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Automated Report

Technical Report for

Aerostar SES LLC

Former Kulis ANGB

M3010.1484.0006.05.0004

SGS Job Number: FA81068

Sampling Date: 11/18/20

Report to:

Aerostar SES LLC
1006 Floyd Culler Ct
Oak Ridge, TN 37830
datamgmt@specproenv.com

ATTN: Sharon Pennington

Total number of pages in report: 375

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Aerostar SES LLC

Job No: FA81068

Former Kulis ANGB
Project No: M3010.1484.0006.05.0004

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA81068-1	11/18/20	10:25	TC	11/20/20	AQ	Water	K00701
FA81068-2	11/18/20	10:25	TC	11/20/20	AQ	Water	K00702
FA81068-3	11/18/20	13:34	TC	11/20/20	AQ	Water	K01203
FA81068-3D	11/18/20	13:34	TC	11/20/20	AQ	Water Dup/MSD	K01203
FA81068-3S	11/18/20	13:34	TC	11/20/20	AQ	Water Matrix Spike	K01203

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Aerostar SES LLC **Job No:** FA81068

Site: Former Kulis ANGB **Report Date:** 12/8/2020 7:14:43 PM

3 Samples were collected on 11/18/2020 and were received at SGS North America Inc - Orlando on 11/20/2020 properly preserved, at 3.4 Deg. C and intact. These Samples received an SGS Orlando job number of FA81068. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP83173

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) FA81068-3MS, FA81068-3MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____

Jenna Kravitz, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA81068
Account: Aerostar SES LLC
Project: Former Kulis ANGB
Collected: 11/18/20

3

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA81068-1	**K00701**					

No hits reported in this sample.

FA81068-2	**K00702**

No hits reported in this sample.

FA81068-3	**K01203**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	K00701		
Lab Sample ID:	FA81068-1	**Date Sampled:**	11/18/20
Matrix:	AQ - Water	**Date Received:**	11/20/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Kulis ANGB		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q8601.D	1	12/03/20 02:43	NAF	11/28/20 08:30	OP83173	S4Q118
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

EPA 537.1 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
375-85-9	Perfluoroheptanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
335-67-1	Perfluorooctanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
375-95-1	Perfluorononanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
335-76-2	Perfluorodecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
307-55-1	Perfluorododecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
72629-94-8	Perfluorotridecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	4.0 U	8.0	4.0	2.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	4.0 U	8.0	4.0	2.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	4.0 U	8.0	4.0	2.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	8.0 U	16	8.0	4.0	ng/l	
2991-50-6	EtFOSAA	8.0 U	16	8.0	4.0	ng/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	8.0 U	16	8.0	4.0	ng/l	
919005-14-4	ADONA	8.0 U	16	8.0	4.0	ng/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	8.0 U	16	8.0	4.0	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	8.0 U	16	8.0	4.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	79%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	K00701		
Lab Sample ID:	FA81068-1	**Date Sampled:**	11/18/20
Matrix:	AQ - Water	**Date Received:**	11/20/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Kulis ANGB		

EPA 537.1 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	75%		50-150%
	13C2-PFDoDA	74%		50-150%
	13C2-PFTeDA	63%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	77%		50-150%
	d3-MeFOSAA	82%		50-150%
	d5-EtFOSAA	79%		50-150%
	13C3-HFPO-DA	77%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	K00702		
Lab Sample ID:	FA81068-2	**Date Sampled:**	11/18/20
Matrix:	AQ - Water	**Date Received:**	11/20/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Kulis ANGB		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q8602.D	1	12/03/20 02:59	NAF	11/28/20 08:30	OP83173	S4Q118
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

EPA 537.1 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
375-85-9	Perfluoroheptanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
335-67-1	Perfluorooctanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
375-95-1	Perfluorononanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
335-76-2	Perfluorodecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
307-55-1	Perfluorododecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
72629-94-8	Perfluorotridecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	4.0 U	8.0	4.0	2.0	ng/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	4.0 U	8.0	4.0	2.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	4.0 U	8.0	4.0	2.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	4.0 U	8.0	4.0	2.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	8.0 U	16	8.0	4.0	ng/l	
2991-50-6	EtFOSAA	8.0 U	16	8.0	4.0	ng/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	8.0 U	16	8.0	4.0	ng/l	
919005-14-4	ADONA	8.0 U	16	8.0	4.0	ng/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	8.0 U	16	8.0	4.0	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	8.0 U	16	8.0	4.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	79%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	K00702		
Lab Sample ID:	FA81068-2	**Date Sampled:**	11/18/20
Matrix:	AQ - Water	**Date Received:**	11/20/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Kulis ANGB		

EPA 537.1 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	77%		50-150%
	13C7-PFUnDA	74%		50-150%
	13C2-PFDoDA	70%		50-150%
	13C2-PFTeDA	66%		50-150%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	75%		50-150%
	d3-MeFOSAA	79%		50-150%
	d5-EtFOSAA	72%		50-150%
	13C3-HFPO-DA	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	K01203		
Lab Sample ID:	FA81068-3	**Date Sampled:**	11/18/20
Matrix:	AQ - Water	**Date Received:**	11/20/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Kulis ANGB		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q8603.D	1	12/03/20 03:14	NAF	11/28/20 08:30	OP83173	S4Q118
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

EPA 537.1 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
375-85-9	Perfluoroheptanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
335-67-1	Perfluorooctanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
375-95-1	Perfluorononanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
335-76-2	Perfluorodecanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
2058-94-8	Perfluoroundecanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
307-55-1	Perfluorododecanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
72629-94-8	Perfluorotridecanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
376-06-7	Perfluorotetradecanoic acid	4.2 U	8.3	4.2	2.1	ng/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	4.2 U	8.3	4.2	2.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	4.2 U	8.3	4.2	2.1	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	4.2 U	8.3	4.2	2.1	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	8.3 U	17	8.3	4.2	ng/l	
2991-50-6	EtFOSAA	8.3 U	17	8.3	4.2	ng/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	8.3 U	17	8.3	4.2	ng/l	
919005-14-4	ADONA	8.3 U	17	8.3	4.2	ng/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	8.3 U	17	8.3	4.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	8.3 U	17	8.3	4.2	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	K01203		
Lab Sample ID:	FA81068-3	**Date Sampled:**	11/18/20
Matrix:	AQ - Water	**Date Received:**	11/20/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Kulis ANGB		

EPA 537.1 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	75%		50-150%
	13C2-PFTeDA	70%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	78%		50-150%
	d3-MeFOSAA	85%		50-150%
	d5-EtFOSAA	79%		50-150%
	13C3-HFPO-DA	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA81068

AerostarSES LLC
1006 Floyd Culler Court
Oak Ridge, TN 37830
865-481-7837

Chain of Custody Record/Analysis Request Number:

Page: 1 of 1
TAT: standard

Project Name: Site Inspection of Aqueous Film Forming Foam Areas
Job No.: M3010.1484.0006.05.0004
Installation: Former Kulis ANGB

Aerostar Project Manager: Allison Bailey, abailey@aerostar.net, 865-481-7837
Send Data to: Sharon Pennington, SPennington@aerostar.net, 865-813-2810

Sampler (s): Tim Cullen-(ASL)

Laboratory Name/Address:
SGS North America
4405 Vineland Road, Suite C-15
Orlando, FL 32811

Contact: Andrea Colby
Phone: 609-495-5321
email: andrea.colby@sgs.com

ANALYSIS

Sample Types:
N = Normal
FD = Field Duplicate
AB = Ambient Blank
FRB = Field Reagent Blank
EB = Equipment Rinsate

Matrix:
WG = Groundwater
SO = Soil
PW = Potable Water
SE = Sediment
WS = Surface Water
WQ = Field QC (AB, EB, FRB)

	Station ID	Sample ID	Date Collected	Time Collected	Sample Type	Matrix	Depth (feet)	Method 537.1, Drinking Water (full list)	Trizma					NOTES or TAT
					Preservative (HCl, HNO_3, Ice, etc.)									
1	K007	K00701	11/18/20	1025	N	WG	–	2						
2	K007	K00702	11/18/20	1025	FD	WG	–	2						
3	K012	K01203	11/18/20	1334	N+MS/SD	WG	–	6						+MS/MSD
							Total # of Containers	10						

INITIAL ASSESSMENT: SD
AREA VERIFICATION: BG

RELINQUISHED BY:		RECEIVED BY:	
Signature:	Date/Time: 11/19/20 1200	Signature: Fedex	Date/Time:
Printed Name: Tim Cullen	Firm: AerostarSESLLC (ASL)	Printed Name:	Firm:
Signature: Fedex	Date/Time:	Signature:	Date/Time: 11/20/20 930
Printed Name:	Firm:	Printed Name: Bryan Gialde	Firm:

Comments:

3.4

FA81068: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA81068 **Client:** AEROSTAR **Project:** SITE INSPECTION OF AQUEOUS FILM FORMIN

Date / Time Received: 11/20/2020 9:30:00 AM **Delivery Method:** FED EX **Airbill #'s:** 923153817753

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.2);

Cooler Temps (Corrected) °C: Cooler 1: (3.4);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑
	W	**or**	**S**	**N/A**
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: CARLOSD Date: 11/20/2020 9:30:00 A Reviewer: _____ Date: _____

FA81068: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA81068
Account: Aerostar SES LLC
Project: Former Kulis ANGB
Collected: 11/18/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP83173	EPA 537M QSM5.3 B-15						
OP83173-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	106	%	72-129
OP83173-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	113	%	72-130
OP83173-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	101	%	71-133
OP83173-BS	375-95-1	Perfluorononanoic acid	BSP	REC	97	%	69-130
OP83173-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	106	%	71-129
OP83173-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	102	%	69-133
OP83173-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	100	%	72-134
OP83173-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	107	%	65-144
OP83173-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	101	%	71-132
OP83173-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	103	%	73-130
OP83173-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	94	%	68-131
OP83173-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	103	%	65-140
OP83173-BS	2355-31-9	MeFOSAA	BSP	REC	100	%	65-136
OP83173-BS	2991-50-6	EtFOSAA	BSP	REC	105	%	61-135
OP83173-MS2	307-24-4	Perfluorohexanoic acid	MS	REC	105	%	72-129
OP83173-MS2	375-85-9	Perfluoroheptanoic acid	MS	REC	113	%	72-130
OP83173-MS2	335-67-1	Perfluorooctanoic acid	MS	REC	101	%	71-133
OP83173-MS2	375-95-1	Perfluorononanoic acid	MS	REC	97	%	69-130
OP83173-MS2	335-76-2	Perfluorodecanoic acid	MS	REC	107	%	71-129
OP83173-MS2	2058-94-8	Perfluoroundecanoic acid	MS	REC	102	%	69-133
OP83173-MS2	307-55-1	Perfluorododecanoic acid	MS	REC	98	%	72-134
OP83173-MS2	72629-94-8	Perfluorotridecanoic acid	MS	REC	103	%	65-144
OP83173-MS2	376-06-7	Perfluorotetradecanoic acid	MS	REC	101	%	71-132
OP83173-MS2	375-73-5	Perfluorobutanesulfonic acid	MS	REC	102	%	73-130
OP83173-MS2	355-46-4	Perfluorohexanesulfonic acid	MS	REC	93	%	68-131
OP83173-MS2	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	104	%	65-140
OP83173-MS2	2355-31-9	MeFOSAA	MS	REC	100	%	65-136
OP83173-MS2	2991-50-6	EtFOSAA	MS	REC	107	%	61-135
OP83173-MSD2	307-24-4	Perfluorohexanoic acid	MSD	REC	107	%	72-129
OP83173-MSD2	307-24-4	Perfluorohexanoic acid	MSD	RPD	2	%	30
OP83173-MSD2	375-85-9	Perfluoroheptanoic acid	MSD	REC	115	%	72-130
OP83173-MSD2	375-85-9	Perfluoroheptanoic acid	MSD	RPD	2	%	30
OP83173-MSD2	335-67-1	Perfluorooctanoic acid	MSD	REC	101	%	71-133
OP83173-MSD2	335-67-1	Perfluorooctanoic acid	MSD	RPD	1	%	30
OP83173-MSD2	375-95-1	Perfluorononanoic acid	MSD	REC	98	%	69-130
OP83173-MSD2	375-95-1	Perfluorononanoic acid	MSD	RPD	2	%	30
OP83173-MSD2	335-76-2	Perfluorodecanoic acid	MSD	REC	106	%	71-129
OP83173-MSD2	335-76-2	Perfluorodecanoic acid	MSD	RPD	1	%	30
OP83173-MSD2	2058-94-8	Perfluoroundecanoic acid	MSD	REC	102	%	69-133
OP83173-MSD2	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	0	%	30
OP83173-MSD2	307-55-1	Perfluorododecanoic acid	MSD	REC	100	%	72-134
OP83173-MSD2	307-55-1	Perfluorododecanoic acid	MSD	RPD	1	%	30

