2500.00	2586.190651	103.5
9	JX74	L8	True	5000.00	5063.236772	101.3
10	JX75	L9	True	10000.00	9694.276329	96.9



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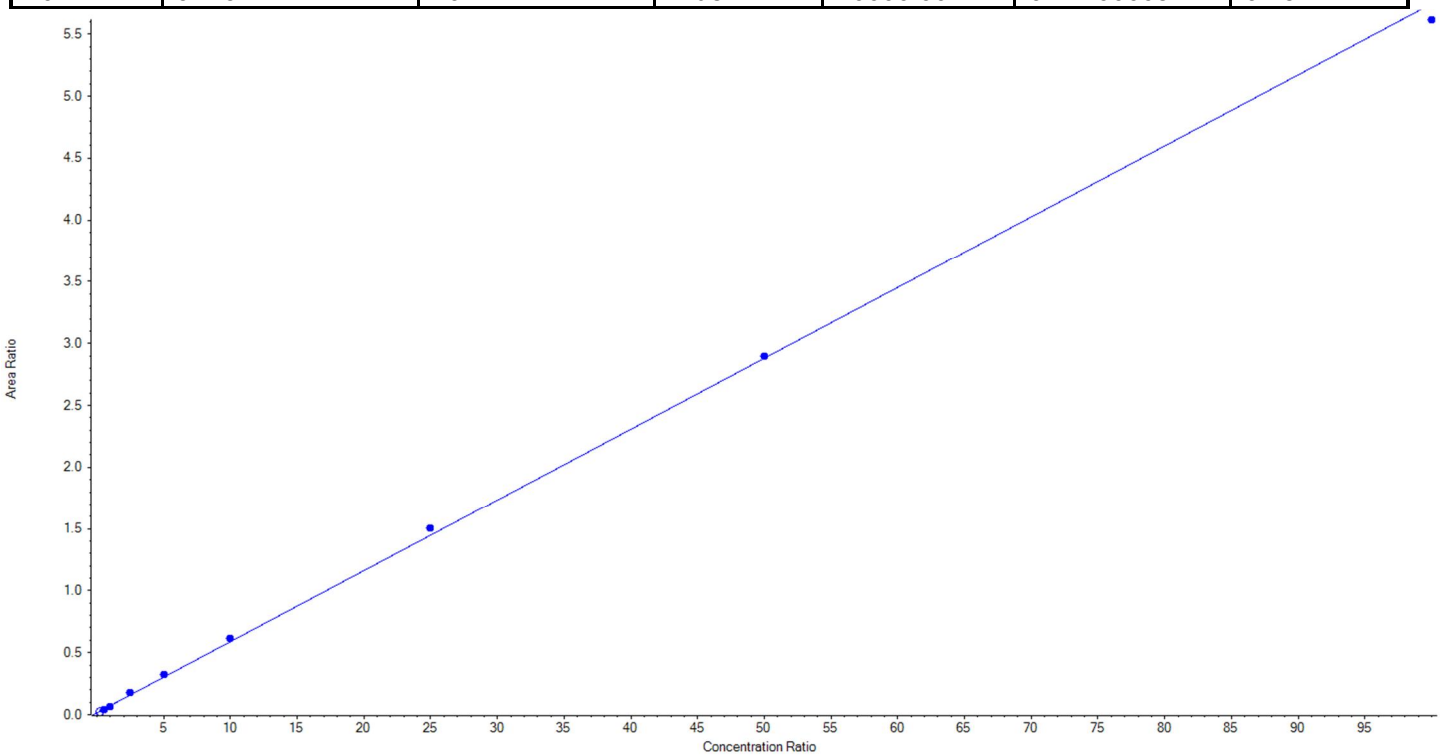
Calibration Summary Report

Analyte Name	PFOA_2	**Data File**	06252018_5-371.wiff
MRM Transition	413.0 / 169.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.05729 x + 0.01572 (r = 0.99941) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	12.318640	49.3
3	JX68	L2	True	50.00	43.335566	86.7
4	JX69	L3	True	100.00	86.590381	86.6
5	JX70	L4	True	250.00	279.024584	111.6
6	JX71	L5	True	500.00	542.178268	108.4
7	JX72	L6	True	1000.00	1042.123910	104.2
8	JX73	L7	True	2500.00	2604.616479	104.2
9	JX74	L8	True	5000.00	5027.464128	100.6
10	JX75	L9	True	10000.00	9774.666684	97.8



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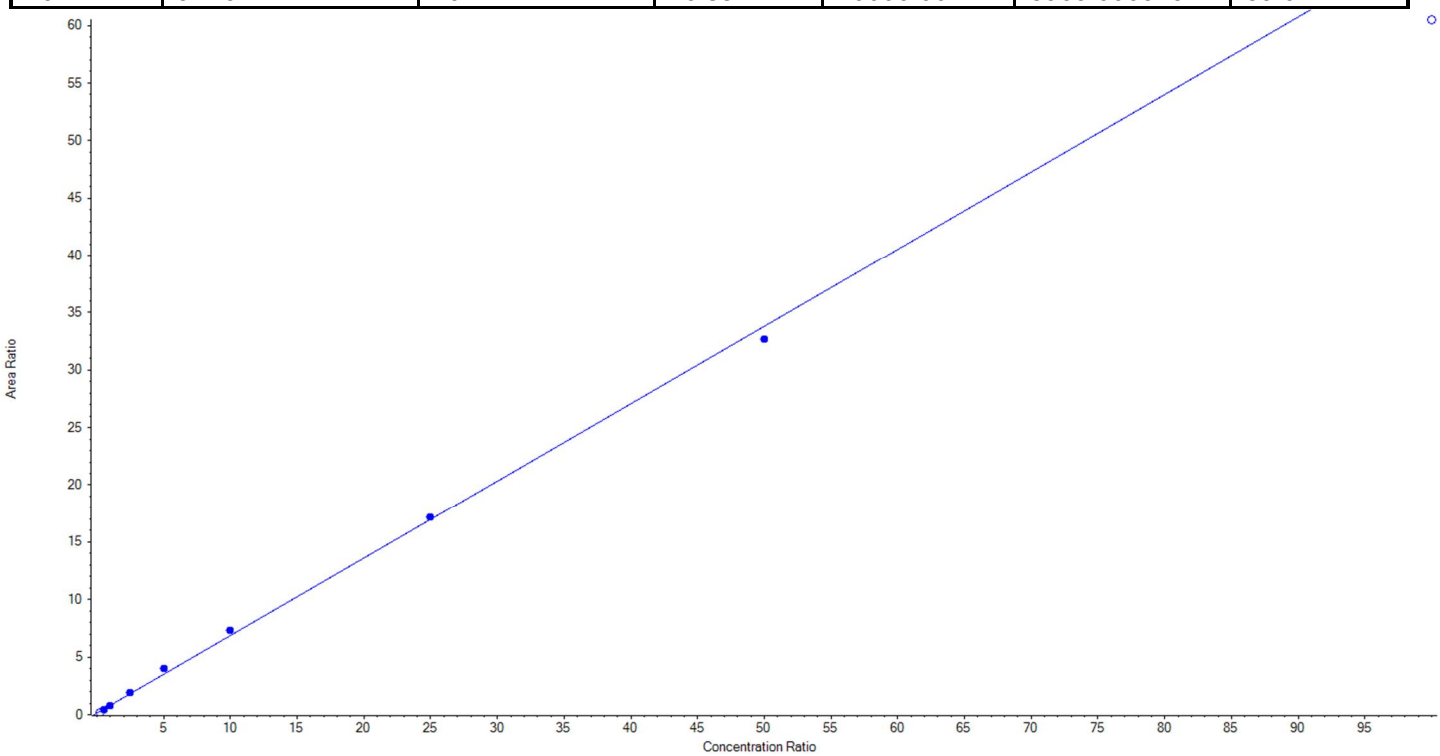
Calibration Summary Report

Analyte Name	PFNA_1	**Data File**	06252018_5-371.wiff
MRM Transition	463.0 / 419.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.67314 x + 0.14207 (r = 0.99841) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	7.876482	31.5
3	JX68	L2	True	50.00	38.471445	76.9
4	JX69	L3	True	100.00	96.355173	96.4
5	JX70	L4	True	250.00	268.580288	107.4
6	JX71	L5	True	500.00	575.970800	115.2
7	JX72	L6	True	1000.00	1064.317609	106.4
8	JX73	L7	True	2500.00	2525.890341	101.0
9	JX74	L8	True	5000.00	4830.414344	96.6
10	JX75	L9	False	10000.00	8963.600323	89.6



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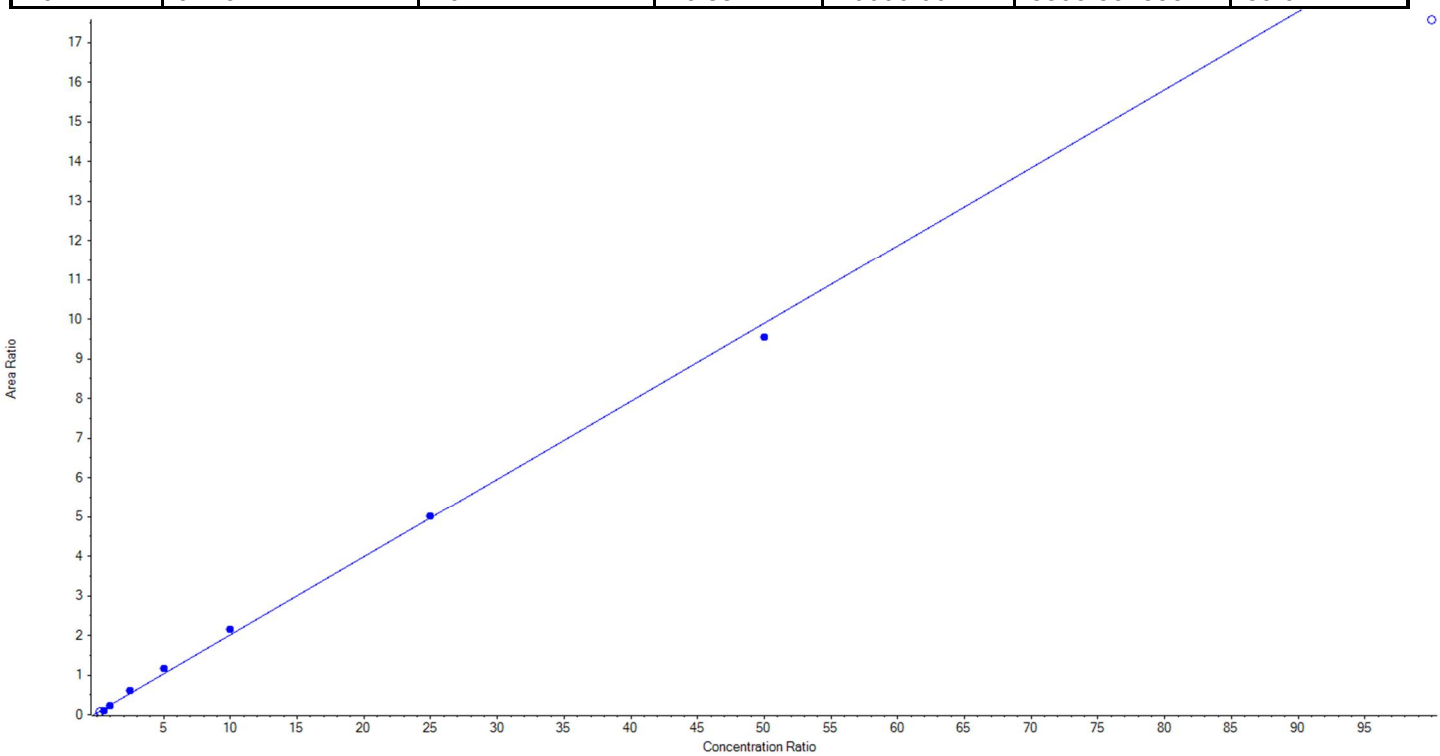
Calibration Summary Report

Analyte Name	PFNA_2	**Data File**	06252018_5-371.wiff
MRM Transition	463.0 / 219.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.19709 x + 0.04473 (r = 0.99821) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	17.483575	69.9
3	JX68	L2	True	50.00	35.058175	70.1
4	JX69	L3	True	100.00	99.127432	99.1
5	JX70	L4	True	250.00	282.168603	112.9
6	JX71	L5	True	500.00	566.768331	113.4
7	JX72	L6	True	1000.00	1073.450506	107.4
8	JX73	L7	True	2500.00	2516.076067	100.6
9	JX74	L8	True	5000.00	4827.350887	96.6
10	JX75	L9	False	10000.00	8895.837853	89.0