* Sample used for QC is not from job FA81068

QC Evaluation: DOD QSM5.x Limits

Job Number: FA81068
Account: Aerostar SES LLC
Project: Former Kulis ANGB
Collected: 11/18/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP83173-MSD2	72629-94-8	Perfluorotridecanoic acid	MSD	REC	108	%	65-144
OP83173-MSD2	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	5	%	30
OP83173-MSD2	376-06-7	Perfluorotetradecanoic acid	MSD	REC	102	%	71-132
OP83173-MSD2	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	1	%	30
OP83173-MSD2	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	103	%	73-130
OP83173-MSD2	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	1	%	30
OP83173-MSD2	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	94	%	68-131
OP83173-MSD2	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	1	%	30
OP83173-MSD2	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	103	%	65-140
OP83173-MSD2	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	1	%	30
OP83173-MSD2	2355-31-9	MeFOSAA	MSD	REC	103	%	65-136
OP83173-MSD2	2355-31-9	MeFOSAA	MSD	RPD	3	%	30
OP83173-MSD2	2991-50-6	EtFOSAA	MSD	REC	105	%	61-135
OP83173-MSD2	2991-50-6	EtFOSAA	MSD	RPD	2	%	30

* Sample used for QC is not from job FA81068

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q118-IBLK	4Q8560.D	1	12/02/20	NAF	n/a	n/a	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFHpA	103%	50-150%
	13C8-PFOA	104%	50-150%
	13C9-PFNA	104%	50-150%
	13C3-PFBS	103%	50-150%
	13C3-PFHxS	103%	50-150%
	13C8-PFOS	103%	50-150%

Method Blank Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP83173-MB	4Q8593.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	69%	50-150%
	13C5-PFPeA	78%	50-150%
	13C5-PFHxA	79%	50-150%
	13C4-PFHpA	79%	50-150%
	13C8-PFOA	78%	50-150%
	13C9-PFNA	76%	50-150%
	13C6-PFDA	73%	50-150%
	13C7-PFUnDA	69%	50-150%
	13C2-PFDoDA	67%	50-150%
	13C2-PFTeDA	60%	50-150%
	13C3-PFBS	77%	50-150%
	13C3-PFHxS	78%	50-150%
	13C8-PFOS	72%	50-150%
	13C8-FOSA	71%	50-150%

Method Blank Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP83173-MB	4Q8593.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	ID Standard Recoveries		Limits
	d3-MeFOSAA	75%	50-150%
	d5-EtFOSAA	68%	50-150%
	13C2-4:2FTS	73%	50-150%
	13C2-6:2FTS	75%	50-150%
	13C2-8:2FTS	70%	50-150%
	13C3-HFPO-DA	78%	50-150%

Blank Spike Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP83173-BS	4Q8592.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
307-24-4	Perfluorohexanoic acid	0.08	0.0846	106	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0907	113	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0805	101	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0777	97	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0848	106	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0814	102	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0797	100	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0855	107	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0808	101	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0820	103	73-130
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0750	94	68-131
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0822	103	65-140
2355-31-9	MeFOSAA	0.08	0.0797	100	65-136
2991-50-6	EtFOSAA	0.08	0.0840	105	61-135
13252-13-6	HFPO-DA (GenX)	0.08	0.0800	100	60-140
919005-14-4	ADONA	0.08	0.0784	98	60-140
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.08	0.0726	91	60-140
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.08	0.0847	106	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	70%	50-150%
	13C5-PFPeA	80%	50-150%
	13C5-PFHxA	81%	50-150%
	13C4-PFHpA	80%	50-150%
	13C8-PFOA	80%	50-150%
	13C9-PFNA	79%	50-150%
	13C6-PFDA	79%	50-150%
	13C7-PFUnDA	75%	50-150%
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	69%	50-150%
	13C3-PFBS	81%	50-150%
	13C3-PFHxS	79%	50-150%
	13C8-PFOS	80%	50-150%
	13C8-FOSA	81%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP83173-BS	4Q8592.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	ID Standard Recoveries	BSP	Limits
	d3-MeFOSAA	78%	50-150%
	d5-EtFOSAA	75%	50-150%
	13C2-4:2FTS	79%	50-150%
	13C2-6:2FTS	80%	50-150%
	13C2-8:2FTS	80%	50-150%
	13C3-HFPO-DA	81%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP83173-MS2	4Q8604.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118
OP83173-MSD2	4Q8605.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118
FA81068-3	4Q8603.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	Compound	FA81068-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
307-24-4	Perfluorohexanoic acid	0.0083	U	0.167	0.175	105	0.167	0.178	107	2	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0083	U	0.167	0.188	113	0.167	0.192	115	2	72-130/30
335-67-1	Perfluorooctanoic acid	0.0083	U	0.167	0.168	101	0.167	0.169	101	1	71-133/30
375-95-1	Perfluorononanoic acid	0.0083	U	0.167	0.161	97	0.167	0.164	98	2	69-130/30
335-76-2	Perfluorodecanoic acid	0.0083	U	0.167	0.178	107	0.167	0.176	106	1	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.167	0.170	102	0.167	0.170	102	0	69-133/30
307-55-1	Perfluorododecanoic acid	0.0083	U	0.167	0.164	98	0.167	0.166	100	1	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.167	0.172	103	0.167	0.180	108	5	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.167	0.168	101	0.167	0.170	102	1	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0083	U	0.167	0.170	102	0.167	0.172	103	1	73-130/30
355-46-4	Perfluorohexanesulfonic acid	0.0083	U	0.167	0.155	93	0.167	0.156	94	1	68-131/30
1763-23-1	Perfluorooctanesulfonic acid	0.0083	U	0.167	0.174	104	0.167	0.172	103	1	65-140/30
2355-31-9	MeFOSAA	0.017	U	0.167	0.166	100	0.167	0.171	103	3	65-136/30
2991-50-6	EtFOSAA	0.017	U	0.167	0.178	107	0.167	0.175	105	2	61-135/30
13252-13-6	HFPO-DA (GenX)	0.017	U	0.167	0.174	104	0.167	0.174	104	0	60-140/30
919005-14-4	ADONA	0.017	U	0.167	0.159	95	0.167	0.161	97	1	60-140/30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.017	U	0.167	0.153	92	0.167	0.151	91	1	60-140/30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.017	U	0.167	0.174	104	0.167	0.178	107	2	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA81068-3	Limits
	13C4-PFBA	76%	73%		50-150%
	13C5-PFPeA	76%	73%		50-150%
	13C5-PFHxA	82%	78%	81%	50-150%
	13C4-PFHpA	84%	79%	82%	50-150%
	13C8-PFOA	85%	82%	82%	50-150%
	13C9-PFNA	85%	81%	82%	50-150%
	13C6-PFDA	82%	79%	81%	50-150%
	13C7-PFUnDA	80%	77%	78%	50-150%
	13C2-PFDoDA	80%	74%	75%	50-150%
	13C2-PFTeDA	80%	71%	70%	50-150%
	13C3-PFBS	76%	74%	74%	50-150%
	13C3-PFHxS	83%	80%	80%	50-150%
	13C8-PFOS	81%	79%	78%	50-150%
	13C8-FOSA	86%	78%		50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP83173-MS2	4Q8604.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118
OP83173-MSD2	4Q8605.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118
FA81068-3	4Q8603.D	1	12/03/20	NAF	11/28/20	OP83173	S4Q118

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA81068-1, FA81068-2, FA81068-3

CAS No.	ID Standard Recoveries	MS	MSD	FA81068-3	Limits
	d3-MeFOSAA	83%	80%	85%	50-150%
	d5-EtFOSAA	82%	78%	79%	50-150%
	13C2-4:2FTS	83%	78%		50-150%
	13C2-6:2FTS	86%	83%		50-150%
	13C2-8:2FTS	83%	80%		50-150%
	13C3-HFPO-DA	80%	78%	80%	50-150%

* = Outside of Control Limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FA81068-1	4Q8601.D	79	80	81	80	79	75	74	63
FA81068-2	4Q8602.D	77	79	80	79	77	74	70	66
FA81068-3	4Q8603.D	81	82	82	82	81	78	75	70
OP83173-BS	4Q8592.D	81	80	80	79	79	75	72	69
OP83173-MB	4Q8593.D	79	79	78	76	73	69	67	60
OP83173-MS2	4Q8604.D	82	84	85	85	82	80	80	80
OP83173-MSD2	4Q8605.D	78	79	82	81	79	77	74	71
S4Q118-IBLK	4Q8560.D		103	104	104				

Isotope Dilution Standards	Recovery Limits
S1 = 13C5-PFHxA	50-150%
S2 = 13C4-PFHpA	50-150%
S3 = 13C8-PFOA	50-150%
S4 = 13C9-PFNA	50-150%
S5 = 13C6-PFDA	50-150%
S6 = 13C7-PFUnDA	50-150%
S7 = 13C2-PFDoDA	50-150%
S8 = 13C2-PFTeDA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14
FA81068-1	4Q8601.D	74	79	77	82	79	77
FA81068-2	4Q8602.D	72	78	75	79	72	74
FA81068-3	4Q8603.D	74	80	78	85	79	80
OP83173-BS	4Q8592.D	81	79	80	78	75	81
OP83173-MB	4Q8593.D	77	78	72	75	68	78
OP83173-MS2	4Q8604.D	76	83	81	83	82	80
OP83173-MSD2	4Q8605.D	74	80	79	80	78	78
S4Q118-IBLK	4Q8560.D	103	103	103			

Isotope Dilution Standards	Recovery Limits
S9 = 13C3-PFBS	50-150%
S10 = 13C3-PFHxS	50-150%
S11 = 13C8-PFOS	50-150%
S12 = d3-MeFOSAA	50-150%
S13 = d5-EtFOSAA	50-150%
S14 = 13C3-HFPO-DA	50-150%

Initial Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample: S4Q118-ICC118
Lab FileID: 4Q8557.D

Initial Calibration Report

Method Path	D:\MassHunter\methods
Method File	ID_120220_S4Q118.quantmethod.xml
Batch Name	D:\MassHunter\Data\1202_ID_S4Q118\QuantResults\s4q118.batch.bin
Last Calib Update	12/3/2020 6:31:26 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d	12/2/2020 2:06:43 PM	12/3/2020 6:31:26 AM
2	D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d	12/2/2020 2:22:11 PM	12/3/2020 6:31:26 AM
3	D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d	12/2/2020 2:38:06 PM	12/3/2020 6:31:26 AM
4	D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d	12/2/2020 2:53:31 PM	12/3/2020 6:31:26 AM
5	D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d	12/2/2020 3:08:57 PM	12/3/2020 6:31:26 AM
6	D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d	12/2/2020 3:24:23 PM	12/3/2020 6:31:26 AM
7	D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d	12/2/2020 3:39:48 PM	12/3/2020 6:31:26 AM
8	D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d	12/2/2020 3:55:15 PM	12/3/2020 6:31:26 AM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	3811	3995	3904	3860	3903	3666	3667	3604	3801	3.685
S 13C5-PFPeA	Linear	7051	7281	7112	7055	7137	6733	6711	6630	6964	3.423
S 13C3-PFBS	Linear	591.1	615.7	598.2	597.9	604.0	563.6	559.6	543.4	584.2	4.344
S 13C2-4:2FTS	Linear	3635	3760	3670	3650	3746	3632	3928	4364	3798	6.554
S 13C5-PFHxA	Linear	10315	10633	10391	10319	10412	9838	9778	9671	10170	3.481
S 13C3-HFPO-DA	Linear	862.6	877.7	873.4	840.2	865.7	798.9	799.7	814.6	841.6	3.928
S 13C4-PFHpA	Linear	10430	10848	10692	10531	10609	10017	9957	9773	10357	3.774
S 13C3-PFHxS	Linear	648.3	671.5	655.0	641.1	659.2	615.0	612.2	599.7	637.8	4.032
S 13C2-6:2FTS	Linear	6295	6472	6340	6315	6435	6136	6479	6797	6409	3.012
S 13C8-PFOA	Linear	15235	15744	15419	15151	15339	14435	14155	13515	14874	5.103
S 13C8-PFOS	Linear	891.2	942.9	939.7	925.1	923.4	882.4	870.1	851.1	903.2	3.784
S 13C9-PFNA	Linear	16057	16512	16238	15891	16219	15281	14915	14219	15666	5.037
S 13C8-FOSA	Linear	2583	2801	2757	2702	2717	2514	2352	2179	2576	8.434
S d3-MeFOSAA	Linear	6066	5790	5754	5619	5535	5175	4699	3954	5324	13.039
S 13C6-PFDA	Linear	10183	10728	10429	10189	10312	9616	9240	8590	9911	7.166
S 13C2-8:2FTS	Linear	5083	5161	5160	5101	5211	5043	5271	5624	5207	3.528
S d5-EtFOSAA	Linear	3175	3110	3039	2983	3081	2819	2771	2708	2961	5.837
S 13C7-PFUnDA	Linear	13681	14257	13986	13687	13832	13125	12697	12159	13428	5.288
S 13C2-PFDoDA	Linear	16034	16387	16274	15994	16209	15062	14862	14488	15664	4.720
S 13C2-PFTeDA	Linear	18949	18455	18627	18714	19021	17882	17710	17345	18338	3.366
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.3595	0.3395	0.3587	0.3476	0.3505	0.3606	0.3545	0.3682	0.3549	2.509
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	1.0250	0.8894	0.9053	0.8724	0.8632	0.8868	0.8811	0.9015	0.9031	5.669
I M5-PFHxA				---------- ISTD ----------							
T PFHxA	Linear	0.9593	0.8486	0.8847	0.8742	0.8700	0.9005	0.8868	0.9005	0.8906	3.656
I M4-PFHpA				---------- ISTD ----------							

Generated at 6:31 AM on 12/3/2020

Initial Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample: S4Q118-ICC118
Lab FileID: 4Q8557.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFHpA	Linear	1.2999	1.1248	1.1615	1.1401	1.1485	1.1885	1.1652	1.1887	1.1771	4.615
I M8-PFOA				---------- ISTD ----------							
T ADONA	Linear	1.1526	1.0227	1.0886	1.0709	1.0641	1.1065	1.1063	1.1712	1.0979	4.372
T PFOA	Linear	1.2554	1.0935	1.1312	1.1229	1.1113	1.1506	1.1280	1.1533	1.1433	4.314
I M9-PFNA				---------- ISTD ----------							
T PFNA	Linear	1.0262	0.9010	0.9333	0.9324	0.9168	0.9450	0.9389	0.9762	0.9462	4.117
I M6-PFDA				---------- ISTD ----------							
T 9Cl-PF3ONS	Linear	0.8113	0.6856	0.7177	0.7007	0.7205	0.7452	0.7632	0.8283	0.7466	6.885
T PFDA	Linear	1.5935	1.3364	1.4348	1.4168	1.4173	1.4535	1.4256	1.4660	1.4430	4.994
I M7-PFUnDA				---------- ISTD ----------							
T PFDS	Linear	0.1059	0.0886	0.0927	0.0885	0.0926	0.0931	0.0944	0.0983	0.0943	5.982
T PFUnDA	Linear	1.1521	0.9816	1.0079	1.0018	1.0206	1.0398	1.0227	1.0556	1.0353	5.061
I M2-PFDoDA				---------- ISTD ----------							
T 11Cl-PF3OUdS	Linear	0.5604	0.4634	0.4816	0.4764	0.4831	0.5015	0.4987	0.5114	0.4971	6.005
T PFDoDA	Linear	1.0698	0.9138	0.9454	0.9271	0.9265	0.9677	0.9489	0.9779	0.9596	5.151
I M2-PFTeDA				---------- ISTD ----------							
T PFTrDA	Linear	0.9622	0.8393	0.8639	0.8311	0.8284	0.8527	0.8417	0.8638	0.8604	5.034
T PFTeDA	Linear	1.2069	0.9788	0.9790	0.9637	0.9504	0.9777	0.9490	0.9691	0.9968	8.601
I M8-FOSA				---------- ISTD ----------							
T FOSA	Linear	1.0560	0.9427	0.9702	0.9230	0.9137	0.9578	0.9541	0.9823	0.9625	4.584
I M3-PFBS				---------- ISTD ----------							
T PFBS	Linear	2.9028	2.5384	2.6655	2.6398	2.6386	2.6924	2.6528	2.7329	2.6829	3.906
T PFPeS	Linear	2.2229	1.9466	2.1024	1.9750	1.9915	2.1152	2.1021	2.1828	2.0798	4.804
I M3-PFHxS				---------- ISTD ----------							
T PFHxS	Linear	2.6572	2.2976	2.4996	2.4378	2.3518	2.4693	2.4455	2.5377	2.4620	4.485
T PFHpS	Linear	2.2078	2.0586	2.1565	2.1775	2.0491	2.1589	2.0935	2.1377	2.1299	2.684
I M8-PFOS				---------- ISTD ----------							
T PFOS	Linear	2.1973	1.9348	1.8441	1.7943	1.8303	1.8738	1.8622	1.9259	1.9078	6.601
T PFNS	Linear	1.6715	1.3126	1.4367	1.3204	1.3739	1.4102	1.4023	1.3879	1.4144	7.941
I M2-4:2FTS				---------- ISTD ----------							
T 4:2FTS	Avg RF	1.0606	1.0057	1.0834	1.0160	1.0218	1.0189	0.9207	0.8417	0.9961	7.866
I M2-6:2FTS				---------- ISTD ----------							
T 6:2FTS	Avg RF	1.1401	1.0110	1.0378	1.0126	0.9972	1.0204	0.9122	0.8362	0.9959	8.996
I M2-8:2FTS				---------- ISTD ----------							
T 8:2FTS	Avg RF	1.2274	1.1252	1.0667	1.0573	1.0718	1.0594	0.9507	0.8678	1.0533	10.215

Generated at 6:31 AM on 12/3/2020

Initial Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample: S4Q118-ICC118
Lab FileID: 4Q8557.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M3-MeFOSAA				---------- ISTD ----------							
T MeFOSAA	Linear	0.9546	0.8495	0.8587	0.8524	0.8642	0.8790	0.8768	0.9252	0.8826	4.274
I M3-HFPO-DA				---------- ISTD ----------							
T HFPO-DA	Linear	2.4814	2.1841	2.2524	2.2455	2.1696	2.2856	2.2212	2.2485	2.2610	4.279
I M5-EtFOSAA				---------- ISTD ----------							
T EtFOSAA	Linear	1.6959	1.3049	1.3877	1.3973	1.3744	1.4260	1.4221	1.4067	1.4269	8.072

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 6:31 AM on 12/3/2020

Initial Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample: S4Q118-ICC118
Lab FileID: 4Q8557.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T PFBA	Linear	y = 0.365159 * x	0.999642
S 13C4-PFBA	Linear	y = 3801.170990 * x	0.000000
S 13C5-PFPeA	Linear	y = 6963.856277 * x	0.000000
T PFPeA	Linear	y = 0.896832 * x	0.999855
S 13C3-PFBS	Linear	y = 584.170224 * x	0.000000
T PFBS	Linear	y = 2.715342 * x	0.999783
S 13C2-4:2FTS	Linear	y = 3798.032862 * x	0.000000
S 13C5-PFHxA	Linear	y = 10169.749748 * x	0.000000
T PFHxA	Linear	y = 0.897596 * x	0.999932
T PFPeS	Linear	y = 2.163327 * x	0.999559
T HFPO-DA	Linear	y = 2.243752 * x	0.999936
S 13C3-HFPO-DA	Linear	y = 841.593736 * x	0.000000
S 13C4-PFHpA	Linear	y = 10356.977357 * x	0.000000
T PFHpA	Linear	y = 1.183733 * x	0.999893
S 13C3-PFHxS	Linear	y = 637.754883 * x	0.000000
T PFHxS	Linear	y = 2.516237 * x	0.999620
T ADONA	Linear	y = 1.155735 * x	0.999098
S 13C2-6:2FTS	Linear	y = 6408.662169 * x	0.000000
S 13C8-PFOA	Linear	y = 14874.099020 * x	0.000000
T PFHpS	Linear	y = 2.129238 * x	0.999873
T PFOA	Linear	y = 1.147974 * x	0.999873
S 13C8-PFOS	Linear	y = 903.221858 * x	0.000000
T PFOS	Linear	y = 1.911046 * x	0.999692
S 13C9-PFNA	Linear	y = 15666.440713 * x	0.000000
T PFNA	Linear	y = 0.967512 * x	0.999593
S 13C8-FOSA	Linear	y = 2575.622807 * x	0.000000
T FOSA	Linear	y = 0.975490 * x	0.999734
T 9Cl-PF3ONS	Linear	y = 0.812159 * x	0.998007
T PFNS	Linear	y = 1.391121 * x	0.999955
S d3-MeFOSAA	Linear	y = 5324.079403 * x	0.000000
T MeFOSAA	Linear	y = 0.913849 * x	0.999237
S 13C6-PFDA	Linear	y = 9910.748994 * x	0.000000
T PFDA	Linear	y = 1.457338 * x	0.999810
S 13C2-8:2FTS	Linear	y = 5206.717567 * x	0.000000
S d5-EtFOSAA	Linear	y = 2960.802521 * x	0.000000
T EtFOSAA	Linear	y = 1.409965 * x	0.999957
T PFDS	Linear	y = 0.097332 * x	0.999492
S 13C7-PFUnDA	Linear	y = 13428.004917 * x	0.000000
T PFUnDA	Linear	y = 1.048392 * x	0.999754
T 11Cl-PF3OUdS	Linear	y = 0.508365 * x	0.999804
S 13C2-PFDoDA	Linear	y = 15663.696304 * x	0.000000
T PFDoDA	Linear	y = 0.971507 * x	0.999761
T PFTrDA	Linear	y = 0.858888 * x	0.999825

Generated at 6:31 AM on 12/3/2020

Initial Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Sample: S4Q118-ICC118
Lab FileID: 4Q8557.D

Initial Calibration Report

T PFTeDA	Linear	y = 0.965395 * x	0.999887
S 13C2-PFTeDA	Linear	y = 18337.801320 * x	0.000000

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-ICV118
Lab FileID: 4Q8561.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8561
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.263	-3.7	96.3
13C2-6:2FTS	20.000	19.203	-4.0	96.0
13C2-8:2FTS	20.000	19.308	-3.5	96.5
13C2-PFDoDA	20.000	19.334	-3.3	96.7
13C2-PFTeDA	20.000	19.699	-1.5	98.5
13C3-PFBS	20.000	19.331	-3.3	96.7
13C3-PFHxS	20.000	19.265	-3.7	96.3
13C4-PFBA	20.000	19.223	-3.9	96.1
13C4-PFHpA	20.000	19.384	-3.1	96.9
13C5-PFHxA	20.000	19.169	-4.2	95.8
13C5-PFPeA	20.000	19.259	-3.7	96.3
13C6-PFDA	20.000	19.437	-2.8	97.2
13C7-PFUnDA	20.000	19.357	-3.2	96.8
13C8-FOSA	20.000	19.154	-4.2	95.8
13C8-PFOA	20.000	19.164	-4.2	95.8
13C8-PFOS	20.000	19.420	-2.9	97.1
13C9-PFNA	20.000	19.665	-1.7	98.3
4:2FTS	20.000	20.859	4.3	104.3
6:2FTS	20.000	21.253	6.3	106.3
8:2FTS	20.000	20.988	4.9	104.9
d3-MeFOSAA	20.000	19.110	-4.5	95.5
EtFOSAA	20.000	22.598	13.0	113.0
FOSA	20.000	21.577	7.9	107.9
MeFOSAA	20.000	20.605	3.0	103.0
PFBA	20.000	21.149	5.7	105.7
PFBS	20.000	18.899	-5.5	94.5
PFDA	20.000	20.443	2.2	102.2
PFDoDA	20.000	21.356	6.8	106.8
PFDS	20.000	20.094	0.5	100.5
PFHpA	20.000	22.345	11.7	111.7
PFHpS	20.000	21.333	6.7	106.7
PFHxA	20.000	21.391	7.0	107.0
PFHxS	20.000	17.356	-13.2	86.8
PFNA	20.000	18.776	-6.1	93.9
PFNS	20.000	20.826	4.1	104.1
PFOA	20.000	22.237	11.2	111.2
PFOS	20.000	21.957	9.8	109.8

Initial Calibration Verification

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-ICV118
Lab FileID: 4Q8561.D

PFPeA	20.000	21.275	6.4	106.4
PFPeS	20.000	18.471	-7.6	92.4
PFTeDA	20.000	19.709	-1.5	98.5
PFTrDA	20.000	23.656	18.3	118.3
PFUnDA	20.000	22.601	13.0	113.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.939	4.7	104.7
13C3-HFPO-DA	20.000	18.632	-6.8	93.2
9Cl-PF3ONS	20.000	18.511	-7.4	92.6
ADONA	20.000	20.158	0.8	100.8
HFPO-DA	20.000	21.559	7.8	107.8
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.858	-5.7	94.3