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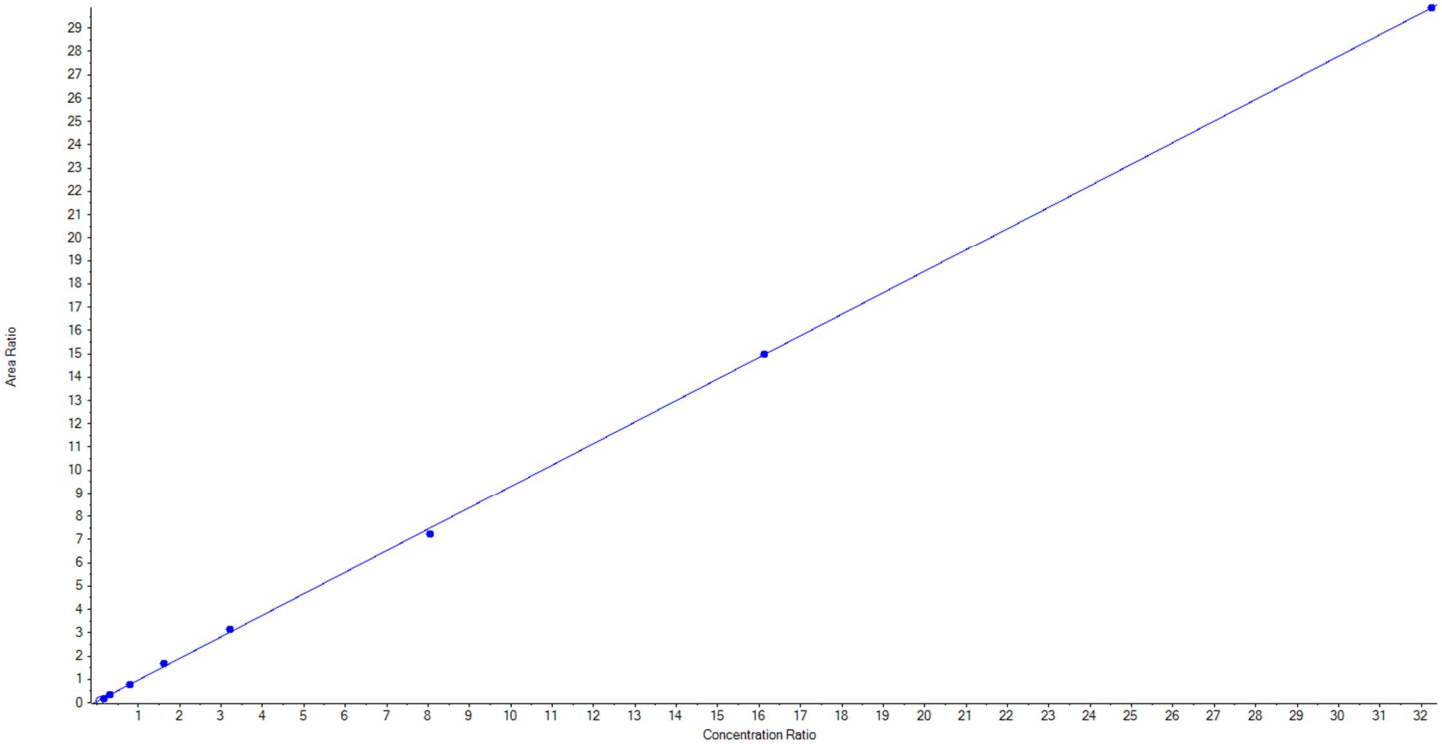
Calibration Summary Report

Analyte Name	PFOS_1	**Data File**	06252018_5-371.wiff
MRM Transition	499.0 / 80.0	**Result Table**	18-0391
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.92479 x + 0.04857 (r = 0.99974) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	23.15	14.967381	64.7
3	JX68	L2	True	46.30	41.416707	89.5
4	JX69	L3	True	92.60	94.155588	101.7
5	JX70	L4	True	231.50	229.522123	99.2
6	JX71	L5	True	463.00	504.911983	109.1
7	JX72	L6	True	925.60	962.388374	104.0
8	JX73	L7	True	2314.00	2234.023744	96.5
9	JX74	L8	True	4628.00	4635.388250	100.2
10	JX75	L9	True	9256.00	9255.193233	100.0



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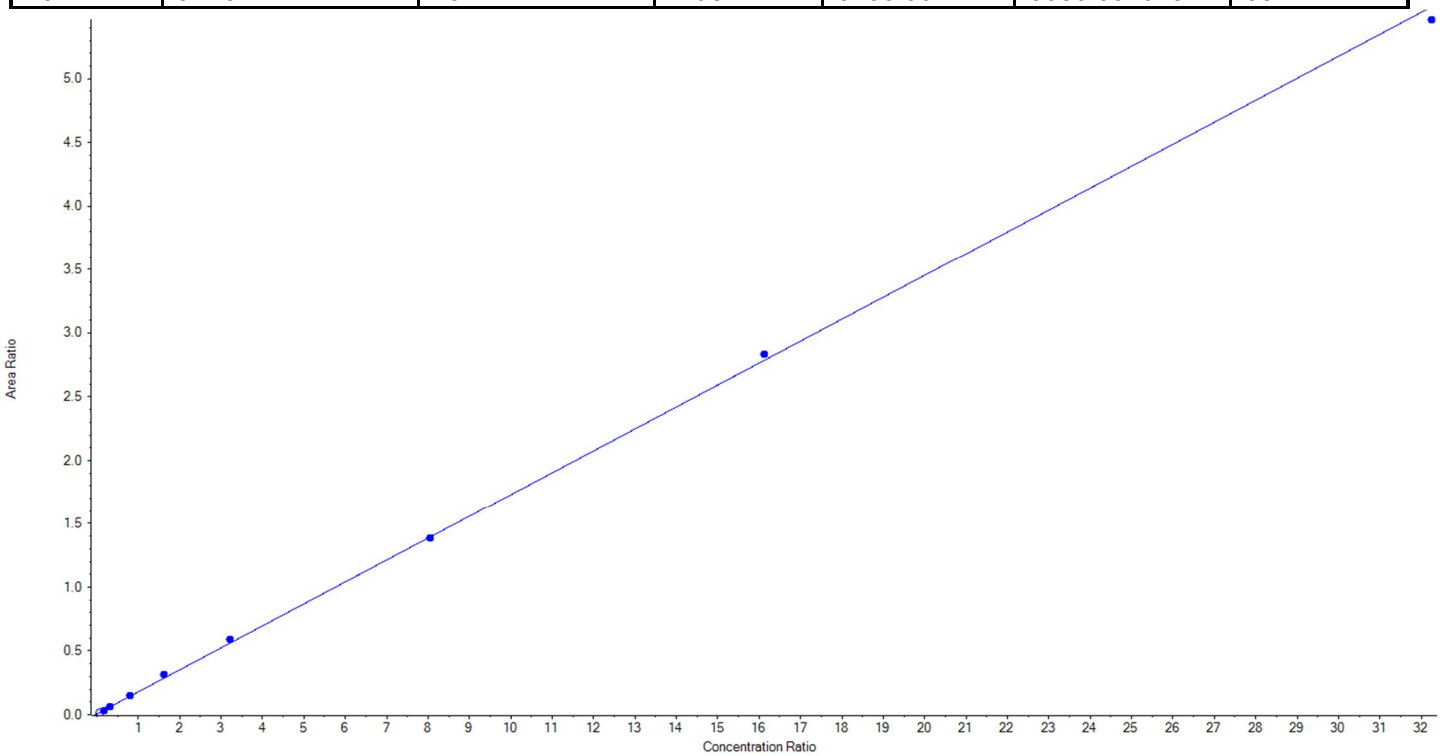
Calibration Summary Report

Analyte Name	PFOS_2	**Data File**	06252018_5-371.wiff
MRM Transition	499.0 / 99.0	**Result Table**	18-0391
Internal Standard	13C4-PFOS	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.17232 x + 0.00703 (r = 0.99957) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	23.15	17.551763	75.8
3	JX68	L2	True	46.30	36.618609	79.1
4	JX69	L3	True	92.60	94.778219	102.4
5	JX70	L4	True	231.50	241.187429	104.2
6	JX71	L5	True	463.00	506.365979	109.4
7	JX72	L6	True	925.60	976.906219	105.5
8	JX73	L7	True	2314.00	2301.363562	99.5
9	JX74	L8	True	4628.00	4713.142959	101.8
10	JX75	L9	True	9256.00	9086.637025	98.2



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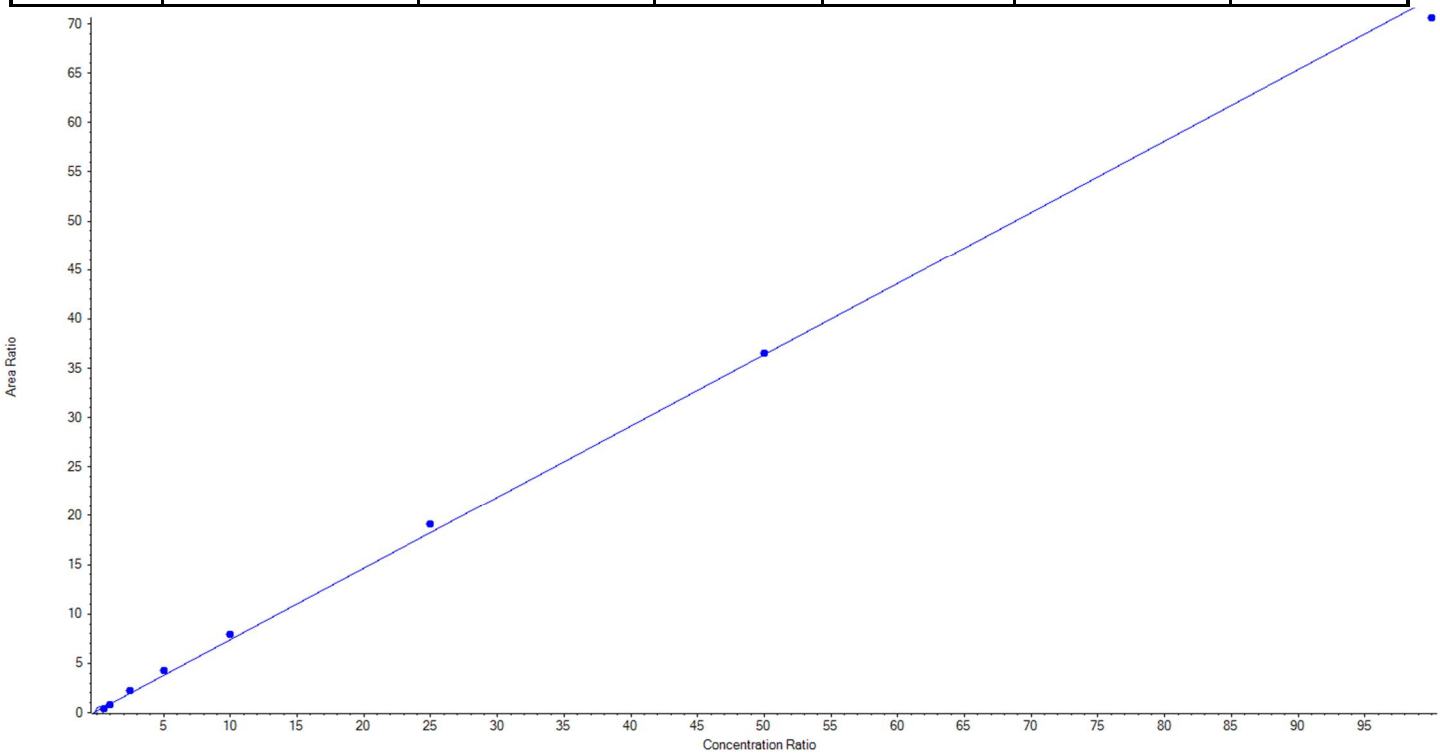
Calibration Summary Report

Analyte Name	PFDA_1	**Data File**	06252018_5-371.wiff
MRM Transition	513.0 / 469.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.72444 x + 0.16011 (r = 0.99902) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	4.293986	17.2
3	JX68	L2	True	50.00	38.400405	76.8
4	JX69	L3	True	100.00	87.838796	87.8
5	JX70	L4	True	250.00	283.367571	113.4
6	JX71	L5	True	500.00	562.746141	112.6
7	JX72	L6	True	1000.00	1073.347869	107.3
8	JX73	L7	True	2500.00	2614.798969	104.6
9	JX74	L8	True	5000.00	5014.238853	100.3
10	JX75	L9	True	10000.00	9725.261395	97.3



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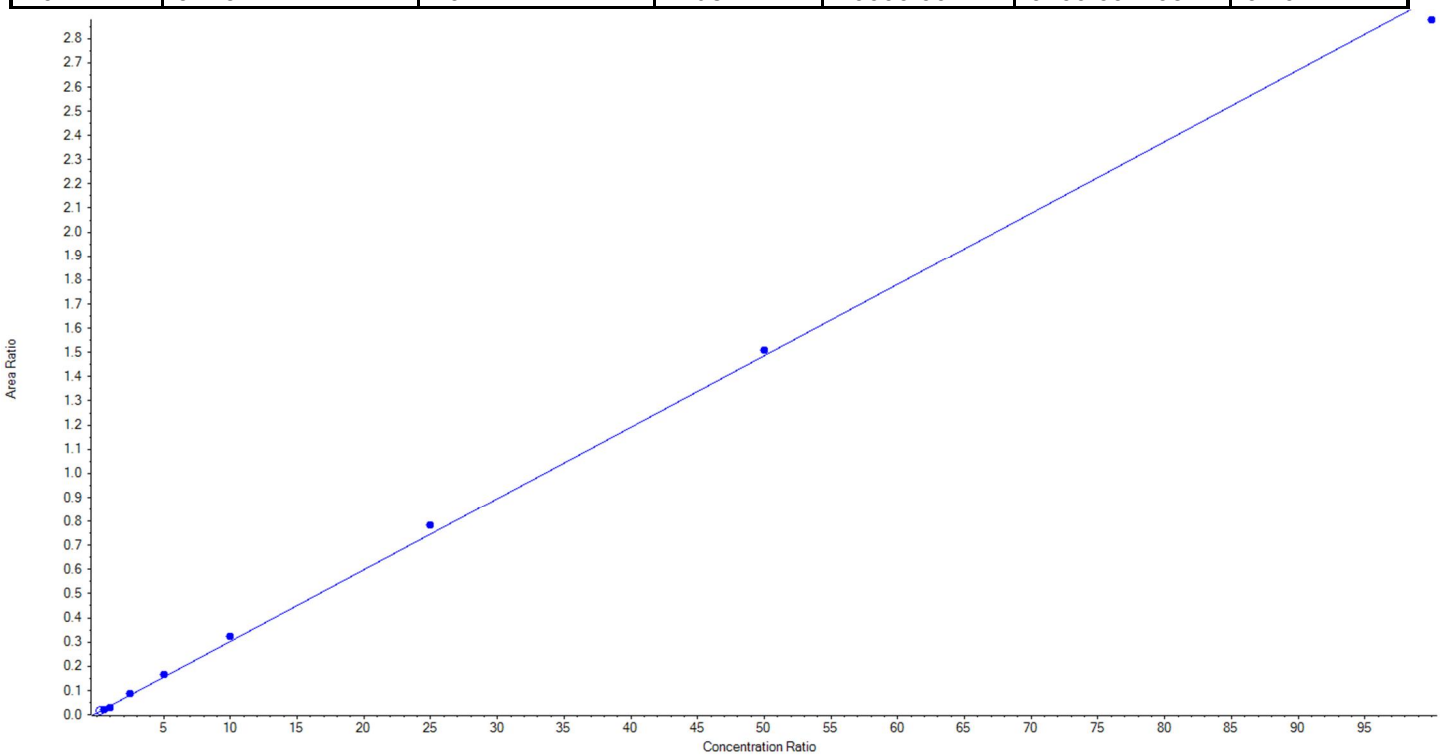
Calibration Summary Report

Analyte Name	PFDA_2	**Data File**	06252018_5-371.wiff
MRM Transition	513.0 / 219.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.02959 x + 0.00688 (r = 0.99915) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	27.987541	112.0
3	JX68	L2	True	50.00	48.305605	96.6
4	JX69	L3	True	100.00	78.774590	78.8
5	JX70	L4	True	250.00	266.338265	106.5
6	JX71	L5	True	500.00	536.324707	107.3
7	JX72	L6	True	1000.00	1073.774687	107.4
8	JX73	L7	True	2500.00	2625.689392	105.0
9	JX74	L8	True	5000.00	5070.098049	101.4
10	JX75	L9	True	10000.00	9700.694705	97.0



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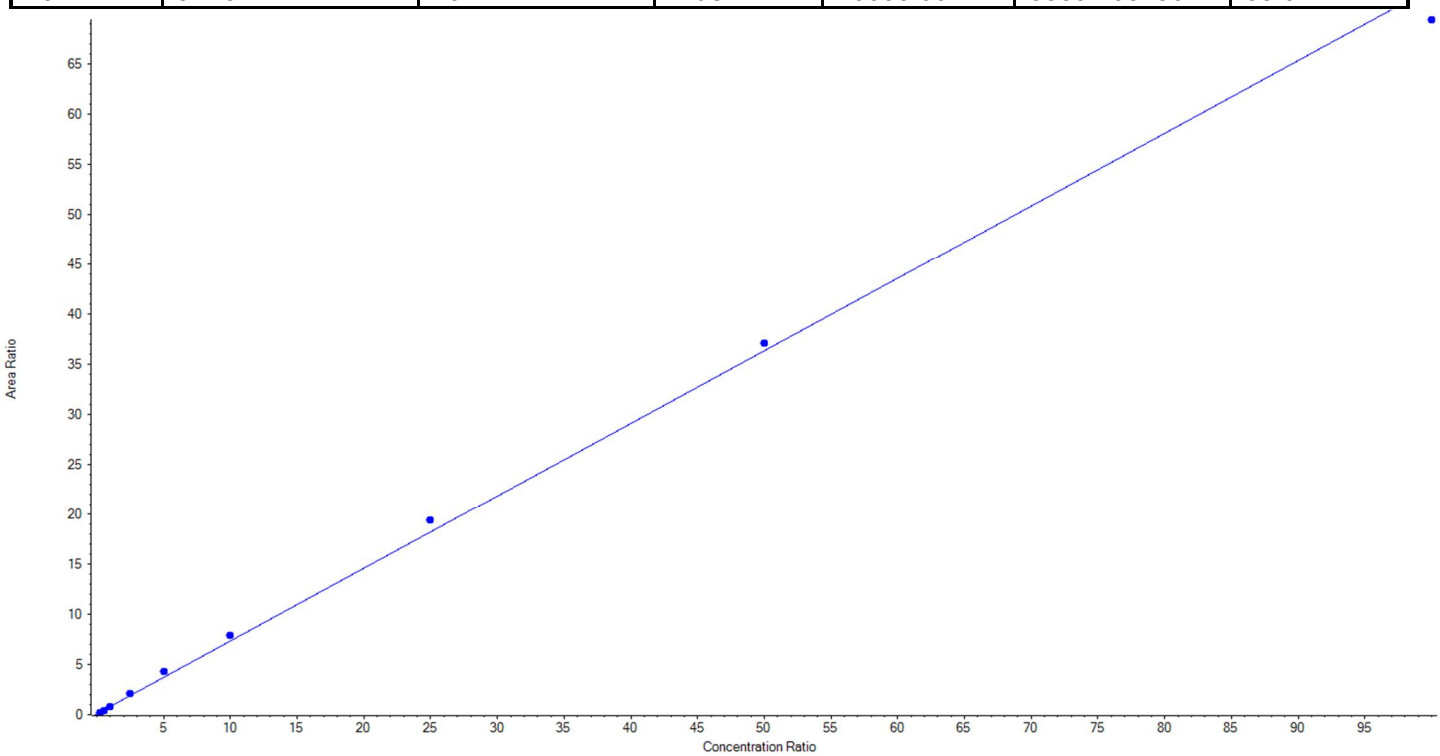
Calibration Summary Report

Analyte Name	PFUnA_1	**Data File**	06252018_5-371.wiff
MRM Transition	563.0 / 519.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.72537 x + 0.09471 (r = 0.99844) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	20.073088	80.3
3	JX68	L2	True	50.00	42.388703	84.8
4	JX69	L3	True	100.00	95.029236	95.0
5	JX70	L4	True	250.00	279.090767	111.6
6	JX71	L5	True	500.00	579.829398	116.0
7	JX72	L6	True	1000.00	1079.142455	107.9
8	JX73	L7	True	2500.00	2669.633957	106.8
9	JX74	L8	True	5000.00	5100.109139	102.0
10	JX75	L9	True	10000.00	9559.703256	95.6



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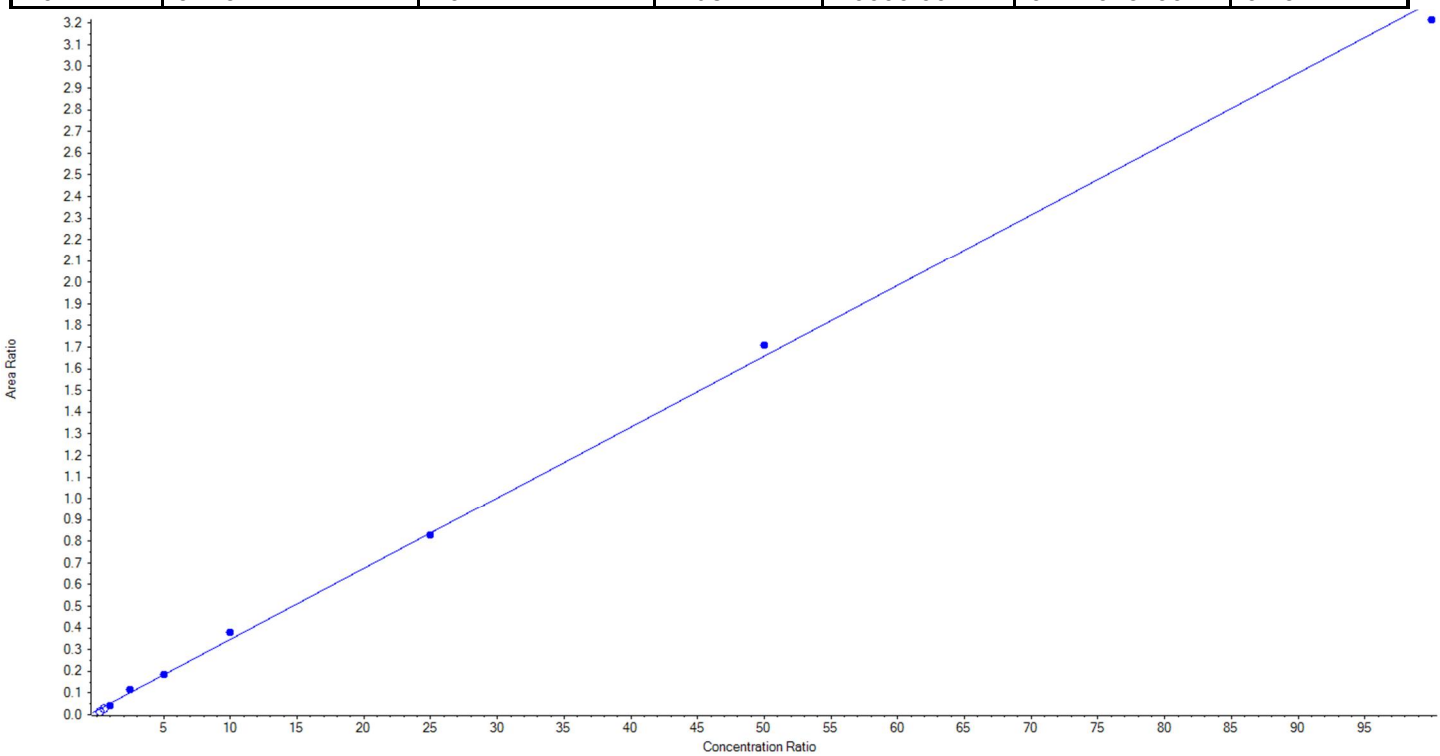
Calibration Summary Report

Analyte Name	PFUnA_2	**Data File**	06252018_5-371.wiff
MRM Transition	563.0 / 269.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.03278 x + 0.01985 (r = 0.99876) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	< 0	N/A
3	JX68	L2	False	50.00	25.569843	51.1
4	JX69	L3	True	100.00	70.257455	70.3
5	JX70	L4	True	250.00	299.570771	119.8
6	JX71	L5	True	500.00	500.697313	100.1
7	JX72	L6	True	1000.00	1103.433343	110.3
8	JX73	L7	True	2500.00	2469.487594	98.8
9	JX74	L8	True	5000.00	5158.640024	103.2
10	JX75	L9	True	10000.00	9747.913499	97.5



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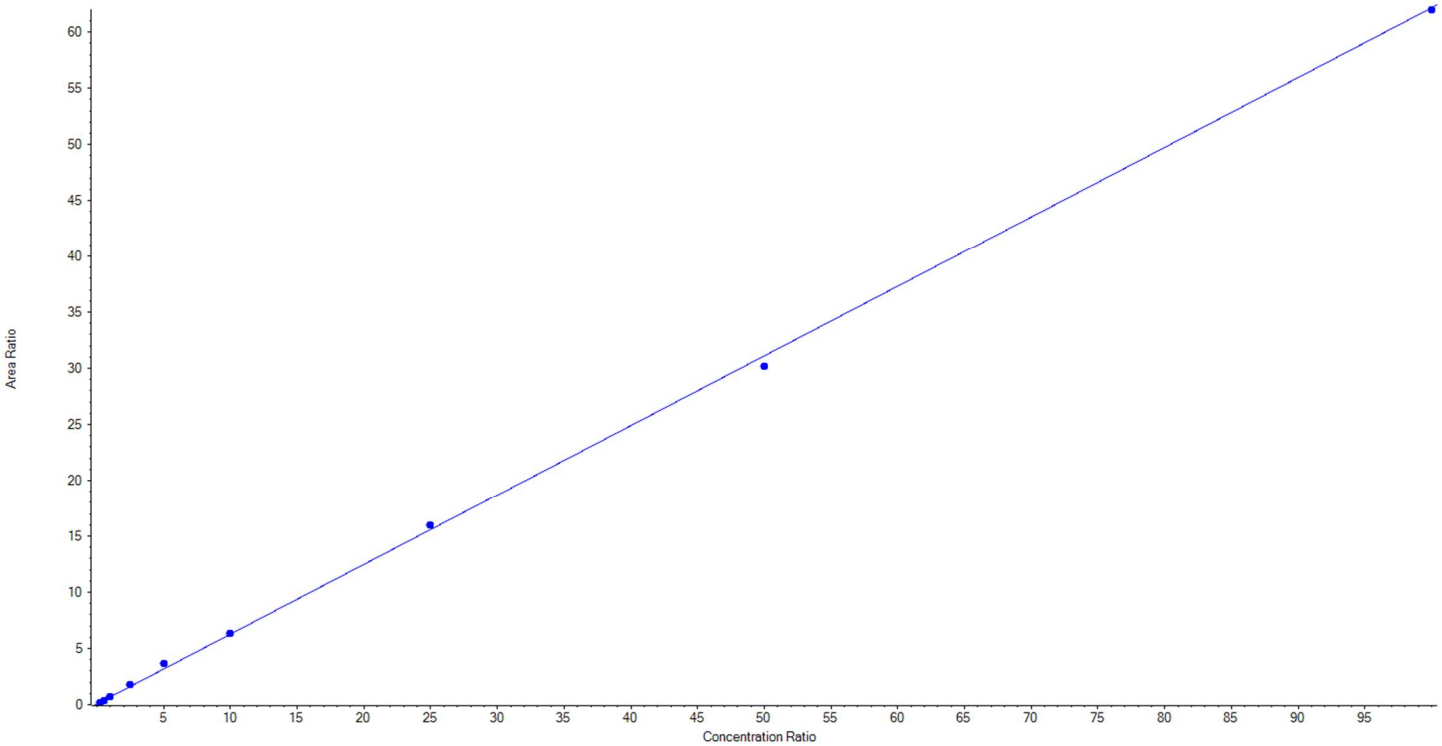
Calibration Summary Report

Analyte Name	PFDoA_1	**Data File**	06252018_5-371.wiff
MRM Transition	613.0 / 569.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.62092 x + 0.06665 (r = 0.99942) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	18.731070	74.9
3	JX68	L2	True	50.00	47.819194	95.6
4	JX69	L3	True	100.00	102.981838	103.0
5	JX70	L4	True	250.00	277.158464	110.9
6	JX71	L5	True	500.00	573.374778	114.7
7	JX72	L6	True	1000.00	1016.155480	101.6
8	JX73	L7	True	2500.00	2561.606452	102.5
9	JX74	L8	True	5000.00	4856.561924	97.1
10	JX75	L9	True	10000.00	9970.610800	99.7