CC Criteria: +/- 50%

Initial Calibration Verification

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-ICV118
Lab FileID: 4Q8562.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8562
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.271	-13.6	86.4
13C2-6:2FTS	20.000	17.854	-10.7	89.3
13C2-8:2FTS	20.000	17.743	-11.3	88.7
13C2-PFDoDA	20.000	18.676	-6.6	93.4
13C2-PFTeDA	20.000	19.190	-4.1	95.9
13C3-PFBS	20.000	18.711	-6.4	93.6
13C3-PFHxS	20.000	18.339	-8.3	91.7
13C4-PFBA	20.000	18.507	-7.5	92.5
13C4-PFHpA	20.000	18.673	-6.6	93.4
13C5-PFHxA	20.000	18.548	-7.3	92.7
13C5-PFPeA	20.000	18.482	-7.6	92.4
13C6-PFDA	20.000	19.253	-3.7	96.3
13C7-PFUnDA	20.000	18.818	-5.9	94.1
13C8-FOSA	20.000	19.709	-1.5	98.5
13C8-PFOA	20.000	18.603	-7.0	93.0
13C8-PFOS	20.000	18.653	-6.7	93.3
13C9-PFNA	20.000	18.821	-5.9	94.1
4:2FTS	20.000	0.000	# -100.0	0.0
6:2FTS	20.000	0.000	# -100.0	0.0
8:2FTS	20.000	0.000	# -100.0	0.0
d3-MeFOSAA	20.000	19.678	-1.6	98.4
EtFOSAA	20.000	0.000	# -100.0	0.0
FOSA	20.000	0.000	# -100.0	0.0
MeFOSAA	20.000	0.000	# -100.0	0.0
PFBA	20.000	0.000	# -100.0	0.0
PFBS	20.000	0.000	# -100.0	0.0
PFDA	20.000	0.000	# -100.0	0.0
PFDoDA	20.000	0.000	# -100.0	0.0
PFDS	20.000	0.000	# -100.0	0.0
PFHpA	20.000	0.000	# -100.0	0.0
PFHpS	20.000	0.000	# -100.0	0.0
PFHxA	20.000	0.000	# -100.0	0.0
PFHxS	20.000	0.000	# -100.0	0.0
PFNA	20.000	0.000	# -100.0	0.0
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	19.081	-4.6	95.4
PFOS	20.000	0.000	# -100.0	0.0

Initial Calibration Verification

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-ICV118
Lab FileID: 4Q8562.D

PFPeA	20.000	0.000	# -100.0	0.0
PFPeS	20.000	0.000	# -100.0	0.0
PFTeDA	20.000	0.000	# -100.0	0.0
PFTrDA	20.000	0.000	# -100.0	0.0
PFUnDA	20.000	0.000	# -100.0	0.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	20.000	18.268	-8.7	91.3
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.770	-6.2	93.8

CC Criteria: +/- 50%

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8573.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8573
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.959	-5.2	94.8
13C2-6:2FTS	20.000	19.211	-3.9	96.1
13C2-8:2FTS	20.000	19.223	-3.9	96.1
13C2-PFDoDA	20.000	19.402	-3.0	97.0
13C2-PFTeDA	20.000	19.336	-3.3	96.7
13C3-PFBS	20.000	19.362	-3.2	96.8
13C3-PFHxS	20.000	18.946	-5.3	94.7
13C4-PFBA	20.000	18.323	-8.4	91.6
13C4-PFHpA	20.000	19.281	-3.6	96.4
13C5-PFHxA	20.000	19.160	-4.2	95.8
13C5-PFPeA	20.000	18.988	-5.1	94.9
13C6-PFDA	20.000	19.299	-3.5	96.5
13C7-PFUnDA	20.000	19.319	-3.4	96.6
13C8-FOSA	20.000	19.301	-3.5	96.5
13C8-PFOA	20.000	19.074	-4.6	95.4
13C8-PFOS	20.000	19.272	-3.6	96.4
13C9-PFNA	20.000	19.176	-4.1	95.9
4:2FTS	20.000	20.409	2.0	102.0
6:2FTS	20.000	20.272	1.4	101.4
8:2FTS	20.000	20.400	2.0	102.0
d3-MeFOSAA	20.000	18.467	-7.7	92.3
EtFOSAA	20.000	20.570	2.8	102.8
FOSA	20.000	19.724	-1.4	98.6
MeFOSAA	20.000	19.796	-1.0	99.0
PFBA	20.000	20.122	0.6	100.6
PFBS	20.000	19.690	-1.6	98.4
PFDA	20.000	19.898	-0.5	99.5
PFDoDA	20.000	19.841	-0.8	99.2
PFDS	20.000	19.740	-1.3	98.7
PFHpA	20.000	19.876	-0.6	99.4
PFHpS	20.000	20.605	3.0	103.0
PFHxA	20.000	20.048	0.2	100.2
PFHxS	20.000	19.839	-0.8	99.2
PFNA	20.000	19.838	-0.8	99.2
PFNS	20.000	20.465	2.3	102.3
PFOA	20.000	20.168	0.8	100.8
PFOS	20.000	19.568	-2.2	97.8

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8573.D

PFPeA	20.000	19.878	-0.6	99.4
PFPeS	20.000	19.091	-4.5	95.5
PFTeDA	20.000	20.240	1.2	101.2
PFTrDA	20.000	20.303	1.5	101.5
PFUnDA	20.000	20.086	0.4	100.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.534	-2.3	97.7
13C3-HFPO-DA	20.000	18.470	-7.7	92.3
9Cl-PF3ONS	20.000	18.421	-7.9	92.1
ADONA	20.000	19.311	-3.4	96.6
HFPO-DA	20.000	20.287	1.4	101.4
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.769	-6.2	93.8

CC Criteria: +/- 50%

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8589.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8589
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.854	-5.7	94.3
13C2-6:2FTS	20.000	18.883	-5.6	94.4
13C2-8:2FTS	20.000	19.147	-4.3	95.7
13C2-PFDoDA	20.000	18.968	-5.2	94.8
13C2-PFTeDA	20.000	18.906	-5.5	94.5
13C3-PFBS	20.000	19.092	-4.5	95.5
13C3-PFHxS	20.000	18.697	-6.5	93.5
13C4-PFBA	20.000	18.631	-6.8	93.2
13C4-PFHpA	20.000	19.241	-3.8	96.2
13C5-PFHxA	20.000	18.986	-5.1	94.9
13C5-PFPeA	20.000	18.991	-5.0	95.0
13C6-PFDA	20.000	18.789	-6.1	93.9
13C7-PFUnDA	20.000	18.827	-5.9	94.1
13C8-FOSA	20.000	19.198	-4.0	96.0
13C8-PFOA	20.000	19.042	-4.8	95.2
13C8-PFOS	20.000	19.130	-4.4	95.6
13C9-PFNA	20.000	18.846	-5.8	94.2
4:2FTS	20.000	20.507	2.5	102.5
6:2FTS	20.000	20.282	1.4	101.4
8:2FTS	20.000	20.268	1.3	101.3
d3-MeFOSAA	20.000	18.666	-6.7	93.3
EtFOSAA	20.000	20.452	2.3	102.3
FOSA	20.000	19.889	-0.6	99.4
MeFOSAA	20.000	19.643	-1.8	98.2
PFBA	20.000	19.665	-1.7	98.3
PFBS	20.000	19.948	-0.3	99.7
PFDA	20.000	20.019	0.1	100.1
PFDoDA	20.000	19.842	-0.8	99.2
PFDS	20.000	19.596	-2.0	98.0
PFHpA	20.000	19.785	-1.1	98.9
PFHpS	20.000	20.509	2.5	102.5
PFHxA	20.000	20.193	1.0	101.0
PFHxS	20.000	19.814	-0.9	99.1
PFNA	20.000	19.977	-0.1	99.9
PFNS	20.000	20.510	2.6	102.6
PFOA	20.000	20.079	0.4	100.4
PFOS	20.000	19.663	-1.7	98.3

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8589.D

PFPeA	20.000	20.005	0.0	100.0
PFPeS	20.000	19.328	-3.4	96.6
PFTeDA	20.000	20.386	1.9	101.9
PFTrDA	20.000	20.277	1.4	101.4
PFUnDA	20.000	19.823	-0.9	99.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.907	-0.5	99.5
13C3-HFPO-DA	20.000	18.747	-6.3	93.7
9Cl-PF3ONS	20.000	18.568	-7.2	92.8
ADONA	20.000	19.306	-3.5	96.5
HFPO-DA	20.000	19.996	0.0	100.0
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.101	-4.5	95.5

CC Criteria: +/- 50%

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8591.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8591
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.375	-3.1	96.9
13C2-6:2FTS	20.000	19.726	-1.4	98.6
13C2-8:2FTS	20.000	19.675	-1.6	98.4
13C2-PFDoDA	20.000	20.165	0.8	100.8
13C2-PFTeDA	20.000	20.481	2.4	102.4
13C3-PFBS	20.000	20.680	3.4	103.4
13C3-PFHxS	20.000	20.539	2.7	102.7
13C4-PFBA	20.000	20.365	1.8	101.8
13C4-PFHpA	20.000	20.691	3.5	103.5
13C5-PFHxA	20.000	20.606	3.0	103.0
13C5-PFPeA	20.000	20.403	2.0	102.0
13C6-PFDA	20.000	20.805	4.0	104.0
13C7-PFUnDA	20.000	20.564	2.8	102.8
13C8-FOSA	20.000	21.781	8.9	108.9
13C8-PFOA	20.000	20.743	3.7	103.7
13C8-PFOS	20.000	20.636	3.2	103.2
13C9-PFNA	20.000	20.694	3.5	103.5
4:2FTS	1.000	1.009	0.9	100.9
6:2FTS	1.000	1.033	3.3	103.3
8:2FTS	1.000	0.991	-0.9	99.1
d3-MeFOSAA	20.000	21.425	7.1	107.1
EtFOSAA	1.000	0.928	-7.2	92.8
FOSA	1.000	0.927	-7.3	92.7
MeFOSAA	1.000	0.912	-8.8	91.2
PFBA	1.000	0.935	-6.5	93.5
PFBS	1.000	0.925	-7.5	92.5
PFDA	1.000	0.920	-8.0	92.0
PFDoDA	1.000	0.937	-6.3	93.7
PFDS	1.000	0.913	-8.7	91.3
PFHpA	1.000	0.956	-4.4	95.6
PFHpS	1.000	0.907	-9.3	90.7
PFHxA	1.000	0.955	-4.5	95.5
PFHxS	1.000	0.929	-7.1	92.9
PFNA	1.000	0.913	-8.7	91.3
PFNS	1.000	1.024	2.4	102.4
PFOA	1.000	0.949	-5.1	94.9
PFOS	1.000	0.943	-5.7	94.3

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8591.D

PFPeA	1.000	1.003	0.3	100.3
PFPeS	1.000	0.930	-7.0	93.0
PFTeDA	1.000	1.019	1.9	101.9
PFTrDA	1.000	0.935	-6.5	93.5
PFUnDA	1.000	0.922	-7.8	92.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.919	-8.1	91.9
13C3-HFPO-DA	20.000	19.770	-1.2	98.8
9Cl-PF3ONS	1.000	0.860	-14.0	86.0
ADONA	1.000	0.899	-10.1	89.9
HFPO-DA	1.000	1.051	5.1	105.1
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.513	2.6	102.6

CC Criteria: +/- 50%

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8599.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8599
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.859	-5.7	94.3
13C2-6:2FTS	20.000	19.117	-4.4	95.6
13C2-8:2FTS	20.000	18.982	-5.1	94.9
13C2-PFDoDA	20.000	18.791	-6.0	94.0
13C2-PFTeDA	20.000	18.910	-5.5	94.5
13C3-PFBS	20.000	19.118	-4.4	95.6
13C3-PFHxS	20.000	19.354	-3.2	96.8
13C4-PFBA	20.000	19.101	-4.5	95.5
13C4-PFHpA	20.000	19.086	-4.6	95.4
13C5-PFHxA	20.000	19.156	-4.2	95.8
13C5-PFPeA	20.000	19.046	-4.8	95.2
13C6-PFDA	20.000	18.744	-6.3	93.7
13C7-PFUnDA	20.000	18.735	-6.3	93.7
13C8-FOSA	20.000	19.143	-4.3	95.7
13C8-PFOA	20.000	19.058	-4.7	95.3
13C8-PFOS	20.000	19.107	-4.5	95.5
13C9-PFNA	20.000	19.228	-3.9	96.1
4:2FTS	20.000	20.541	2.7	102.7
6:2FTS	20.000	20.117	0.6	100.6
8:2FTS	20.000	20.208	1.0	101.0
d3-MeFOSAA	20.000	19.317	-3.4	96.6
EtFOSAA	20.000	20.692	3.5	103.5
FOSA	20.000	19.943	-0.3	99.7
MeFOSAA	20.000	19.333	-3.3	96.7
PFBA	20.000	19.494	-2.5	97.5
PFBS	20.000	19.913	-0.4	99.6
PFDA	20.000	20.360	1.8	101.8
PFDoDA	20.000	19.857	-0.7	99.3
PFDS	20.000	19.854	-0.7	99.3
PFHpA	20.000	20.155	0.8	100.8
PFHpS	20.000	19.778	-1.1	98.9
PFHxA	20.000	20.106	0.5	100.5
PFHxS	20.000	19.371	-3.1	96.9
PFNA	20.000	19.624	-1.9	98.1
PFNS	20.000	20.403	2.0	102.0
PFOA	20.000	20.093	0.5	100.5
PFOS	20.000	20.016	0.1	100.1