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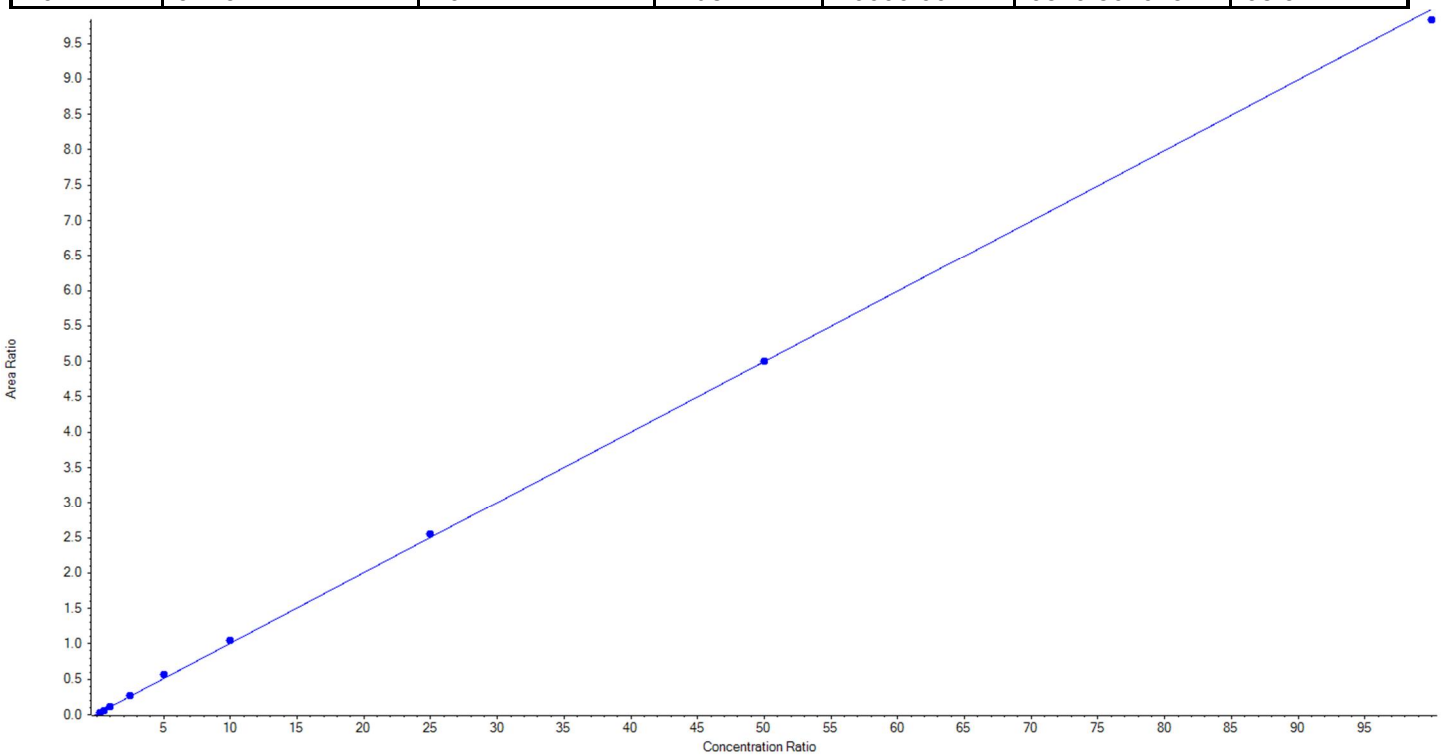
Calibration Summary Report

Analyte Name	PFDoA_2	**Data File**	06252018_5-371.wiff
MRM Transition	613.0 / 319.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.09973 x + 0.01082 (r = 0.99967) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	20.603828	82.4
3	JX68	L2	True	50.00	49.166918	98.3
4	JX69	L3	True	100.00	98.860597	98.9
5	JX70	L4	True	250.00	262.630095	105.1
6	JX71	L5	True	500.00	555.711859	111.1
7	JX72	L6	True	1000.00	1035.902153	103.6
8	JX73	L7	True	2500.00	2553.060598	102.1
9	JX74	L8	True	5000.00	4999.256910	100.0
10	JX75	L9	True	10000.00	9849.807043	98.5



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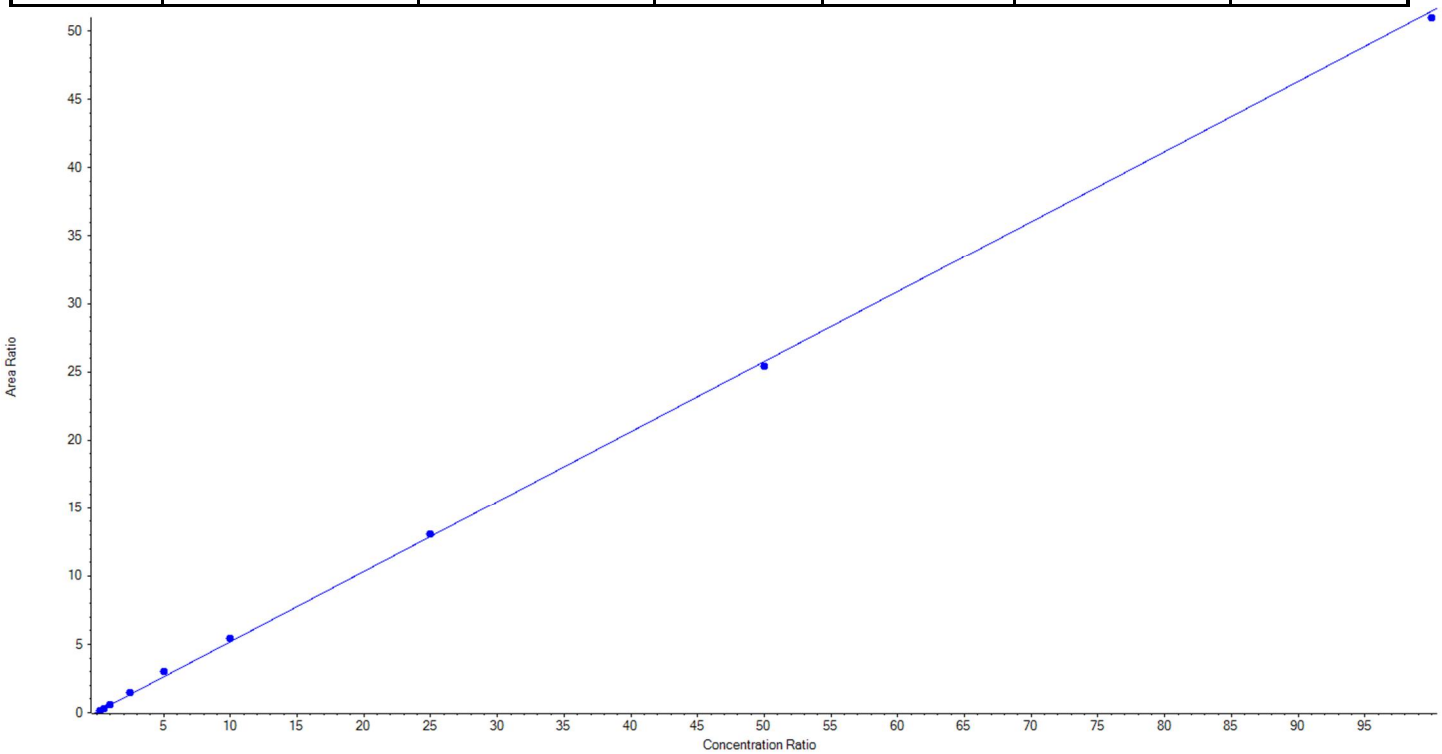
Calibration Summary Report

Analyte Name	PFTrDA_1	**Data File**	06252018_5-371.wiff
MRM Transition	663.0 / 619.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.51402 x + 0.05199 (r = 0.99946) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	21.244818	85.0
3	JX68	L2	True	50.00	43.984299	88.0
4	JX69	L3	True	100.00	100.101285	100.1
5	JX70	L4	True	250.00	268.672318	107.5
6	JX71	L5	True	500.00	581.148596	116.2
7	JX72	L6	True	1000.00	1043.469036	104.4
8	JX73	L7	True	2500.00	2531.653493	101.3
9	JX74	L8	True	5000.00	4929.189379	98.6
10	JX75	L9	True	10000.00	9905.536776	99.1



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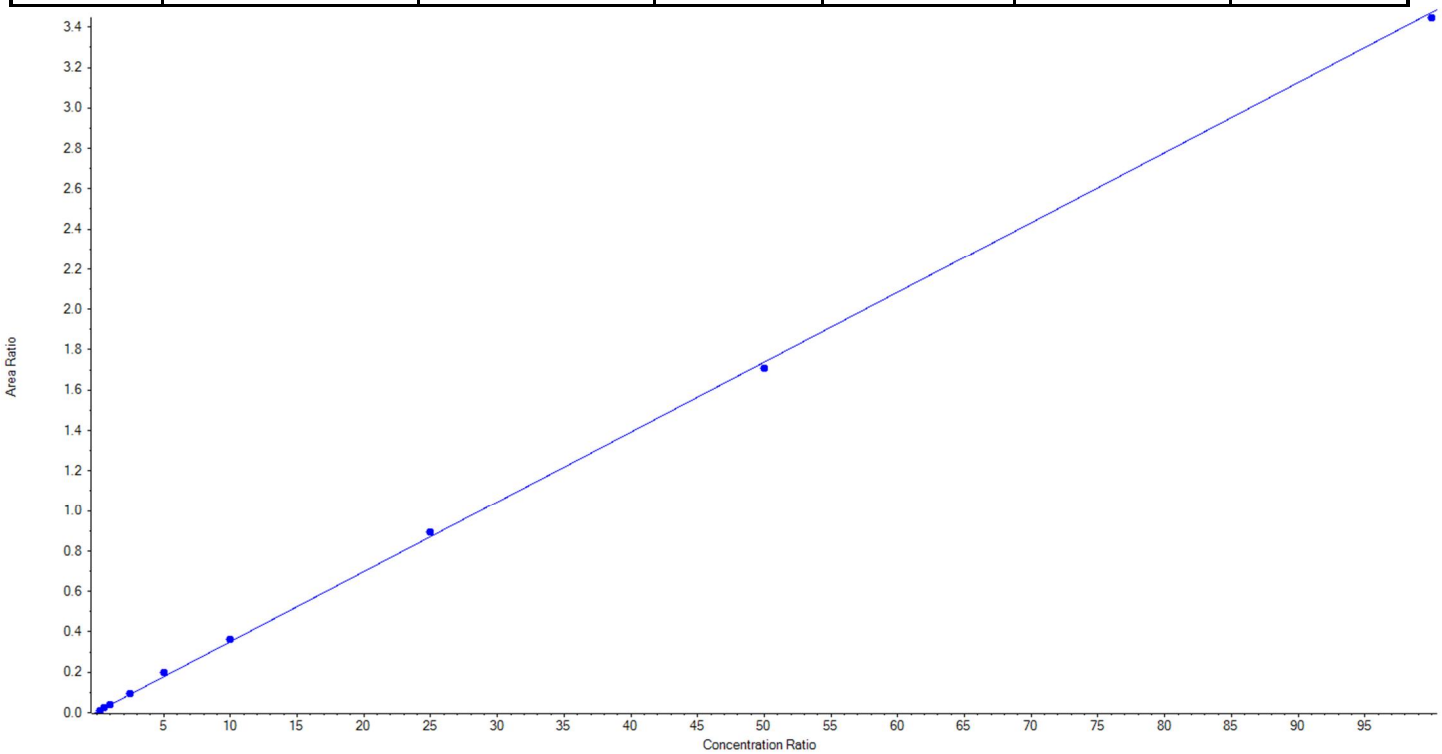
Calibration Summary Report

Analyte Name	PFTrDA_2	**Data File**	06252018_5-371.wiff
MRM Transition	663.0 / 169.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.03468 x + 0.00436 (r = 0.99956) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	17.673504	70.7
3	JX68	L2	True	50.00	57.354613	114.7
4	JX69	L3	True	100.00	96.213165	96.2
5	JX70	L4	True	250.00	256.853828	102.7
6	JX71	L5	True	500.00	557.870213	111.6
7	JX72	L6	True	1000.00	1038.781670	103.9
8	JX73	L7	True	2500.00	2570.884235	102.8
9	JX74	L8	True	5000.00	4906.079605	98.1
10	JX75	L9	True	10000.00	9923.289167	99.2



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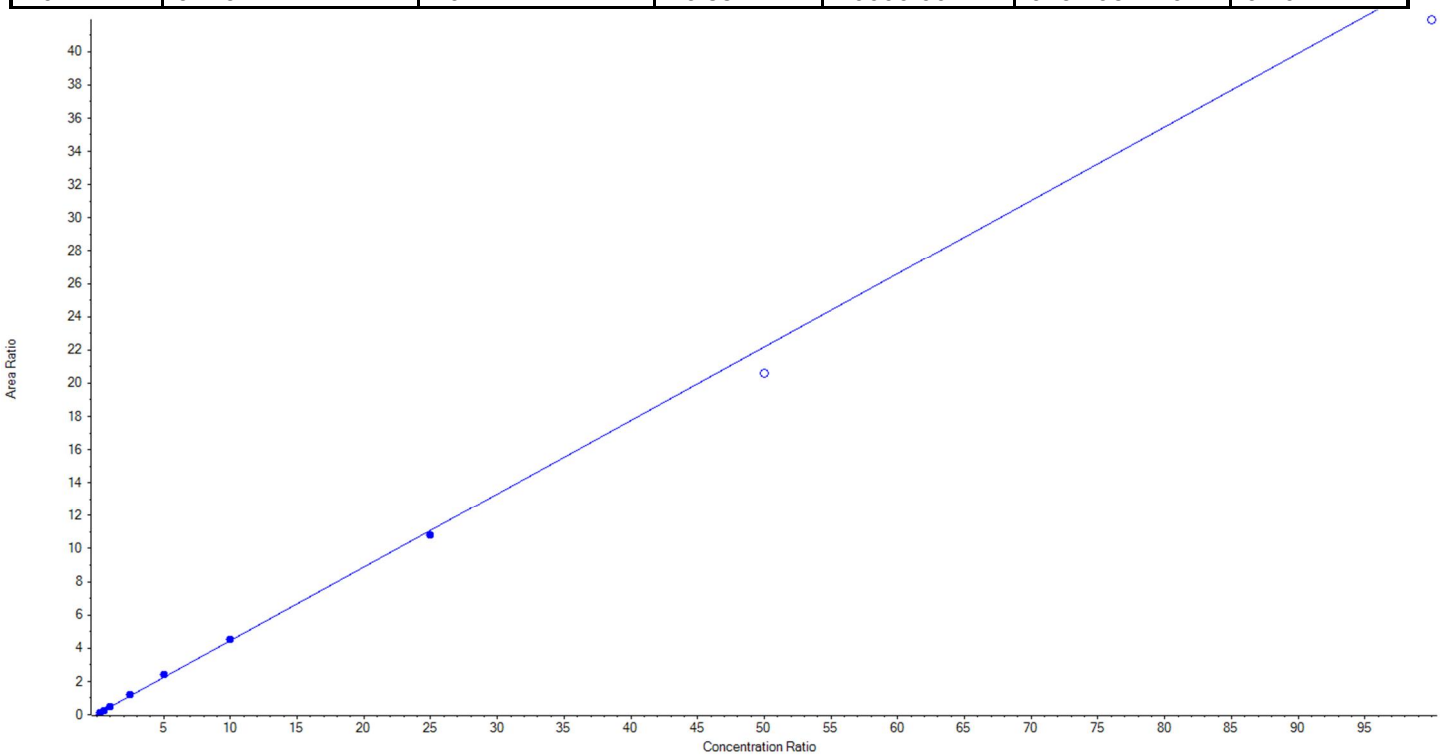
Calibration Summary Report

Analyte Name	PFTeDA_1	**Data File**	06252018_5-371.wiff
MRM Transition	713.0 / 669.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.44304 x + 0.02551 (r = 0.99930) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	22.496691	90.0
3	JX68	L2	True	50.00	50.162035	100.3
4	JX69	L3	True	100.00	97.908267	97.9
5	JX70	L4	True	250.00	263.855723	105.5
6	JX71	L5	True	500.00	536.286828	107.3
7	JX72	L6	True	1000.00	1013.493738	101.4
8	JX73	L7	True	2500.00	2440.796718	97.6
9	JX74	L8	False	5000.00	4644.931633	92.9
10	JX75	L9	False	10000.00	9454.981719	94.6



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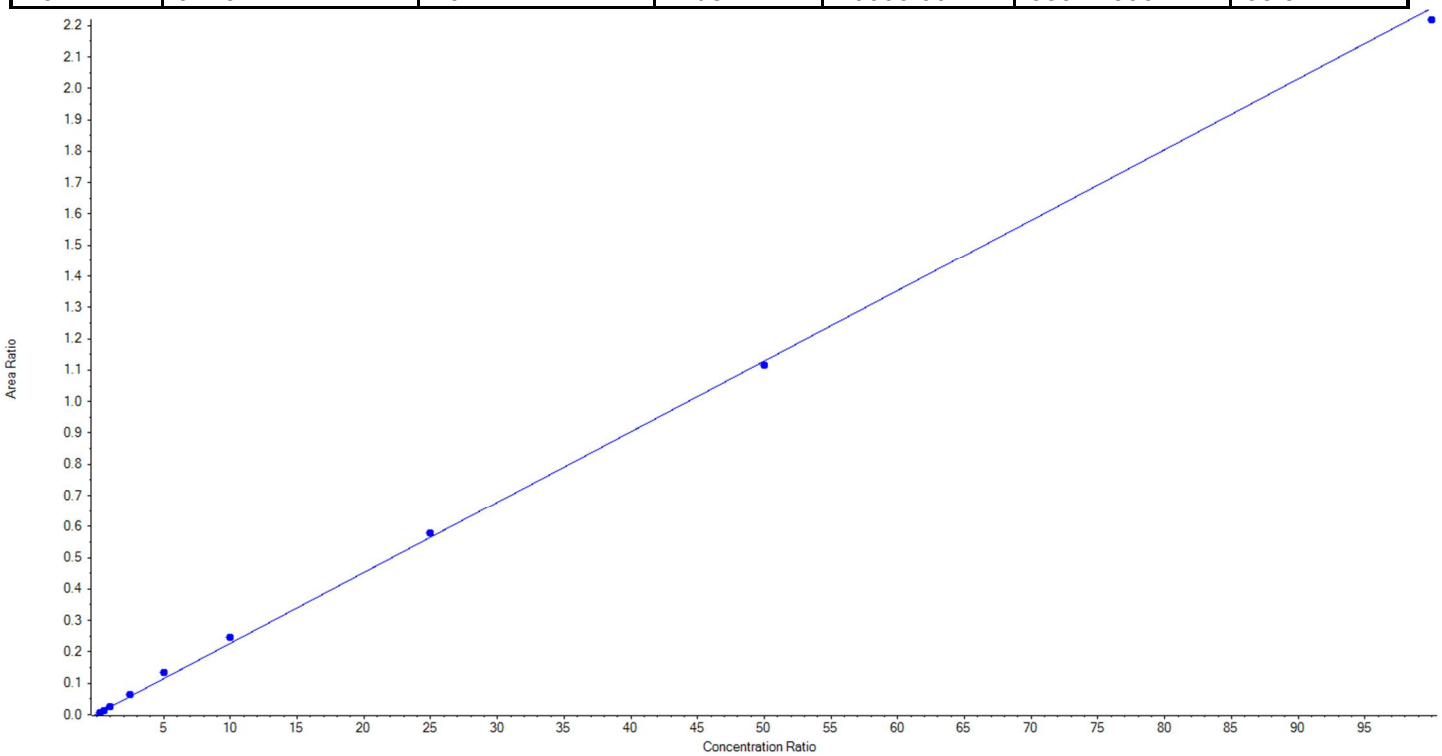
Calibration Summary Report

Analyte Name	PFTeDA_2	**Data File**	06252018_5-371.wiff
MRM Transition	713.0 / 169.0	**Result Table**	18-0391
Internal Standard	13C2-PFOA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.02254 x + 0.00202 (r = 0.99919) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	17.926807	71.7
3	JX68	L2	True	50.00	48.266278	96.5
4	JX69	L3	True	100.00	99.954762	100.0
5	JX70	L4	True	250.00	267.694654	107.1
6	JX71	L5	True	500.00	588.228040	117.7
7	JX72	L6	True	1000.00	1078.884415	107.9
8	JX73	L7	True	2500.00	2552.861984	102.1
9	JX74	L8	True	5000.00	4936.723449	98.7
10	JX75	L9	True	10000.00	9834.459611	98.3



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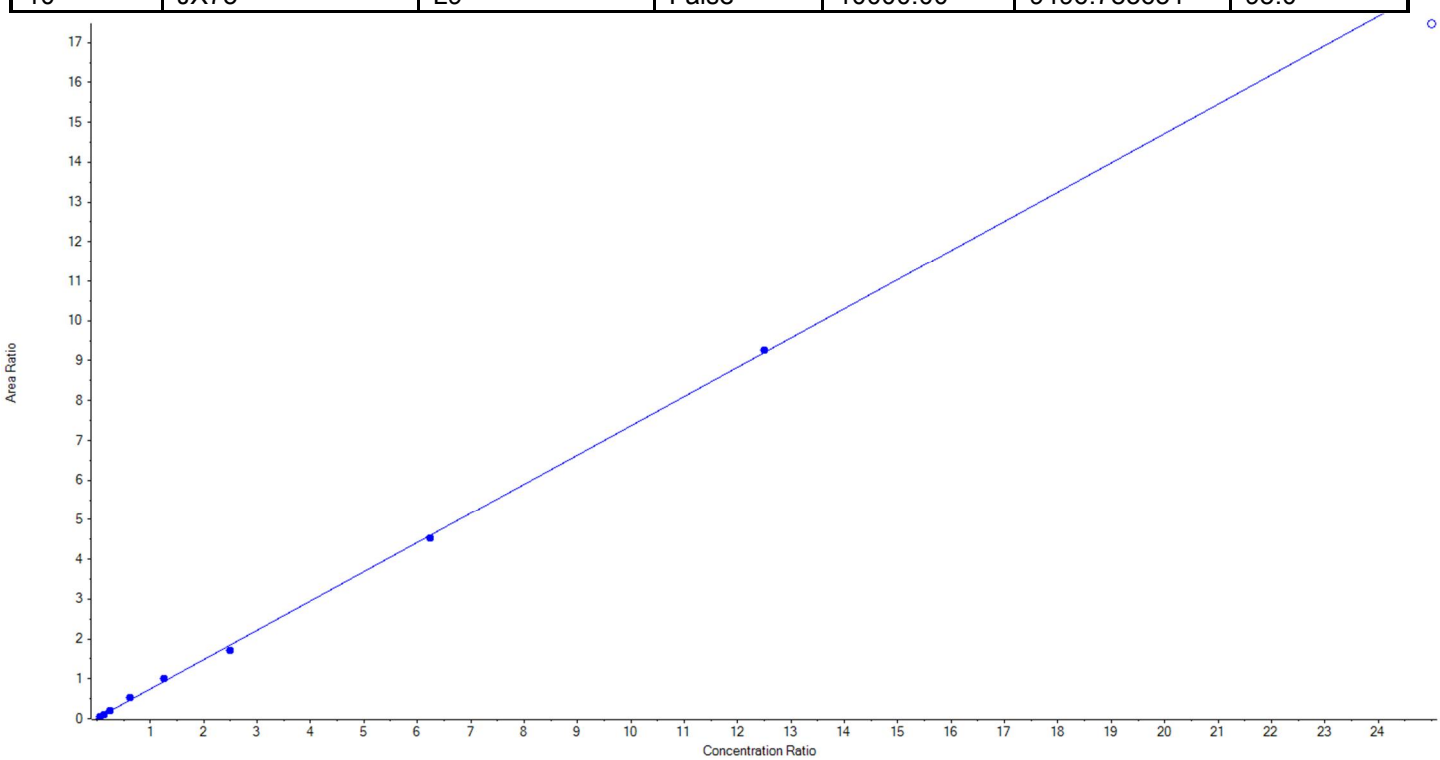
Calibration Summary Report

Analyte Name	NMeFOSAA_1	**Data File**	06252018_5-371.wiff
MRM Transition	570.0 / 419.0	**Result Table**	18-0391
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.73537 x + 0.01025 (r = 0.99898) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	18.491095	74.0
3	JX68	L2	True	50.00	51.518002	103.0
4	JX69	L3	True	100.00	108.232072	108.2
5	JX70	L4	True	250.00	284.801456	113.9
6	JX71	L5	True	500.00	545.527150	109.1
7	JX72	L6	True	1000.00	929.237418	92.9
8	JX73	L7	True	2500.00	2453.696787	98.2
9	JX74	L8	True	5000.00	5033.496021	100.7
10	JX75	L9	False	10000.00	9496.783651	95.0



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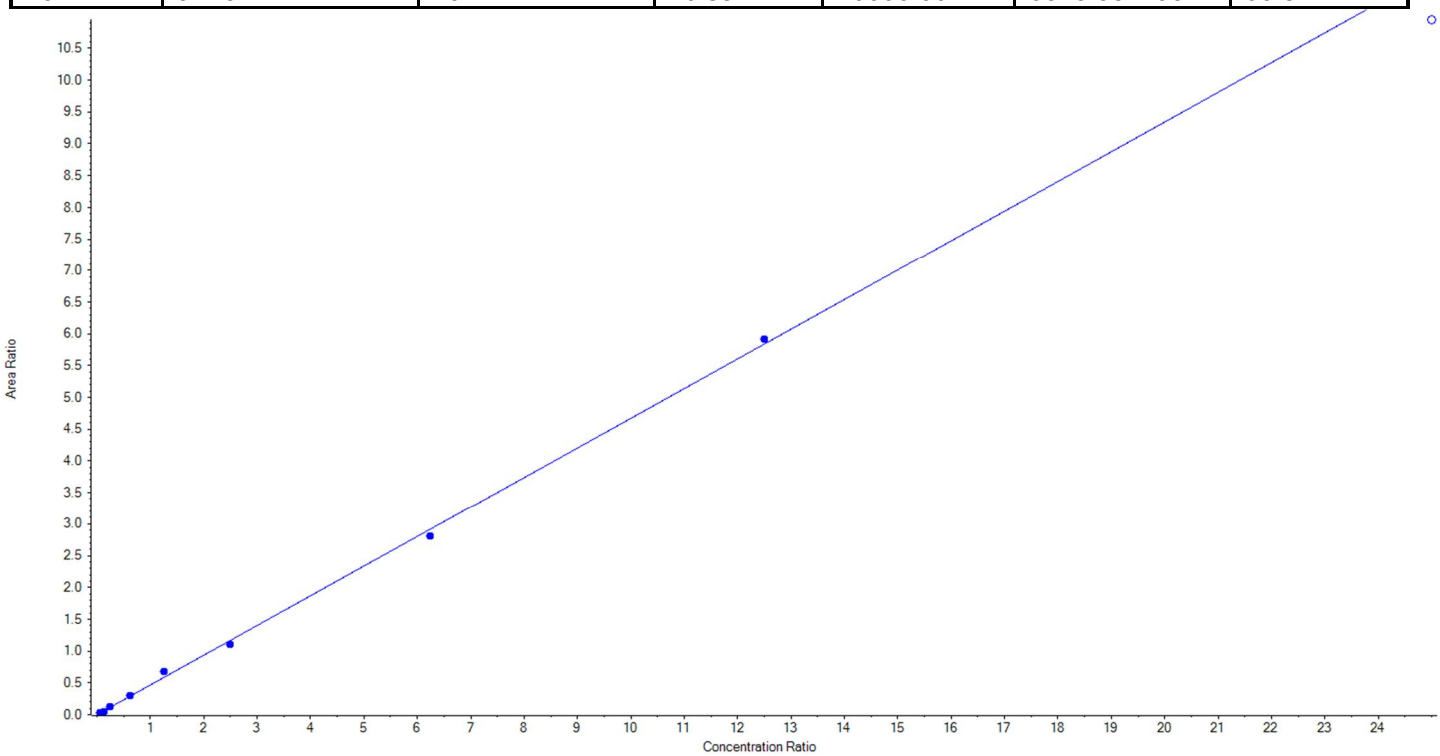
Calibration Summary Report