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8599.D

PFPeA	20.000	19.875	-0.6	99.4
PFPeS	20.000	19.593	-2.0	98.0
PFTeDA	20.000	20.312	1.6	101.6
PFTrDA	20.000	19.975	-0.1	99.9
PFUnDA	20.000	19.849	-0.8	99.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.983	-0.1	99.9
13C3-HFPO-DA	20.000	18.782	-6.1	93.9
9Cl-PF3ONS	20.000	18.521	-7.4	92.6
ADONA	20.000	19.257	-3.7	96.3
HFPO-DA	20.000	20.100	0.5	100.5
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.929	-5.4	94.6

CC Criteria: +/- 50%

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8611.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\1202_ID_S4Q118\s4q118.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\1202_ID_S4Q118\4Q8552.d
2:D:\MassHunter\Data\1202_ID_S4Q118\4Q8553.d
3:D:\MassHunter\Data\1202_ID_S4Q118\4Q8554.d
4:D:\MassHunter\Data\1202_ID_S4Q118\4Q8555.d
5:D:\MassHunter\Data\1202_ID_S4Q118\4Q8556.d
6:D:\MassHunter\Data\1202_ID_S4Q118\4Q8557.d
7:D:\MassHunter\Data\1202_ID_S4Q118\4Q8558.d
8:D:\MassHunter\Data\1202_ID_S4Q118\4Q8559.d

Data File: 4Q8611
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.669	-6.7	93.3
13C2-6:2FTS	20.000	19.039	-4.8	95.2
13C2-8:2FTS	20.000	18.767	-6.2	93.8
13C2-PFDoDA	20.000	18.493	-7.5	92.5
13C2-PFTeDA	20.000	18.644	-6.8	93.2
13C3-PFBS	20.000	18.723	-6.4	93.6
13C3-PFHxS	20.000	18.437	-7.8	92.2
13C4-PFBA	20.000	18.730	-6.4	93.6
13C4-PFHpA	20.000	18.820	-5.9	94.1
13C5-PFHxA	20.000	18.727	-6.4	93.6
13C5-PFPeA	20.000	18.736	-6.3	93.7
13C6-PFDA	20.000	18.739	-6.3	93.7
13C7-PFUnDA	20.000	18.778	-6.1	93.9
13C8-FOSA	20.000	19.315	-3.4	96.6
13C8-PFOA	20.000	18.923	-5.4	94.6
13C8-PFOS	20.000	19.223	-3.9	96.1
13C9-PFNA	20.000	18.724	-6.4	93.6
4:2FTS	20.000	20.241	1.2	101.2
6:2FTS	20.000	20.073	0.4	100.4
8:2FTS	20.000	20.426	2.1	102.1
d3-MeFOSAA	20.000	19.168	-4.2	95.8
EtFOSAA	20.000	20.625	3.1	103.1
FOSA	20.000	19.534	-2.3	97.7
MeFOSAA	20.000	19.380	-3.1	96.9
PFBA	20.000	19.436	-2.8	97.2
PFBS	20.000	19.982	-0.1	99.9
PFDA	20.000	20.069	0.3	100.3
PFDoDA	20.000	19.644	-1.8	98.2
PFDS	20.000	19.184	-4.1	95.9
PFHpA	20.000	19.996	0.0	100.0
PFHpS	20.000	20.721	3.6	103.6
PFHxA	20.000	20.138	0.7	100.7
PFHxS	20.000	19.847	-0.8	99.2
PFNA	20.000	19.745	-1.3	98.7
PFNS	20.000	20.095	0.5	100.5
PFOA	20.000	19.857	-0.7	99.3
PFOS	20.000	19.343	-3.3	96.7

Continuing Calibration Summary

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB
Sample: S4Q118-CC118
Lab FileID: 4Q8611.D

PFPeA	20.000	19.951	-0.2	99.8
PFPeS	20.000	19.340	-3.3	96.7
PFTeDA	20.000	20.177	0.9	100.9
PFTrDA	20.000	19.793	-1.0	99.0
PFUnDA	20.000	19.513	-2.4	97.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.075	0.4	100.4
13C3-HFPO-DA	20.000	18.388	-8.1	91.9
9Cl-PF3ONS	20.000	18.644	-6.8	93.2
ADONA	20.000	19.027	-4.9	95.1
HFPO-DA	20.000	20.298	1.5	101.5
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.891	-5.5	94.5

CC Criteria: +/- 50%

Run Sequence Report

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Run ID: S4Q118 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q118-IC118	4Q8551.D	12/02/20 13:51	n/a	Mass Calibration Verification
S4Q118-IC118	4Q8552.D	12/02/20 14:06	n/a	Initial cal 0.5
S4Q118-IC118	4Q8553.D	12/02/20 14:22	n/a	Initial cal 1.0
S4Q118-IC118	4Q8554.D	12/02/20 14:38	n/a	Initial cal 2.0
S4Q118-IC118	4Q8555.D	12/02/20 14:53	n/a	Initial cal 5.0
S4Q118-IC118	4Q8556.D	12/02/20 15:08	n/a	Initial cal 10
S4Q118-ICC118	4Q8557.D	12/02/20 15:24	n/a	Initial cal 20
S4Q118-IC118	4Q8558.D	12/02/20 15:39	n/a	Initial cal 50
S4Q118-IC118	4Q8559.D	12/02/20 15:55	n/a	Initial cal 100
S4Q118-IBLK	4Q8560.D	12/02/20 16:10	n/a	Method Blank
S4Q118-IBLK	4Q8560.D	12/02/20 16:10	n/a	Method Blank
S4Q118-ICV118	4Q8561.D	12/02/20 16:26	n/a	Initial cal verification 20
S4Q118-ICV118	4Q8562.D	12/02/20 16:41	n/a	Initial cal verification 20
OP83158-BS	4Q8563.D	12/02/20 16:57	OP83158	Blank Spike
OP83158-MB	4Q8564.D	12/02/20 17:12	OP83158	Method Blank
FA81025-1	4Q8565.D	12/02/20 17:27	OP83158	(used for QC only; not part of job FA81068)
OP83158-MS	4Q8566.D	12/02/20 17:43	OP83158	Matrix Spike
ZZZZZZ	4Q8567.D	12/02/20 17:58	OP83158	(unrelated sample)
ZZZZZZ	4Q8568.D	12/02/20 18:14	OP83158	(unrelated sample)
ZZZZZZ	4Q8569.D	12/02/20 18:29	OP83158	(unrelated sample)
ZZZZZZ	4Q8570.D	12/02/20 18:45	OP83158	(unrelated sample)
ZZZZZZ	4Q8571.D	12/02/20 19:00	OP83158	(unrelated sample)
ZZZZZZ	4Q8572.D	12/02/20 19:15	OP83158	(unrelated sample)
S4Q118-CC118	4Q8573.D	12/02/20 19:31	n/a	Continuing cal 20
ZZZZZZ	4Q8575.D	12/02/20 20:02	OP83158	(unrelated sample)
ZZZZZZ	4Q8576.D	12/02/20 20:17	OP83158	(unrelated sample)
FA81025-10	4Q8577.D	12/02/20 20:33	OP83158	(used for QC only; not part of job FA81068)
OP83158-DUP	4Q8578.D	12/02/20 20:48	OP83158	Duplicate
ZZZZZZ	4Q8579.D	12/02/20 21:04	OP83158	(unrelated sample)
ZZZZZZ	4Q8580.D	12/02/20 21:19	OP83158	(unrelated sample)
ZZZZZZ	4Q8581.D	12/02/20 21:34	OP83158	(unrelated sample)
ZZZZZZ	4Q8582.D	12/02/20 21:50	OP83158	(unrelated sample)
ZZZZZZ	4Q8583.D	12/02/20 22:05	OP83158	(unrelated sample)
ZZZZZZ	4Q8584.D	12/02/20 22:21	OP83158	(unrelated sample)
S4Q118-CC118	4Q8585.D	12/02/20 22:36	n/a	Continuing cal 20
ZZZZZZ	4Q8587.D	12/02/20 23:07	OP83158	(unrelated sample)
ZZZZZZ	4Q8588.D	12/02/20 23:22	OP83158	(unrelated sample)
S4Q118-CC118	4Q8589.D	12/02/20 23:38	n/a	Continuing cal 20
S4Q118-CC118	4Q8591.D	12/03/20 00:09	n/a	Continuing cal 1.0LL
OP83173-BS	4Q8592.D	12/03/20 00:24	OP83173	Blank Spike
OP83173-MB	4Q8593.D	12/03/20 00:40	OP83173	Method Blank
ZZZZZZ	4Q8594.D	12/03/20 00:55	OP83173	(unrelated sample)
ZZZZZZ	4Q8595.D	12/03/20 01:11	OP83173	(unrelated sample)
FA81067-3	4Q8596.D	12/03/20 01:26	OP83173	(used for QC only; not part of job FA81068)
OP83173-MS1	4Q8597.D	12/03/20 01:41	OP83173	Matrix Spike
OP83173-MSD1	4Q8598.D	12/03/20 01:57	OP83173	Matrix Spike Duplicate

Run Sequence Report

Job Number: FA81068
Account: AEROTNOR Aerostar SES LLC
Project: Former Kulis ANGB

Run ID: S4Q118 **Method:** EPA 537M QSM5.3 B-15 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q118-CC118	4Q8599.D	12/03/20 02:12	n/a	Continuing cal 20
FA81068-1	4Q8601.D	12/03/20 02:43	OP83173	K00701
FA81068-2	4Q8602.D	12/03/20 02:59	OP83173	K00702
FA81068-3	4Q8603.D	12/03/20 03:14	OP83173	K01203
OP83173-MS2	4Q8604.D	12/03/20 03:29	OP83173	Matrix Spike
OP83173-MSD2	4Q8605.D	12/03/20 03:45	OP83173	Matrix Spike Duplicate
ZZZZZZ	4Q8606.D	12/03/20 04:00	OP83173	(unrelated sample)
ZZZZZZ	4Q8607.D	12/03/20 04:16	OP83173	(unrelated sample)
ZZZZZZ	4Q8608.D	12/03/20 04:31	OP83173	(unrelated sample)
ZZZZZZ	4Q8609.D	12/03/20 04:47	OP83173	(unrelated sample)
S4Q118-CC118	4Q8611.D	12/03/20 05:17	n/a	Continuing cal 20
ZZZZZZ	4Q8613.D	12/03/20 05:48	OP83173	(unrelated sample)
ZZZZZZ	4Q8614.D	12/03/20 06:04	OP83173	(unrelated sample)
ZZZZZZ	4Q8615.D	12/03/20 06:19	OP83173	(unrelated sample)
ZZZZZZ	4Q8617.D	12/03/20 06:50	OP83173	(unrelated sample)
S4Q118-ECC118	4Q8618.D	12/03/20 07:06	n/a	Ending cal 20

MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8601.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 2:43:37 AM
Sample Name	:	fa81068-1
Vial	:	P1-F5
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op83173,S4Q118,125,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	56349	20.00	µg/L	-0.013
M5-PFPeA	3.580	268.0 -> 223.0	103273	20.00	µg/L	0.000
M5-PFHxA	4.889	318.0 -> 273.0	160641	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	166227	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	241681	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	251939	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	156575	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	201951	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	231765	20.00	µg/L	0.000
M2-PFTeDA	9.385	715.0 -> 670.0	232667	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	42264	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	8599	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	10090	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	13802	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	57109	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	101142	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	78098	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	87309	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	12944	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	46837	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	57116	15.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%		
13C2-6:2FTS	6.502	429.0 -> 409.0	101152	15.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%		
13C2-8:2FTS	7.640	529.0 -> 509.0	78121	15.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C2-PFDoDA	8.391	615.0 -> 570.0	231752	14.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%		
13C2-PFTeDA	9.385	715.0 -> 670.0	232478	12.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.4%		
13C3-PFBS	3.867	302.0 -> 99.0	8599	14.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%		
13C3-PFHxS	5.842	402.0 -> 99.0	10092	15.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C4-PFBA	1.812	217.0 -> 172.0	56344	14.82	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C4-PFHpA	5.795	367.0 -> 322.0	166235	16.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C5-PFHxA	4.889	318.0 -> 273.0	160655	15.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%		
13C5-PFPeA	3.580	268.0 -> 223.0	103280	14.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.2%		
13C6-PFDA	7.604	519.0 -> 474.0	156653	15.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	202040	15.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%			
13C8-FOSA	7.146	506.0 -> 78.0	42263	16.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.0%			
13C8-PFOA	6.504	421.0 -> 376.0	241778	16.25	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%			
13C8-PFOS	7.096	507.0 -> 99.0	13824	15.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%			
13C9-PFNA	7.110	472.0 -> 427.0	251924	16.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
d3-MeFOSAA	7.587	573.0 -> 419.0	87323	16.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.0%			
13C3-HFPO-DA	5.178	287.0 -> 169.0	12944	15.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
d5-EtFOSAA	7.722	589.0 -> 419.0	46837	15.82	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	0.956	213.0 -> 169.0	0		µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	3.582	263.0 -> 219.0	544	0.12	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.82	1.81	-0.01	56344				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.83	3.58	0.00	103280				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.72	3.87	0.00	8599				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.04	4.79	0.00	57116				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.80	4.89	0.00	160655				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.38	5.18	0.00	12944				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.05	5.80	0.00	166235				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.82	5.84	0.00	10092				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.78	6.50	0.00	101152				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.25	6.50	0.00	241778				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.30	7.10	0.00	13824				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.08	7.11	0.00	251924				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.41	7.15	0.00	42263				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.40	7.59	0.00	87323				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.81	7.60	0.00	156653				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.00	7.64	0.00	78121				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.82	7.72	0.00	46837				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.05	8.01	0.00	202040				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.80	8.39	0.00	231752				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.68	9.38	0.00	232478				

Manual Integration Approval Summary

Sample Number:	FA81068-1	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8601.D	**Analyst approved:**	12/03/20 09:54 Nancy Saunders
Injection Time:	12/03/20 02:43	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.58	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8602.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 2:59:04 AM
Sample Name	:	fa81068-2
Vial	:	P1-F6
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op83173,S4Q118,125,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	54173	20.00	µg/L	-0.013
M5-PFPeA	3.592	268.0 -> 223.0	99035	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	156895	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	162694	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	237004	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	248000	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	152607	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	197922	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	217787	20.00	µg/L	0.000
M2-PFTeDA	9.384	715.0 -> 670.0	242040	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	39073	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	8443	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	9887	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	13505	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	55158	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	99276	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	76120	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	84404	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	12509	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	42398	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	55188	14.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.7%		
13C2-6:2FTS	6.502	429.0 -> 409.0	99262	15.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%		
13C2-8:2FTS	7.640	529.0 -> 509.0	76157	14.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.1%		
13C2-PFDoDA	8.391	615.0 -> 570.0	217813	13.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%		
13C2-PFTeDA	9.384	715.0 -> 670.0	241717	13.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.9%		
13C3-PFBS	3.867	302.0 -> 99.0	8440	14.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.2%		
13C3-PFHxS	5.842	402.0 -> 99.0	9889	15.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.5%		
13C4-PFBA	1.812	217.0 -> 172.0	54158	14.25	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%		
13C4-PFHpA	5.795	367.0 -> 322.0	162734	15.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.6%		
13C5-PFHxA	4.889	318.0 -> 273.0	156895	15.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%		
13C5-PFPeA	3.592	268.0 -> 223.0	99117	14.23	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%		
13C6-PFDA	7.604	519.0 -> 474.0	152661	15.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.0%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	197933	14.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%			
13C8-FOSA	7.146	506.0 -> 78.0	39172	15.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%			
13C8-PFOA	6.504	421.0 -> 376.0	237001	15.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%			
13C8-PFOS	7.096	507.0 -> 99.0	13503	14.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.8%			
13C9-PFNA	7.110	472.0 -> 427.0	248052	15.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%			
d3-MeFOSAA	7.587	573.0 -> 419.0	84400	15.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%			
13C3-HFPO-DA	5.178	287.0 -> 169.0	12509	14.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%			
d5-EtFOSAA	7.722	589.0 -> 419.0	42398	14.32	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	0.981	213.0 -> 169.0	0		µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	3.594	263.0 -> 219.0	1143	0.26	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.25	1.81	-0.01	54158				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.23	3.59	0.01	99117				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.26	3.59	0.01	1143				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.45	3.87	0.00	8440				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.53	4.79	0.00	55188				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.43	4.89	0.00	156895				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.86	5.18	0.00	12509				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.71	5.80	0.00	162734				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.51	5.84	0.00	9889				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.49	6.50	0.00	99262				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.93	6.50	0.00	237001				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.95	7.10	0.00	13503				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.83	7.11	0.00	248052				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.21	7.15	0.00	39172				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.85	7.59	0.00	84400				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.40	7.60	0.00	152661				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.63	7.64	0.00	76157				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.32	7.72	0.00	42398				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.74	8.01	0.00	197933				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.91	8.39	0.00	217813				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.18	9.38	0.00	241717				

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8603.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 3:14:33 AM
Sample Name	:	fa81068-3
Vial	:	P1-F7
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op83173,S4Q118,120,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	58716	20.00	µg/L	-0.013
M5-PFPeA	3.592	268.0 -> 223.0	106059	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	165461	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	169331	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	244796	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	256510	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	160138	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	208697	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	233443	20.00	µg/L	0.000
M2-PFTeDA	9.385	715.0 -> 670.0	255279	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	38666	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	8698	20.00	µg/L	0.000
M3-PFHxS	5.829	402.0 -> 99.0	10186	20.00	µg/L	-0.012
M8-PFOS	7.096	507.0 -> 99.0	14117	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	58379	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	102588	20.00	µg/L	-0.012
M2-8:2FTS	7.640	529.0 -> 509.0	80052	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	90043	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	13416	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	46514	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	58387	15.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C2-6:2FTS	6.490	429.0 -> 409.0	102607	16.01	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C2-8:2FTS	7.640	529.0 -> 509.0	80100	15.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C2-PFDoDA	8.391	615.0 -> 570.0	233412	14.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.5%		
13C2-PFTeDA	9.385	715.0 -> 670.0	255169	13.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.6%		
13C3-PFBS	3.867	302.0 -> 99.0	8703	14.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.5%		
13C3-PFHxS	5.829	402.0 -> 99.0	10184	15.97	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%		
13C4-PFBA	1.812	217.0 -> 172.0	58710	15.45	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.2%		
13C4-PFHpA	5.795	367.0 -> 322.0	169359	16.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.8%		
13C5-PFHxA	4.889	318.0 -> 273.0	165528	16.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.4%		
13C5-PFPeA	3.592	268.0 -> 223.0	106036	15.23	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C6-PFDA	7.604	519.0 -> 474.0	160186	16.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.8%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	208734	15.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.7%			
13C8-FOSA	7.146	506.0 -> 78.0	38666	15.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%			
13C8-PFOA	6.504	421.0 -> 376.0	244853	16.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%			
13C8-PFOS	7.096	507.0 -> 99.0	14118	15.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.2%			
13C9-PFNA	7.110	472.0 -> 427.0	256580	16.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.9%			
d3-MeFOSAA	7.587	573.0 -> 419.0	90008	16.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.5%			
13C3-HFPO-DA	5.178	287.0 -> 169.0	13416	15.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%			
d5-EtFOSAA	7.722	589.0 -> 419.0	46514	15.71	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.006	213.0 -> 169.0	0		µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	3.594	263.0 -> 219.0	1207	0.25	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.45	1.81	-0.01	58710				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.23	3.59	0.01	106036				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.25	3.59	0.01	1207				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.90	3.87	0.00	8703				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.37	4.79	0.00	58387				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.28	4.89	0.00	165528				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.94	5.18	0.00	13416				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.35	5.80	0.00	169359				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.97	5.83	-0.01	10184				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.01	6.49	-0.01	102607				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.46	6.50	0.00	244853				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.63	7.10	0.00	14118				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.38	7.11	0.00	256580				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.01	7.15	0.00	38666				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.91	7.59	0.00	90008				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.16	7.60	0.00	160186				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.38	7.64	0.00	80100				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.71	7.72	0.00	46514				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.54	8.01	0.00	208734				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.90	8.39	0.00	233412				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.91	9.38	0.00	255169				

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8593.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 12:40:11 AM
Sample Name	:	op83173-mb
Vial	:	P1-E8
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op83173,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.837	217.0 -> 172.0	52245	20.00	µg/L	0.013
M5-PFPeA	3.605	268.0 -> 223.0	107744	20.00	µg/L	0.025
M5-PFHxA	4.902	318.0 -> 273.0	161020	20.00	µg/L	0.012
M4-PFHpA	5.808	367.0 -> 322.0	162861	20.00	µg/L	0.012
M8-PFOA	6.516	421.0 -> 376.0	232082	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	238312	20.00	µg/L	0.000
M6-PFDA	7.616	519.0 -> 474.0	145180	20.00	µg/L	0.012
M7-PFUnDA	8.009	570.0 -> 525.0	186427	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	209501	20.00	µg/L	0.000
M2-PFTeDA	9.384	715.0 -> 670.0	221194	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	36597	20.00	µg/L	0.000
M3-PFBS	3.880	302.0 -> 99.0	9040	20.00	µg/L	0.012
M3-PFHxS	5.842	402.0 -> 99.0	9933	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	12980	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	55796	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	95759	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	72417	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	80293	20.00	µg/L	0.000
M3-HFPO-DA	5.190	287.0 -> 169.0	13173	20.00	µg/L	0.012
M5-EtFOSAA	7.722	589.0 -> 419.0	40536	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	55797	14.69	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.5%		
13C2-6:2FTS	6.502	429.0 -> 409.0	95779	14.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.7%		
13C2-8:2FTS	7.640	529.0 -> 509.0	72414	13.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%		
13C2-PFDoDA	8.391	615.0 -> 570.0	209427	13.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%		
13C2-PFTeDA	9.384	715.0 -> 670.0	221152	12.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.3%		
13C3-PFBS	3.880	302.0 -> 99.0	9040	15.48	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%		
13C3-PFHxS	5.842	402.0 -> 99.0	9933	15.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.9%		
13C4-PFBA	1.837	217.0 -> 172.0	52286	13.76	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%		
13C4-PFHpA	5.808	367.0 -> 322.0	162860	15.72	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.6%		
13C5-PFHxA	4.902	318.0 -> 273.0	161061	15.84	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%		
13C5-PFPeA	3.605	268.0 -> 223.0	108490	15.58	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.9%		
13C6-PFDA	7.616	519.0 -> 474.0	145153	14.65	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.2%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	186538	13.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
13C8-FOSA	7.146	506.0 -> 78.0	36615	14.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.1%			
13C8-PFOA	6.516	421.0 -> 376.0	232083	15.60	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
13C8-PFOS	7.096	507.0 -> 99.0	12979	14.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.8%			
13C9-PFNA	7.110	472.0 -> 427.0	238459	15.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%			
d3-MeFOSAA	7.587	573.0 -> 419.0	80308	15.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
13C3-HFPO-DA	5.190	287.0 -> 169.0	13173	15.65	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.3%			
d5-EtFOSAA	7.722	589.0 -> 419.0	40536	13.69	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	0.944	213.0 -> 169.0	0		µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.76	1.84	0.01	52286				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.58	3.60	0.02	108490				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.48	3.88	0.01	9040				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.69	4.80	0.01	55797				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.84	4.90	0.01	161061				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.65	5.19	0.01	13173				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.72	5.81	0.01	162860				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.57	5.84	0.00	9933				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.95	6.50	0.00	95779				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.60	6.52	0.01	232083				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.37	7.10	0.00	12979				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.22	7.11	0.00	238459				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.22	7.15	0.00	36615				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.08	7.59	0.00	80308				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.65	7.62	0.01	145153				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.91	7.64	0.00	72414				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.69	7.72	0.00	40536				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.89	8.01	0.00	186538				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.37	8.39	0.00	209427				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.06	9.38	0.00	221152				