Analyte Name	NMeFOSAA_2	**Data File**	06252018_5-371.wiff
MRM Transition	570.0 / 512.0	**Result Table**	18-0391
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.46708 x + 2.81156e-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	JX67	L1	True	25.00	23.276176	93.1
3	JX68	L2	True	50.00	43.005903	86.0
4	JX69	L3	True	100.00	109.574657	109.6
5	JX70	L4	True	250.00	261.966030	104.8
6	JX71	L5	True	500.00	574.602501	114.9
7	JX72	L6	True	1000.00	942.155059	94.2
8	JX73	L7	True	2500.00	2398.901036	96.0
9	JX74	L8	True	5000.00	5071.518638	101.4
10	JX75	L9	False	10000.00	9375.584195	93.8



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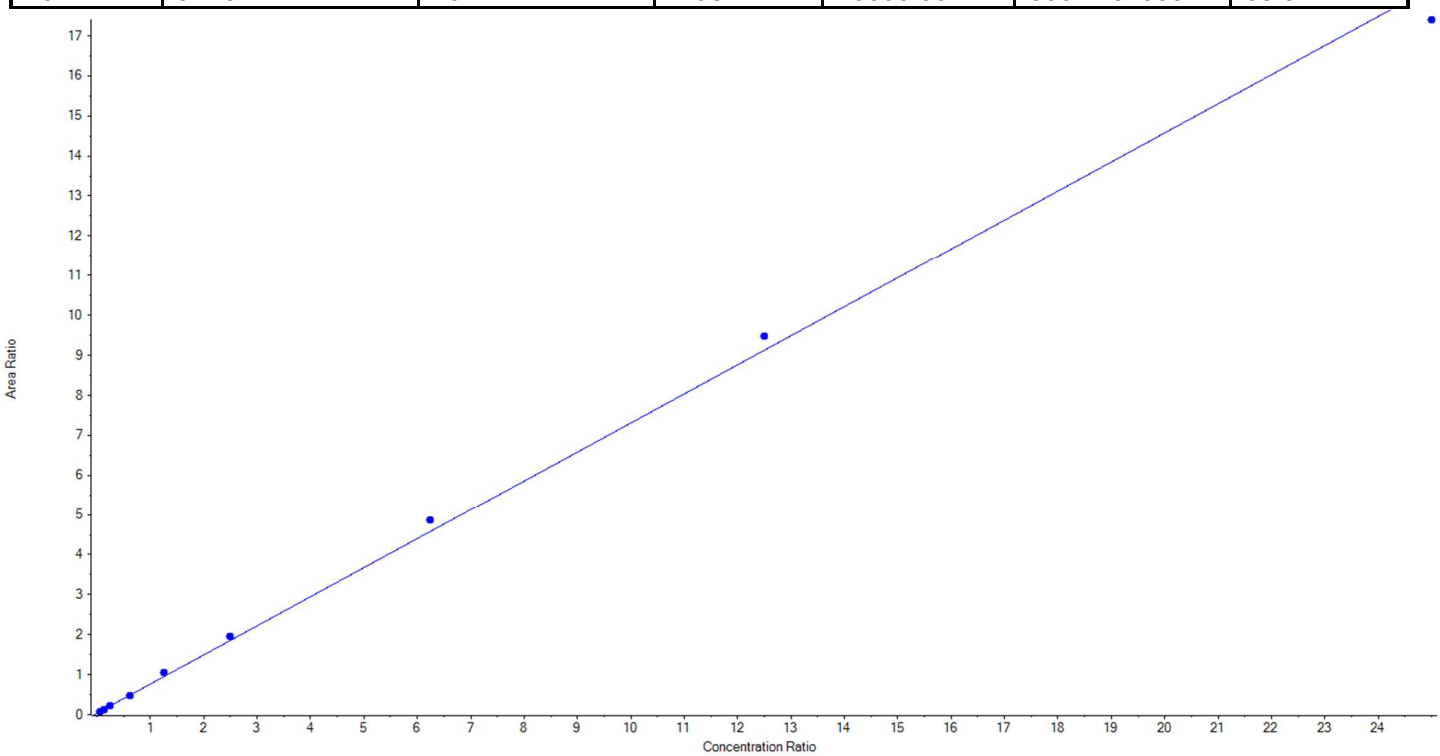
Calibration Summary Report

Analyte Name	NEtFOSAA_1	**Data File**	06252018_5-371.wiff
MRM Transition	584.0 / 419.0	**Result Table**	18-0391
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.72682 x + 0.03896 (r = 0.99871) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	True	25.00	22.907735	91.6
3	JX68	L2	True	50.00	41.483663	83.0
4	JX69	L3	True	100.00	105.864049	105.9
5	JX70	L4	True	250.00	244.778528	97.9
6	JX71	L5	True	500.00	554.849012	111.0
7	JX72	L6	True	1000.00	1050.849199	105.1
8	JX73	L7	True	2500.00	2651.436287	106.1
9	JX74	L8	True	5000.00	5198.578588	104.0
10	JX75	L9	True	10000.00	9554.252939	95.5



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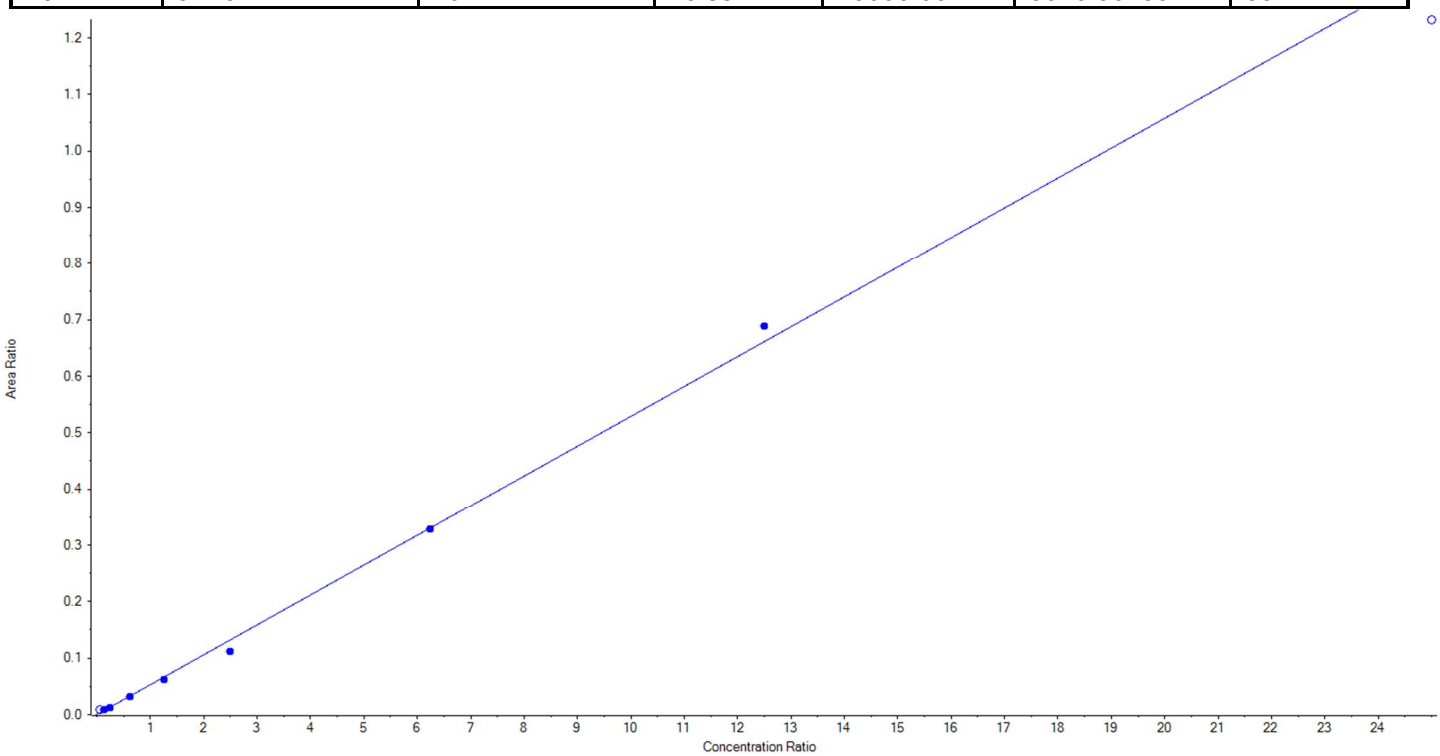
Calibration Summary Report

Analyte Name	NEtFOSAA_2	**Data File**	06252018_5-371.wiff
MRM Transition	584.0 / 483.0	**Result Table**	18-0391
Internal Standard	d3-MeFOSAA	**Instrument Name**	QTRAP 5500
Acquisition Date	6/27/2018 8:56:44 AM	**Acquisition Method**	5-0371.dam

Regression Equation: y = 0.05288 x + 1.72730e-4 (r = 0.99760) (weighting: 1 / x)

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	JX67	L1	False	25.00	61.454013	245.8
3	JX68	L2	True	50.00	62.258168	124.5
4	JX69	L3	True	100.00	96.211192	96.2
5	JX70	L4	True	250.00	246.407835	98.6
6	JX71	L5	True	500.00	465.379465	93.1
7	JX72	L6	True	1000.00	843.713651	84.4
8	JX73	L7	True	2500.00	2477.074244	99.1
9	JX74	L8	True	5000.00	5208.955444	104.2
10	JX75	L9	False	10000.00	9316.361301	93.2



	Drinking Water Calibration Curve Concentrations (ng/L)								
	JX67	**JX68**	**JX69**	**JX70**	**JX71**	**JX72**	**JX73**	**JX74**	**JX75**
PFHxA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFHpA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFOA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFNA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFUnA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFDoA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTrDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFTeDA	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NMeFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
NEtFOSAA (branched)	25.00	50.00	100.00	250.00	500.00	1,000.00	2,500.00	5,000.00	10,000.00
PFBS	22.15	44.30	88.60	221.50	443.00	885.00	2,212.50	4,425.00	8,850.00
PFHxS (branched)	22.80	45.60	91.20	228.00	456.00	912.00	2,280.00	4,560.00	9,120.00
PFOS (branched)	23.15	46.30	92.60	231.50	463.00	925.60	2,314.00	4,628.00	9,256.00
	Surrogates								
13C2-PFHxA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
13C2-PFDA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	200.00
d5-EtFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	800.00
	Internal Standards								
13C2-PFOA	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
13C4-PFOS	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00	287.00
d3-MeFOSAA	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00

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Summary Ion Ratio Report

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Sample Name	JX67	**Injection Vial**	2
Sample ID	L1	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:05:43	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.439	0.341	ü
PFHxA_1	313.0 / 269.0	1.79	PFHxA			
PFHxA_2	313.0 / 119.0	1.79	PFHxA	0.078	0.072	ü
PFHpA_1	363.0 / 319.0	2.15	PFHpA			
PFHpA_2	363.0 / 169.0	2.15	PFHpA	0.037	0.026	ü
PFHxS_1	399.0 / 80.0	2.16	PFHxS			
PFHxS_2	399.0 / 99.0	2.16	PFHxS	0.309	0.293	ü
PFOA_1	413.0 / 369.0	2.52	PFOA			
PFOA_2	413.0 / 169.0	2.52	PFOA	0.082	0.074	ü
PFNA_1	463.0 / 419.0	2.90	PFNA			
PFNA_2	463.0 / 219.0	2.90	PFNA	0.406	0.295	ü
PFOS_1	499.0 / 80.0	2.89	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.181	0.184	ü
PFDA_1	513.0 / 469.0	3.25	PFDA			
PFDA_2	513.0 / 219.0	3.25	PFDA	0.079	0.041	
PFUnA_1	563.0 / 519.0	3.56	PFUnA			
PFUnA_2	563.0 / 269.0	3.56	PFUnA	0.059	0.048	ü
PFDoA_1	613.0 / 569.0	3.85	PFDoA			
PFDoA_2	613.0 / 319.0	3.85	PFDoA	0.171	0.161	ü
PFTrDA_1	663.0 / 619.0	4.10	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.10	PFTrDA	0.065	0.069	ü
PFTeDA_1	713.0 / 669.0	4.32	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.32	PFTeDA	0.048	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.39	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.621	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.56	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.57	NEtFOSAA	0.103	0.065	
13C2-PFHxA	315.0 / 270.0	1.78				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.55		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX68	**Injection Vial**	3
Sample ID	L2	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:14:41	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.403	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.77	PFHxA	0.076	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.15	PFHpA	0.025	0.026	ü
PFHxS_1	399.0 / 80.0	2.16	PFHxS			
PFHxS_2	399.0 / 99.0	2.16	PFHxS	0.288	0.293	ü
PFOA_1	413.0 / 369.0	2.52	PFOA			
PFOA_2	413.0 / 169.0	2.52	PFOA	0.078	0.074	ü
PFNA_1	463.0 / 419.0	2.90	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.284	0.295	ü
PFOS_1	499.0 / 80.0	2.89	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.159	0.184	ü
PFDA_1	513.0 / 469.0	3.24	PFDA			
PFDA_2	513.0 / 219.0	3.24	PFDA	0.048	0.041	ü
PFUnA_1	563.0 / 519.0	3.56	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.070	0.048	ü
PFDoA_1	613.0 / 569.0	3.85	PFDoA			
PFDoA_2	613.0 / 319.0	3.84	PFDoA	0.165	0.161	ü
PFTrDA_1	663.0 / 619.0	4.10	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.10	PFTrDA	0.087	0.069	ü
PFTeDA_1	713.0 / 669.0	4.32	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.32	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.39	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.481	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.56	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.55	NEtFOSAA	0.074	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.54		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX69	**Injection Vial**	4
Sample ID	L3	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:23:38	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.346	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.064	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.15	PFHpA	0.026	0.026	ü
PFHxS_1	399.0 / 80.0	2.16	PFHxS			
PFHxS_2	399.0 / 99.0	2.16	PFHxS	0.297	0.293	ü
PFOA_1	413.0 / 369.0	2.52	PFOA			
PFOA_2	413.0 / 169.0	2.52	PFOA	0.069	0.074	ü
PFNA_1	463.0 / 419.0	2.90	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.304	0.295	ü
PFOS_1	499.0 / 80.0	2.89	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.182	0.184	ü
PFDA_1	513.0 / 469.0	3.24	PFDA			
PFDA_2	513.0 / 219.0	3.25	PFDA	0.038	0.041	ü
PFUnA_1	563.0 / 519.0	3.56	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.055	0.048	ü
PFDoA_1	613.0 / 569.0	3.85	PFDoA			
PFDoA_2	613.0 / 319.0	3.85	PFDoA	0.155	0.161	ü
PFTrDA_1	663.0 / 619.0	4.10	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.10	PFTrDA	0.067	0.069	ü
PFTeDA_1	713.0 / 669.0	4.32	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.32	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.39	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.39	NMeFOSAA	0.613	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.55	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.54	NEtFOSAA	0.056	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.54		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX70	**Injection Vial**	5
Sample ID	L4	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:32:34	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.49	PFBS	0.325	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.075	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.15	PFHpA	0.024	0.026	ü
PFHxS_1	399.0 / 80.0	2.15	PFHxS			
PFHxS_2	399.0 / 99.0	2.15	PFHxS	0.281	0.293	ü
PFOA_1	413.0 / 369.0	2.52	PFOA			
PFOA_2	413.0 / 169.0	2.52	PFOA	0.075	0.074	ü
PFNA_1	463.0 / 419.0	2.89	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.308	0.295	ü
PFOS_1	499.0 / 80.0	2.89	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.193	0.184	ü
PFDA_1	513.0 / 469.0	3.24	PFDA			
PFDA_2	513.0 / 219.0	3.24	PFDA	0.039	0.041	ü
PFUnA_1	563.0 / 519.0	3.56	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.056	0.048	ü
PFDoA_1	613.0 / 569.0	3.84	PFDoA			
PFDoA_2	613.0 / 319.0	3.84	PFDoA	0.153	0.161	ü
PFTrDA_1	663.0 / 619.0	4.09	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.09	PFTrDA	0.065	0.069	ü
PFTeDA_1	713.0 / 669.0	4.31	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.31	PFTeDA	0.052	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.39	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.39	NMeFOSAA	0.574	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.55	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.53	NEtFOSAA	0.068	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.54		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX71	**Injection Vial**	6
Sample ID	L5	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:41:29	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.316	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.070	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.14	PFHpA	0.023	0.026	ü
PFHxS_1	399.0 / 80.0	2.16	PFHxS			
PFHxS_2	399.0 / 99.0	2.16	PFHxS	0.295	0.293	ü
PFOA_1	413.0 / 369.0	2.52	PFOA			
PFOA_2	413.0 / 169.0	2.51	PFOA	0.071	0.074	ü
PFNA_1	463.0 / 419.0	2.89	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.289	0.295	ü
PFOS_1	499.0 / 80.0	2.89	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.186	0.184	ü
PFDA_1	513.0 / 469.0	3.24	PFDA			
PFDA_2	513.0 / 219.0	3.24	PFDA	0.039	0.041	ü
PFUnA_1	563.0 / 519.0	3.56	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.043	0.048	ü
PFDoA_1	613.0 / 569.0	3.84	PFDoA			
PFDoA_2	613.0 / 319.0	3.84	PFDoA	0.156	0.161	ü
PFTrDA_1	663.0 / 619.0	4.09	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.09	PFTrDA	0.065	0.069	ü
PFTeDA_1	713.0 / 669.0	4.31	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.31	PFTeDA	0.056	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.39	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.663	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.55	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.53	NEtFOSAA	0.059	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.54		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX72	**Injection Vial**	7
Sample ID	L6	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:50:24	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.314	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.071	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.14	PFHpA	0.024	0.026	ü
PFHxS_1	399.0 / 80.0	2.16	PFHxS			
PFHxS_2	399.0 / 99.0	2.16	PFHxS	0.296	0.293	ü
PFOA_1	413.0 / 369.0	2.51	PFOA			
PFOA_2	413.0 / 169.0	2.51	PFOA	0.072	0.074	ü
PFNA_1	463.0 / 419.0	2.89	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.296	0.295	ü
PFOS_1	499.0 / 80.0	2.89	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.189	0.184	ü
PFDA_1	513.0 / 469.0	3.24	PFDA			
PFDA_2	513.0 / 219.0	3.24	PFDA	0.041	0.041	ü
PFUnA_1	563.0 / 519.0	3.55	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.048	0.048	ü
PFDoA_1	613.0 / 569.0	3.84	PFDoA			
PFDoA_2	613.0 / 319.0	3.84	PFDoA	0.164	0.161	ü
PFTrDA_1	663.0 / 619.0	4.09	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.09	PFTrDA	0.067	0.069	ü
PFTeDA_1	713.0 / 669.0	4.31	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.31	PFTeDA	0.054	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.38	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.640	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.55	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.55	NEtFOSAA	0.057	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.54		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX73	**Injection Vial**	8
Sample ID	L7	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T09:59:20	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.302	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.071	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.14	PFHpA	0.022	0.026	ü
PFHxS_1	399.0 / 80.0	2.15	PFHxS			
PFHxS_2	399.0 / 99.0	2.15	PFHxS	0.292	0.293	ü
PFOA_1	413.0 / 369.0	2.51	PFOA			
PFOA_2	413.0 / 169.0	2.51	PFOA	0.075	0.074	ü
PFNA_1	463.0 / 419.0	2.89	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.292	0.295	ü
PFOS_1	499.0 / 80.0	2.88	PFOS			
PFOS_2	499.0 / 99.0	2.88	PFOS	0.192	0.184	ü
PFDA_1	513.0 / 469.0	3.23	PFDA			
PFDA_2	513.0 / 219.0	3.23	PFDA	0.041	0.041	ü
PFUnA_1	563.0 / 519.0	3.55	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.043	0.048	ü
PFDoA_1	613.0 / 569.0	3.84	PFDoA			
PFDoA_2	613.0 / 319.0	3.84	PFDoA	0.160	0.161	ü
PFTrDA_1	663.0 / 619.0	4.09	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.09	PFTrDA	0.069	0.069	ü
PFTeDA_1	713.0 / 669.0	4.31	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.31	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.38	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.620	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.54	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.54	NEtFOSAA	0.068	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.53		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX74	**Injection Vial**	9
Sample ID	L8	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T10:08:14	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.50	PFBS	0.308	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.78	PFHxA	0.071	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.14	PFHpA	0.025	0.026	ü
PFHxS_1	399.0 / 80.0	2.15	PFHxS			
PFHxS_2	399.0 / 99.0	2.16	PFHxS	0.285	0.293	ü
PFOA_1	413.0 / 369.0	2.51	PFOA			
PFOA_2	413.0 / 169.0	2.51	PFOA	0.074	0.074	ü
PFNA_1	463.0 / 419.0	2.89	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.293	0.295	ü
PFOS_1	499.0 / 80.0	2.88	PFOS			
PFOS_2	499.0 / 99.0	2.89	PFOS	0.189	0.184	ü
PFDA_1	513.0 / 469.0	3.23	PFDA			
PFDA_2	513.0 / 219.0	3.23	PFDA	0.041	0.041	ü
PFUnA_1	563.0 / 519.0	3.55	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.046	0.048	ü
PFDoA_1	613.0 / 569.0	3.84	PFDoA			
PFDoA_2	613.0 / 319.0	3.84	PFDoA	0.165	0.161	ü
PFTrDA_1	663.0 / 619.0	4.09	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.09	PFTrDA	0.067	0.069	ü
PFTeDA_1	713.0 / 669.0	4.31	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.30	PFTeDA	0.054	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.38	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.639	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.54	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.54	NEtFOSAA	0.073	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.23		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.54		N/A	N/A	ü

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Summary Ion Ratio Report

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Sample Name	JX75	**Injection Vial**	10
Sample ID	L9	**Injection Volume**	10.00
Sample Type	Standard	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T10:17:08	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Ratio Group	Calculated Ion ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.50	PFBS			
PFBS_2	298.9 / 99.0	1.49	PFBS	0.314	0.341	ü
PFHxA_1	313.0 / 269.0	1.78	PFHxA			
PFHxA_2	313.0 / 119.0	1.77	PFHxA	0.071	0.072	ü
PFHpA_1	363.0 / 319.0	2.14	PFHpA			
PFHpA_2	363.0 / 169.0	2.14	PFHpA	0.024	0.026	ü
PFHxS_1	399.0 / 80.0	2.15	PFHxS			
PFHxS_2	399.0 / 99.0	2.15	PFHxS	0.290	0.293	ü
PFOA_1	413.0 / 369.0	2.51	PFOA			
PFOA_2	413.0 / 169.0	2.51	PFOA	0.075	0.074	ü
PFNA_1	463.0 / 419.0	2.89	PFNA			
PFNA_2	463.0 / 219.0	2.89	PFNA	0.291	0.295	ü
PFOS_1	499.0 / 80.0	2.88	PFOS			
PFOS_2	499.0 / 99.0	2.88	PFOS	0.183	0.184	ü
PFDA_1	513.0 / 469.0	3.23	PFDA			
PFDA_2	513.0 / 219.0	3.23	PFDA	0.041	0.041	ü
PFUnA_1	563.0 / 519.0	3.55	PFUnA			
PFUnA_2	563.0 / 269.0	3.55	PFUnA	0.046	0.048	ü
PFDoA_1	613.0 / 569.0	3.84	PFDoA			
PFDoA_2	613.0 / 319.0	3.83	PFDoA	0.159	0.161	ü
PFTrDA_1	663.0 / 619.0	4.09	PFTrDA			
PFTrDA_2	663.0 / 169.0	4.08	PFTrDA	0.068	0.069	ü
PFTeDA_1	713.0 / 669.0	4.30	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.30	PFTeDA	0.053	0.053	ü
NMeFOSAA_1	570.0 / 419.0	3.38	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.38	NMeFOSAA	0.627	0.606	ü
NEtFOSAA_1	584.0 / 419.0	3.54	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.54	NEtFOSAA	0.071	0.065	ü
13C2-PFHxA	315.0 / 270.0	1.77				
13C2-PFDA	515.0 / 470.0	3.22		N/A	N/A	ü
d5-EtFOSAA	589.0 / 419.0	3.53		N/A	N/A	ü

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QC Summary Report

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Sample Name	JV66 ICC	**Injection Vial**	11
Sample ID	ICC	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T10:26:04	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.49	805.276200	885.00	90.99
PFBS_2	298.9 / 99.0	1.49	795.986368	885.00	89.94
PFHxA_1	313.0 / 269.0	1.77	996.404291	1000.00	99.64
PFHxA_2	313.0 / 119.0	1.77	997.489769	1000.00	99.75
PFHpA_1	363.0 / 319.0	2.14	1031.124835	1000.00	103.11
PFHpA_2	363.0 / 169.0	2.14	1161.534315	1000.00	116.15
PFHxS_1	399.0 / 80.0	2.15	920.448980	912.00	100.93
PFHxS_2	399.0 / 99.0	2.15	870.009843	912.00	95.40
PFOA_1	413.0 / 369.0	2.51	1050.976678	1000.00	105.10
PFOA_2	413.0 / 169.0	2.51	1048.582291	1000.00	104.86
PFNA_1	463.0 / 419.0	2.88	1000.643194	1000.00	100.06
PFNA_2	463.0 / 219.0	2.88	1035.420136	1000.00	103.54
PFOS_1	499.0 / 80.0	2.88	809.974713	925.60	87.51
PFOS_2	499.0 / 99.0	2.88	951.613036	925.60	102.81
PFDA_1	513.0 / 469.0	3.23	1068.328726	1000.00	106.83
PFDA_2	513.0 / 219.0	3.23	1022.246333	1000.00	102.22
PFUnA_1	563.0 / 519.0	3.55	1036.138808	1000.00	103.61
PFUnA_2	563.0 / 269.0	3.55	1023.503647	1000.00	102.35
PFDoA_1	613.0 / 569.0	3.83	1033.267977	1000.00	103.33
PFDoA_2	613.0 / 319.0	3.83	1036.887732	1000.00	103.69
PFTrDA_1	663.0 / 619.0	4.08	1007.914002	1000.00	100.79
PFTrDA_2	663.0 / 169.0	4.08	1068.145164	1000.00	106.81
PFTeDA_1	713.0 / 669.0	4.30	958.601170	1000.00	95.86
PFTeDA_2	713.0 / 169.0	4.30	990.767060	1000.00	99.08
NMeFOSAA_1	570.0 / 419.0	3.38	1288.934423	1000.00	128.89
NMeFOSAA_2	570.0 / 512.0	3.38	1103.628737	1000.00	110.36
NEtFOSAA_1	584.0 / 419.0	3.54	1241.276530	1000.00	124.13
NEtFOSAA_2	584.0 / 483.0	3.54	1261.461923	1000.00	126.15
13C2-PFHxA	315.0 / 270.0	1.76	102.268470	100.00	102.27
13C2-PFDA	515.0 / 470.0	3.22	104.026718	100.00	104.03
d5-EtFOSAA	589.0 / 419.0	3.53	467.050507	400.00	116.76

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QC Summary Report

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Sample Name	JX71 CCV	**Injection Vial**	21
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T11:55:23	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.49	431.881933	443.00	97.49
PFBS_2	298.9 / 99.0	1.49	432.842409	443.00	97.71
PFHxA_1	313.0 / 269.0	1.77	499.346827	500.00	99.87
PFHxA_2	313.0 / 119.0	1.77	601.194956	500.00	120.24
PFHpA_1	363.0 / 319.0	2.14	541.137827	500.00	108.23
PFHpA_2	363.0 / 169.0	2.13	549.226276	500.00	109.85
PFHxS_1	399.0 / 80.0	2.15	473.730771	456.00	103.89
PFHxS_2	399.0 / 99.0	2.15	464.108904	456.00	101.78
PFOA_1	413.0 / 369.0	2.51	534.461015	500.00	106.89
PFOA_2	413.0 / 169.0	2.51	540.865692	500.00	108.17
PFNA_1	463.0 / 419.0	2.89	515.537411	500.00	103.11
PFNA_2	463.0 / 219.0	2.89	527.595925	500.00	105.52
PFOS_1	499.0 / 80.0	2.88	472.903639	463.00	102.14
PFOS_2	499.0 / 99.0	2.88	475.600795	463.00	102.72
PFDA_1	513.0 / 469.0	3.23	537.193840	500.00	107.44
PFDA_2	513.0 / 219.0	3.23	557.879409	500.00	111.58
PFUnA_1	563.0 / 519.0	3.55	538.580498	500.00	107.72
PFUnA_2	563.0 / 269.0	3.55	490.036421	500.00	98.01
PFDoA_1	613.0 / 569.0	3.83	550.806616	500.00	110.16
PFDoA_2	613.0 / 319.0	3.83	541.209516	500.00	108.24
PFTrDA_1	663.0 / 619.0	4.08	525.581751	500.00	105.12
PFTrDA_2	663.0 / 169.0	4.08	523.897503	500.00	104.78
PFTeDA_1	713.0 / 669.0	4.30	504.237460	500.00	100.85
PFTeDA_2	713.0 / 169.0	4.29	519.757693	500.00	103.95
NMeFOSAA_1	570.0 / 419.0	3.38	561.321770	500.00	112.26
NMeFOSAA_2	570.0 / 512.0	3.38	610.613795	500.00	122.12
NEtFOSAA_1	584.0 / 419.0	3.54	536.007711	500.00	107.20
NEtFOSAA_2	584.0 / 483.0	3.55	415.396690	500.00	83.08
13C2-PFHxA	315.0 / 270.0	1.77	99.025613	100.00	99.03
13C2-PFDA	515.0 / 470.0	3.22	100.563413	100.00	100.56
d5-EtFOSAA	589.0 / 419.0	3.53	404.160124	400.00	101.04