7.2.1

7

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8560.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 4:10:42 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	78315	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	142357	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	208436	20.00	µg/L	0.000
M4-PFHpA	5.808	367.0 -> 322.0	212276	20.00	µg/L	0.012
M8-PFOA	6.516	421.0 -> 376.0	308142	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	324403	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	209781	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	277110	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	323249	20.00	µg/L	0.000
M2-PFTeDA	9.372	715.0 -> 670.0	385266	20.00	µg/L	-0.013
M8-FOSA	7.146	506.0 -> 78.0	55619	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	12087	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	13089	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	18603	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	72809	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	125778	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	101250	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	115086	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	16817	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	60035	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	72826	19.17	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-6:2FTS	6.502	429.0 -> 409.0	125790	19.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-8:2FTS	7.640	529.0 -> 509.0	101280	19.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-PFDoDA	8.391	615.0 -> 570.0	323152	20.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-PFTeDA	9.372	715.0 -> 670.0	384437	20.96	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C3-PFBS	3.867	302.0 -> 99.0	12088	20.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFHxS	5.842	402.0 -> 99.0	13104	20.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFBA	1.825	217.0 -> 172.0	78304	20.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C4-PFHpA	5.808	367.0 -> 322.0	212364	20.50	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFHxA	4.889	318.0 -> 273.0	208430	20.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFPeA	3.592	268.0 -> 223.0	142375	20.44	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C6-PFDA	7.604	519.0 -> 474.0	209786	21.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	277206	20.64 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C8-FOSA	7.146	506.0 -> 78.0	55623	21.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C8-PFOA	6.516	421.0 -> 376.0	308135	20.72 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C8-PFOS	7.096	507.0 -> 99.0	18601	20.59 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C9-PFNA	7.110	472.0 -> 427.0	324468	20.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
d3-MeFOSAA	7.587	573.0 -> 419.0	115139	21.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	16817	19.98 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
d5-EtFOSAA	7.722	589.0 -> 419.0	60035	20.28 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	7.723	584.0 -> 419.0	993	0.23 µg/L	m	91
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	7.600	570.0 -> 419.0	1143	0.22 µg/L	m	98
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	9.375	713.0 -> 669.0	3080	0.17 µg/L		93
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.60	1.82	0.00	78304				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.44	3.59	0.01	142375				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.69	3.87	0.00	12088				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.17	4.80	0.01	72826				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.50	4.89	0.00	208430				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.98	5.18	0.00	16817				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.50	5.81	0.01	212364				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.55	5.84	0.00	13104				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.63	6.50	0.00	125790				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.72	6.52	0.01	308135				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.59	7.10	0.00	18601				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.71	7.11	0.00	324468				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.60	7.15	0.00	55623				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.63	7.59	0.00	115139				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.17	7.60	0.00	209786				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.45	7.64	0.00	101280				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.28	7.72	0.00	60035				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.64	8.01	0.00	277206				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.63	8.39	0.00	323152				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.96	9.37	-0.01	384437				

7.2.2

7

Manual Integration Approval Summary

Sample Number:	S4Q118-IBLK	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8560.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 16:10	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q8592.d
Operator : nancyf
Acq. Method : 537_ID.m
Acq. Date-Time : 12/3/2020 12:24:43 AM
Sample Name : op83173-bs
Vial : P1-E7
DA Method File : ID_120220_S4Q118.quantmethod.xml
Batch Name : s4q118.batch.bin
Sample Information : op83173,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.837	217.0 -> 172.0	53296	20.00	µg/L	0.013
M5-PFPeA	3.605	268.0 -> 223.0	110798	20.00	µg/L	0.025
M5-PFHxA	4.889	318.0 -> 273.0	164273	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	166150	20.00	µg/L	0.000
M8-PFOA	6.516	421.0 -> 376.0	238254	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	248901	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	156843	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	202250	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	225655	20.00	µg/L	0.000
M2-PFTeDA	9.372	715.0 -> 670.0	252652	20.00	µg/L	-0.012
M8-FOSA	7.146	506.0 -> 78.0	41790	20.00	µg/L	0.000
M3-PFBS	3.880	302.0 -> 99.0	9423	20.00	µg/L	0.012
M3-PFHxS	5.842	402.0 -> 99.0	10041	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	14449	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	60043	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	102837	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	82988	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	83473	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	13605	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	44465	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	60120	15.83	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C2-6:2FTS	6.502	429.0 -> 409.0	102856	16.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C2-8:2FTS	7.640	529.0 -> 509.0	82982	15.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C2-PFDoDA	8.391	615.0 -> 570.0	225586	14.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.0%		
13C2-PFTeDA	9.372	715.0 -> 670.0	252405	13.76	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%		
13C3-PFBS	3.880	302.0 -> 99.0	9419	16.12	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%		
13C3-PFHxS	5.842	402.0 -> 99.0	10059	15.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%		
13C4-PFBA	1.837	217.0 -> 172.0	53286	14.02	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.1%		
13C4-PFHpA	5.795	367.0 -> 322.0	166169	16.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C5-PFHxA	4.889	318.0 -> 273.0	164318	16.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
13C5-PFPeA	3.605	268.0 -> 223.0	110785	15.91	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%		
13C6-PFDA	7.604	519.0 -> 474.0	156852	15.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	202426	15.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C8-FOSA	7.146	506.0 -> 78.0	41804	16.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%		
13C8-PFOA	6.516	421.0 -> 376.0	238274	16.02 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C8-PFOS	7.096	507.0 -> 99.0	14456	16.01 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%		
13C9-PFNA	7.110	472.0 -> 427.0	248912	15.89 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.4%		
d3-MeFOSAA	7.587	573.0 -> 419.0	83549	15.69 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	13605	16.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
d5-EtFOSAA	7.722	589.0 -> 419.0	44465	15.02 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.801	327.0 -> 307.0	61717	20.64 µg/L		100
6:2FTS	6.503	427.0 -> 407.0	106213	20.74 µg/L		99
8:2FTS	7.640	527.0 -> 507.0	90642	20.74 µg/L		99
EtFOSAA	7.723	584.0 -> 419.0	65824	21.00 µg/L	m	97
FOSA	7.147	498.0 -> 78.0	40969	20.10 µg/L		99
MeFOSAA	7.600	570.0 -> 419.0	75953	19.91 µg/L	m	100
PFBA	1.831	213.0 -> 169.0	19898	20.45 µg/L		100
PFBS	3.882	299.0 -> 80.0	26213	20.49 µg/L		99
PFDA	7.604	513.0 -> 469.0	242320	21.20 µg/L		100
PFDoDA	8.391	613.0 -> 569.0	218453	19.93 µg/L		99
PFDS	7.982	599.0 -> 80.0	19609	19.92 µg/L		98
PFHpA	5.796	363.0 -> 319.0	222861	22.66 µg/L		100
PFHpS	6.514	449.0 -> 80.0	22346	20.90 µg/L		100
PFHxA	4.890	313.0 -> 269.0	155856	21.14 µg/L		100
PFHxS	5.843	399.0 -> 80.0	23678	18.74 µg/L	m	99
PFNA	7.111	463.0 -> 419.0	233973	19.43 µg/L		99
PFNS	7.577	549.0 -> 80.0	20463	20.36 µg/L		99
PFOA	6.516	413.0 -> 369.0	275245	20.13 µg/L		99
PFOS	7.097	499.0 -> 80.0	28359	20.54 µg/L	m	98
PFPeA	3.607	263.0 -> 219.0	101453	20.42 µg/L		100
PFPeS	5.011	349.0 -> 80.0	19820	19.45 µg/L		100
PFTeDA	9.375	713.0 -> 669.0	246234	20.19 µg/L		99
PFTrDA	8.838	663.0 -> 619.0	231849	21.37 µg/L		99
PFUnDA	8.010	563.0 -> 519.0	215680	20.34 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	121395	21.16 µg/L		100
9Cl-PF3ONS	7.367	531.0 -> 351.0	115661	18.16 µg/L		99
ADONA	5.894	377.0 -> 251.0	269730	19.59 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	30535	20.01 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.45	1.83	0.01	19898				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.02	1.84	0.01	53286				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.91	3.60	0.02	110785				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.42	3.61	0.02	101453				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.12	3.88	0.01	9419				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.49	3.88	0.01	26213	299.0 -> 99.0	40.4	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.83	4.80	0.01	60120				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.64	4.80	0.01	61717	327.0 -> 81.0	41.8	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.16	4.89	0.00	164318				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.14	4.89	0.00	155856	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.45	5.01	0.00	19820	349.0 -> 99.0	47.0	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.01	5.17	0.00	30535	285.0 -> 169.0	48.1	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	16.17	5.18	0.00	13605				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.04	5.80	0.00	166169				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.66	5.80	0.00	222861	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.77	5.84	0.00	10059				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.74	5.84	0.00	23678 (m)	399.0 -> 99.0	52.7	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.59	5.89	0.00	269730				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.05	6.50	0.00	102856				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.74	6.50	0.00	106213	427.0 -> 81.0	29.5	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.02	6.52	0.01	238274				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.90	6.51	0.00	22346	449.0 -> 99.0	52.1	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.13	6.52	0.00	275245	413.0 -> 169.0	18.9	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.01	7.10	0.00	14456				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.54	7.10	0.00	28359 (m)	499.0 -> 99.0	46.7	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.89	7.11	0.00	248912				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.43	7.11	0.00	233973	463.0 -> 219.0	19.2	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.23	7.15	0.00	41804				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.10	7.15	0.00	40969	498.0 -> 478.0	4.1	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.16	7.37	0.00	115661	533.0 -> 353.0	31.1	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.36	7.58	0.00	20463	549.0 -> 99.0	55.1	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.69	7.59	0.00	83549				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.91	7.60	0.00	75953 (m)	570.0 -> 512.0	28.3	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.83	7.60	0.00	156852				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.20	7.60	0.00	242320	513.0 -> 219.0	16.1	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.94	7.64	0.00	82982				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.74	7.64	0.00	90642	527.0 -> 81.0	36.3	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.02	7.72	0.00	44465				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.00	7.72	0.00	65824 (m)	584.0 -> 483.0	52.9	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.92	7.98	0.00	19609	599.0 -> 99.0	51.5	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.07	8.01	0.00	202426				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.34	8.01	0.00	215680	563.0 -> 269.0	18.5	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.16	8.15	0.00	121395	633.0 -> 453.0	31.4	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.40	8.39	0.00	225586				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.93	8.39	0.00	218453	613.0 -> 319.0	18.2	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.37	8.84	0.00	231849	663.0 -> 369.0	13.3	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.19	9.37	0.00	246234	713.0 -> 219.0	10.4	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.76	9.37	-0.01	252405				