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QC Summary Report

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Sample Name	JX72 CCV	**Injection Vial**	30
Sample ID	CCV	**Injection Volume**	10.00
Sample Type	Quality Control	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-27T13:24:40	**Data File**	06252018_5-371.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0391
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.49	873.898884	885.00	98.75
PFBS_2	298.9 / 99.0	1.49	850.361283	885.00	96.09
PFHxA_1	313.0 / 269.0	1.77	1011.323638	1000.00	101.13
PFHxA_2	313.0 / 119.0	1.77	1023.827578	1000.00	102.38
PFHpA_1	363.0 / 319.0	2.14	1008.604509	1000.00	100.86
PFHpA_2	363.0 / 169.0	2.13	1038.882110	1000.00	103.89
PFHxS_1	399.0 / 80.0	2.15	919.893376	912.00	100.87
PFHxS_2	399.0 / 99.0	2.15	895.456758	912.00	98.19
PFOA_1	413.0 / 369.0	2.51	1061.720067	1000.00	106.17
PFOA_2	413.0 / 169.0	2.51	1104.882265	1000.00	110.49
PFNA_1	463.0 / 419.0	2.88	1070.564835	1000.00	107.06
PFNA_2	463.0 / 219.0	2.88	1046.084937	1000.00	104.61
PFOS_1	499.0 / 80.0	2.88	940.951689	925.60	101.66
PFOS_2	499.0 / 99.0	2.88	969.972216	925.60	104.79
PFDA_1	513.0 / 469.0	3.23	1071.568690	1000.00	107.16
PFDA_2	513.0 / 219.0	3.23	1064.413417	1000.00	106.44
PFUnA_1	563.0 / 519.0	3.54	1062.504413	1000.00	106.25
PFUnA_2	563.0 / 269.0	3.54	1013.193735	1000.00	101.32
PFDoA_1	613.0 / 569.0	3.83	1046.611117	1000.00	104.66
PFDoA_2	613.0 / 319.0	3.83	990.540295	1000.00	99.05
PFTrDA_1	663.0 / 619.0	4.08	1008.167322	1000.00	100.82
PFTrDA_2	663.0 / 169.0	4.08	1046.383088	1000.00	104.64
PFTeDA_1	713.0 / 669.0	4.30	987.704415	1000.00	98.77
PFTeDA_2	713.0 / 169.0	4.30	1075.545077	1000.00	107.55
NMeFOSAA_1	570.0 / 419.0	3.38	1036.794321	1000.00	103.68
NMeFOSAA_2	570.0 / 512.0	3.37	1016.394788	1000.00	101.64
NEtFOSAA_1	584.0 / 419.0	3.53	1130.780071	1000.00	113.08
NEtFOSAA_2	584.0 / 483.0	3.53	1106.039654	1000.00	110.60
13C2-PFHxA	315.0 / 270.0	1.76	95.635483	100.00	95.64
13C2-PFDA	515.0 / 470.0	3.22	99.367146	100.00	99.37
d5-EtFOSAA	589.0 / 419.0	3.53	420.922541	400.00	105.23

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Summary Quant Report

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Sample Name	J6258-FS(0)	**Injection Vial**	14
Sample ID	WGNA-052918-RW-3124	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:34:27	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	Signal/Noise Ratio	Modified
PFBS_1	298.9 / 80.0	1.53	396268.33	863.744923	432.7	true
PFBS_2	298.9 / 99.0	1.53	121321.85	858.000227	600.1	false
PFHxA_1	313.0 / 269.0	1.83	689875.35	1453.171540	106.9	false
PFHxA_2	313.0 / 119.0	1.83	48471.36	1418.179698	115.4	false
PFHpA_1	363.0 / 319.0	2.20	431574.37	813.433588	115.2	false
PFHpA_2	363.0 / 169.0	2.19	14383.26	1121.645143	158.2	false
PFHxS_1	399.0 / 80.0	2.21	835262.98	1480.903680	244.1	false
PFHxS_2	399.0 / 99.0	2.21	233359.57	1440.123681	273.1	false
PFOA_1	413.0 / 369.0	2.58	1678590.29	2999.124575	285.6	false
PFOA_2	413.0 / 169.0	2.57	180375.15	4132.332054	194.0	false
PFNA_1	463.0 / 419.0	2.96	195371.65	368.637180	133.5	false
PFNA_2	463.0 / 219.0	2.96	55937.07	371.735176	126.5	false
PFOS_1	499.0 / 80.0	2.93	1673954.32	2615.794678	48.1	true
PFOS_2	499.0 / 99.0	2.95	274456.81	2302.436568	105.3	true
PFDA_1	513.0 / 469.0	3.31	40344.15	60.871719	112.8	false
PFDA_2	513.0 / 219.0	3.31	1506.05	37.606548	46.6	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	3.91	3891.79	0.505017	52.8	false
PFDoA_2	613.0 / 319.0	3.92	333.60	< 0	20.9	false
PFTrDA_1	663.0 / 619.0	4.17	4162.00	1.669999	97.2	false
PFTrDA_2	663.0 / 169.0	4.16	325.12	3.055930	21.8	true
PFTeDA_1	713.0 / 669.0	4.39	3915.92	0.404690	52.6	true
PFTeDA_2	713.0 / 169.0	4.39	295.62	0.133396	31.4	true
NMeFOSAA_1	570.0 / 419.0	3.46	602.21	0.617093	58.6	false
NMeFOSAA_2	570.0 / 512.0	3.47	215.90	< 0	21.7	true
NEtFOSAA_1	584.0 / 419.0	3.62	567.93	< 0	27.5	false
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	true
13C2-PFHxA	315.0 / 270.0	1.82	49917.64	107.140280	576.4	false
13C2-PFDA	515.0 / 470.0	3.30	52318.13	97.204668	1029.2	false
d5-EtFOSAA	589.0 / 419.0	3.61	26128.46	414.429239	204.2	false

Sample Calculation
PFOA 11.54 ng/L
y=1.01411x+0.42321
((1678590.29 / 54433.08) - 0.42321 / 1.01411) * 100 * 0.001 / 0.260 = 11.535 ng/L

LCS PFOA 93% 27.75 / 30.0 *100= 92.5%

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Summary Internal Standard Report

Created with Analyst Reporter
Printed: 15/06/2018 10:42:36 AM

Sample Name	J6258-FS(0)	**Injection Vial**	14
Sample ID	WGNA-052918-RW-3124	**Injection Volume**	10.00
Sample Type	Unknown	**Instrument Name**	QTRAP 5500
Acquisition Date	2018-06-12T17:34:27	**Data File**	5500_06122018.wiff
Acquisition Method	5-0371.dam	**Result Table**	18-0343
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	IS	IS MRM Transition	IS Area	IS Conc. (ng/L)
PFBS_1	298.9 / 80.0	1.53	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFBS_2	298.9 / 99.0	1.53	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFHxA_1	313.0 / 269.0	1.83	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHxA_2	313.0 / 119.0	1.83	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHpA_1	363.0 / 319.0	2.20	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHpA_2	363.0 / 169.0	2.19	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFHxS_1	399.0 / 80.0	2.21	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFHxS_2	399.0 / 99.0	2.21	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFOA_1	413.0 / 369.0	2.58	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFOA_2	413.0 / 169.0	2.57	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFNA_1	463.0 / 419.0	2.96	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFNA_2	463.0 / 219.0	2.96	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFOS_1	499.0 / 80.0	2.93	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFOS_2	499.0 / 99.0	2.95	13C4-PFOS	503.0 / 80.0	157775.26	287.00
PFDA_1	513.0 / 469.0	3.31	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFDA_2	513.0 / 219.0	3.31	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFUnA_1	563.0 / 519.0	N/A	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFUnA_2	563.0 / 269.0	N/A	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFDoA_1	613.0 / 569.0	3.91	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFDoA_2	613.0 / 319.0	3.92	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTrDA_1	663.0 / 619.0	4.17	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTrDA_2	663.0 / 169.0	4.16	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTeDA_1	713.0 / 669.0	4.39	13C2-PFOA	415.0 / 370.0	54433.08	100.00
PFTeDA_2	713.0 / 169.0	4.39	13C2-PFOA	415.0 / 370.0	54433.08	100.00
NMeFOSAA_1	570.0 / 419.0	3.46	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
NMeFOSAA_2	570.0 / 512.0	3.47	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
NEtFOSAA_1	584.0 / 419.0	3.62	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
NEtFOSAA_2	584.0 / 483.0	N/A	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00
13C2-PFHxA	315.0 / 270.0	1.82	13C2-PFOA	415.0 / 370.0	54433.08	100.00
13C2-PFDA	515.0 / 470.0	3.30	13C2-PFOA	415.0 / 370.0	54433.08	100.00
d5-EtFOSAA	589.0 / 419.0	3.61	d3-MeFOSAA	573.0 / 419.0	24921.35	400.00

Preliminary Data - For Official Use Only

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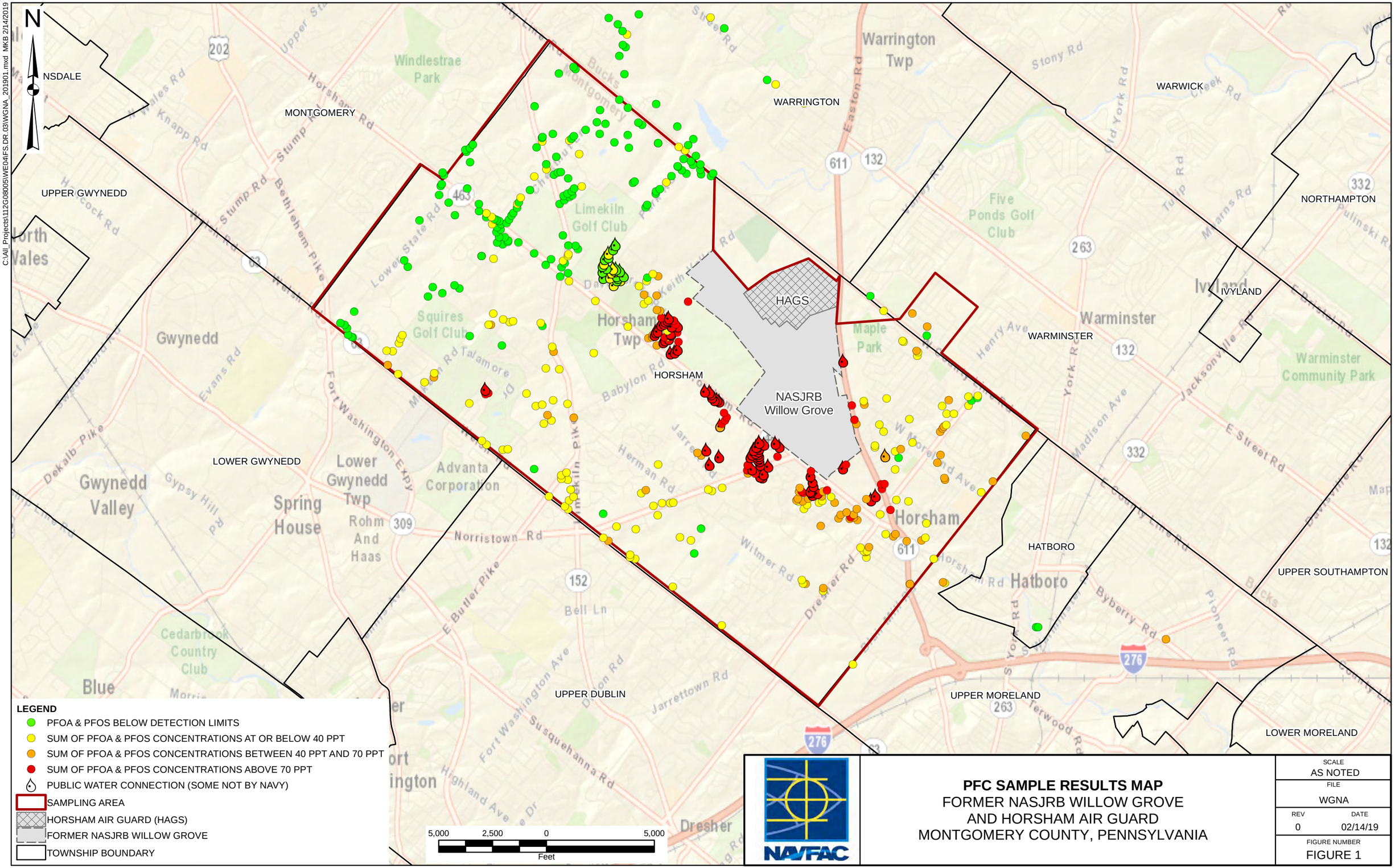

NAVFAC

PFC SAMPLE RESULTS MAP
FORMER NASJRB WILLOW GROVE
AND HORSHAM AIR GUARD
MONTGOMERY COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	WGNA
REV	0
DATE	02/14/19
FIGURE NUMBER	FIGURE 1