7.3.1

7

Manual Integration Approval Summary

Sample Number:	OP83173-BS	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8592.D	**Analyst approved:**	12/03/20 09:49 Nancy Saunders
Injection Time:	12/03/20 00:24	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8604.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 3:29:59 AM
Sample Name	:	op83173-ms2
Vial	:	P1-F8
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op83173,S4Q118,120,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	57748	20.00	µg/L	-0.013
M5-PFPeA	3.580	268.0 -> 223.0	105631	20.00	µg/L	0.000
M5-PFHxA	4.889	318.0 -> 273.0	167107	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	173246	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	254116	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	265270	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	162771	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	215764	20.00	µg/L	0.000
M2-PFDoDA	8.379	615.0 -> 570.0	251524	20.00	µg/L	-0.012
M2-PFTeDA	9.384	715.0 -> 670.0	294355	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	44211	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	8917	20.00	µg/L	0.000
M3-PFHxS	5.829	402.0 -> 99.0	10547	20.00	µg/L	-0.012
M8-PFOS	7.084	507.0 -> 99.0	14663	20.00	µg/L	-0.012
M2-4:2FTS	4.788	329.0 -> 309.0	62782	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	110201	20.00	µg/L	-0.012
M2-8:2FTS	7.640	529.0 -> 509.0	86474	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	88734	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	13457	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	48277	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	62782	16.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%		
13C2-6:2FTS	6.490	429.0 -> 409.0	110200	17.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%		
13C2-8:2FTS	7.640	529.0 -> 509.0	86490	16.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%		
13C2-PFDoDA	8.379	615.0 -> 570.0	251411	16.05	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C2-PFTeDA	9.384	715.0 -> 670.0	294403	16.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C3-PFBS	3.867	302.0 -> 99.0	8915	15.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.3%		
13C3-PFHxS	5.829	402.0 -> 99.0	10555	16.55	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%		
13C4-PFBA	1.812	217.0 -> 172.0	57827	15.21	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C4-PFHpA	5.795	367.0 -> 322.0	173232	16.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.6%		
13C5-PFHxA	4.889	318.0 -> 273.0	167093	16.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C5-PFPeA	3.580	268.0 -> 223.0	105645	15.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%		
13C6-PFDA	7.604	519.0 -> 474.0	162803	16.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	215807	16.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
13C8-FOSA	7.146	506.0 -> 78.0	44204	17.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%			
13C8-PFOA	6.504	421.0 -> 376.0	254134	17.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
13C8-PFOS	7.084	507.0 -> 99.0	14669	16.24	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%			
13C9-PFNA	7.110	472.0 -> 427.0	265330	16.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.7%			
d3-MeFOSAA	7.587	573.0 -> 419.0	88743	16.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.3%			
13C3-HFPO-DA	5.178	287.0 -> 169.0	13457	15.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%			
d5-EtFOSAA	7.722	589.0 -> 419.0	48277	16.31	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	4.789	327.0 -> 307.0	63250	20.23	µg/L		99
6:2FTS	6.490	427.0 -> 407.0	113990	20.77	µg/L		99
8:2FTS	7.640	527.0 -> 507.0	95577	20.99	µg/L		100
EtFOSAA	7.723	584.0 -> 419.0	72735	21.37	µg/L	m	96
FOSA	7.135	498.0 -> 78.0	43261	20.06	µg/L		100
MeFOSAA	7.588	570.0 -> 419.0	80792	19.93	µg/L	m	100
PFBA	1.819	213.0 -> 169.0	20554	19.49	µg/L		100
PFBS	3.870	299.0 -> 80.0	24695	20.40	µg/L		99
PFDA	7.604	513.0 -> 469.0	253649	21.39	µg/L		100
PFDoDA	8.379	613.0 -> 569.0	240551	19.69	µg/L		99
PFDS	7.969	599.0 -> 80.0	21347	20.33	µg/L		99
PFHpA	5.796	363.0 -> 319.0	230894	22.52	µg/L		100
PFHpS	6.514	449.0 -> 80.0	23300	20.75	µg/L		99
PFHxA	4.890	313.0 -> 269.0	157675	21.02	µg/L		100
PFHxS	5.831	399.0 -> 80.0	24758	18.66	µg/L	m	99
PFNA	7.111	463.0 -> 419.0	248013	19.33	µg/L		99
PFNS	7.577	549.0 -> 80.0	21289	20.87	µg/L		100
PFOA	6.504	413.0 -> 369.0	293503	20.12	µg/L		100
PFOS	7.085	499.0 -> 80.0	29184	20.83	µg/L	m	98
PFPeA	3.582	263.0 -> 219.0	95943	20.26	µg/L		100
PFPeS	5.011	349.0 -> 80.0	20705	21.47	µg/L		100
PFTeDA	9.375	713.0 -> 669.0	286312	20.15	µg/L		99
PFTrDA	8.838	663.0 -> 619.0	260915	20.64	µg/L		99
PFUnDA	8.010	563.0 -> 519.0	230800	20.41	µg/L		99
11Cl-PF3OUdS	8.141	631.0 -> 451.0	133813	20.93	µg/L		99
9Cl-PF3ONS	7.354	531.0 -> 351.0	121361	18.36	µg/L		98
ADONA	5.894	377.0 -> 251.0	280456	19.10	µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	31603	20.93	µg/L		98

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.49	1.82	0.00	20554				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.21	1.81	-0.01	57827				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.17	3.58	0.00	105645				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.26	3.58	0.00	95943				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.26	3.87	0.00	8915				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.40	3.87	0.00	24695	299.0 -> 99.0	40.3	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.53	4.79	0.00	62782				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.23	4.79	0.00	63250	327.0 -> 81.0	42.2	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.43	4.89	0.00	167093				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.02	4.89	0.00	157675	313.0 -> 119.0	3.7	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.47	5.01	0.00	20705	349.0 -> 99.0	47.0	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.93	5.17	0.00	31603	285.0 -> 169.0	46.1	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.99	5.18	0.00	13457				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.73	5.80	0.00	173232				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.52	5.80	0.00	230894	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.55	5.83	-0.01	10555				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.66	5.83	-0.01	24758 (m)	399.0 -> 99.0	52.9	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.10	5.89	0.00	280456				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.20	6.49	-0.01	110200				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.77	6.49	-0.01	113990	427.0 -> 81.0	29.3	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.09	6.50	0.00	254134				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.75	6.51	0.00	23300	449.0 -> 99.0	52.4	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.12	6.50	-0.01	293503	413.0 -> 169.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.24	7.08	-0.01	14669				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.83	7.08	-0.01	29184 (m)	499.0 -> 99.0	47.2	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.94	7.11	0.00	265330				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.33	7.11	0.00	248013	463.0 -> 219.0	18.9	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.16	7.15	0.00	44204				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.06	7.13	-0.01	43261	498.0 -> 478.0	4.3	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.36	7.35	-0.01	121361	533.0 -> 353.0	30.6	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.87	7.58	0.00	21289	549.0 -> 99.0	55.5	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.67	7.59	0.00	88743				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.93	7.59	-0.01	80792 (m)	570.0 -> 512.0	28.3	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.43	7.60	0.00	162803				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.39	7.60	0.00	253649	513.0 -> 219.0	16.0	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.61	7.64	0.00	86490				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.99	7.64	0.00	95577	527.0 -> 81.0	35.9	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.31	7.72	0.00	48277				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.37	7.72	0.00	72735 (m)	584.0 -> 483.0	52.5	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.33	7.97	-0.01	21347	599.0 -> 99.0	52.3	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.07	8.01	0.00	215807				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.41	8.01	0.00	230800	563.0 -> 269.0	18.6	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.93	8.14	-0.01	133813	633.0 -> 453.0	30.8	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.05	8.38	-0.01	251411				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.69	8.38	-0.01	240551	613.0 -> 319.0	18.2	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.64	8.84	0.00	260915	663.0 -> 369.0	13.4	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.15	9.37	0.00	286312	713.0 -> 219.0	10.5	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.05	9.38	0.00	294403				

7.4.1

7

Manual Integration Approval Summary

Sample Number:	OP83173-MS2	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8604.D	**Analyst approved:**	12/03/20 09:54 Nancy Saunders
Injection Time:	12/03/20 03:29	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.08	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8605.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 3:45:25 AM
Sample Name	:	op83173-msd2
Vial	:	P1-F9
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op83173,S4Q118,120,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	55793	20.00	µg/L	-0.013
M5-PFPeA	3.580	268.0 -> 223.0	101632	20.00	µg/L	0.000
M5-PFHxA	4.877	318.0 -> 273.0	159390	20.00	µg/L	-0.012
M4-PFHpA	5.795	367.0 -> 322.0	164649	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	243277	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	253560	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	157475	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	207596	20.00	µg/L	0.000
M2-PFDoDA	8.379	615.0 -> 570.0	232200	20.00	µg/L	-0.012
M2-PFTeDA	9.372	715.0 -> 670.0	260239	20.00	µg/L	-0.012
M8-FOSA	7.146	506.0 -> 78.0	40369	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	8606	20.00	µg/L	0.000
M3-PFHxS	5.829	402.0 -> 99.0	10162	20.00	µg/L	-0.012
M8-PFOS	7.096	507.0 -> 99.0	14232	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	59527	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	106098	20.00	µg/L	-0.012
M2-8:2FTS	7.627	529.0 -> 509.0	83469	20.00	µg/L	-0.012
M3-MeFOSAA	7.587	573.0 -> 419.0	84659	20.00	µg/L	0.000
M3-HFPO-DA	5.166	287.0 -> 169.0	13133	20.00	µg/L	-0.012
M5-EtFOSAA	7.709	589.0 -> 419.0	46297	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	59532	15.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%		
13C2-6:2FTS	6.490	429.0 -> 409.0	106103	16.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%		
13C2-8:2FTS	7.627	529.0 -> 509.0	83492	16.04	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C2-PFDoDA	8.379	615.0 -> 570.0	232199	14.82	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C2-PFTeDA	9.372	715.0 -> 670.0	259981	14.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.9%		
13C3-PFBS	3.867	302.0 -> 99.0	8611	14.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%		
13C3-PFHxS	5.829	402.0 -> 99.0	10162	15.93	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C4-PFBA	1.812	217.0 -> 172.0	55845	14.69	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.5%		
13C4-PFHpA	5.795	367.0 -> 322.0	164668	15.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%		
13C5-PFHxA	4.877	318.0 -> 273.0	159402	15.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%		
13C5-PFPeA	3.580	268.0 -> 223.0	101599	14.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C6-PFDA	7.604	519.0 -> 474.0	157497	15.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	207617	15.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%			
13C8-FOSA	7.146	506.0 -> 78.0	40364	15.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%			
13C8-PFOA	6.504	421.0 -> 376.0	243276	16.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.8%			
13C8-PFOS	7.096	507.0 -> 99.0	14227	15.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.8%			
13C9-PFNA	7.110	472.0 -> 427.0	253601	16.19	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.9%			
d3-MeFOSAA	7.587	573.0 -> 419.0	84659	15.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%			
13C3-HFPO-DA	5.166	287.0 -> 169.0	13133	15.60	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
d5-EtFOSAA	7.709	589.0 -> 419.0	46297	15.64	µg/L		-0.013
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	4.789	327.0 -> 307.0	61414	20.71	µg/L		99
6:2FTS	6.490	427.0 -> 407.0	111271	21.06	µg/L		100
8:2FTS	7.628	527.0 -> 507.0	93123	21.18	µg/L		100
EtFOSAA	7.723	584.0 -> 419.0	68499	20.99	µg/L	m	96
FOSA	7.147	498.0 -> 78.0	39835	20.23	µg/L		99
MeFOSAA	7.588	570.0 -> 419.0	79187	20.47	µg/L	m	100
PFBA	1.806	213.0 -> 169.0	19993	19.63	µg/L		100
PFBS	3.857	299.0 -> 80.0	24073	20.60	µg/L		98
PFDA	7.604	513.0 -> 469.0	242487	21.13	µg/L		99
PFDoDA	8.379	613.0 -> 569.0	225106	19.96	µg/L		99
PFDS	7.969	599.0 -> 80.0	19824	19.62	µg/L		98
PFHpA	5.796	363.0 -> 319.0	224043	22.99	µg/L		100
PFHpS	6.514	449.0 -> 80.0	22802	21.08	µg/L		100
PFHxA	4.878	313.0 -> 269.0	152712	21.35	µg/L		100
PFHxS	5.831	399.0 -> 80.0	23882	18.68	µg/L	m	98
PFNA	7.111	463.0 -> 419.0	241377	19.68	µg/L		100
PFNS	7.577	549.0 -> 80.0	20769	20.98	µg/L		98
PFOA	6.504	413.0 -> 369.0	283149	20.28	µg/L		100
PFOS	7.097	499.0 -> 80.0	28124	20.68	µg/L	m	98
PFPeA	3.582	263.0 -> 219.0	93091	20.43	µg/L		100
PFPeS	4.998	349.0 -> 80.0	19611	21.07	µg/L		98
PFTeDA	9.375	713.0 -> 669.0	256213	20.40	µg/L		99
PFTrDA	8.826	663.0 -> 619.0	240843	21.55	µg/L		99
PFUnDA	8.010	563.0 -> 519.0	221610	20.36	µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	125929	21.34	µg/L		100
9Cl-PF3ONS	7.354	531.0 -> 351.0	116189	18.17	µg/L		100
ADONA	5.894	377.0 -> 251.0	271752	19.33	µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	30770	20.88	µg/L		97

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.63	1.81	-0.01	19993				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.69	1.81	-0.01	55845				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.59	3.58	0.00	101599				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.43	3.58	0.00	93091				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.74	3.87	0.00	8611				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.60	3.86	-0.01	24073	299.0 -> 99.0	39.8	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.67	4.79	0.00	59532				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.71	4.79	0.00	61414	327.0 -> 81.0	42.0	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.67	4.88	-0.01	159402				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.35	4.88	-0.01	152712	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.07	5.00	-0.01	19611	349.0 -> 99.0	48.2	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.88	5.17	0.00	30770	285.0 -> 169.0	45.7	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.60	5.17	-0.01	13133				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.90	5.80	0.00	164668				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.99	5.80	0.00	224043	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.93	5.83	-0.01	10162				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.68	5.83	-0.01	23882 (m)	399.0 -> 99.0	53.3	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.33	5.89	0.00	271752				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.56	6.49	-0.01	106103				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.06	6.49	-0.01	111271	427.0 -> 81.0	28.8	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.36	6.50	0.00	243276				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.08	6.51	0.00	22802	449.0 -> 99.0	52.2	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.28	6.50	-0.01	283149	413.0 -> 169.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.75	7.10	0.00	14227				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.68	7.10	0.00	28124 (m)	499.0 -> 99.0	47.0	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.19	7.11	0.00	253601				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.68	7.11	0.00	241377	463.0 -> 219.0	18.8	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.67	7.15	0.00	40364				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.23	7.15	0.00	39835	498.0 -> 478.0	4.6	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.17	7.35	-0.01	116189	533.0 -> 353.0	31.4	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.98	7.58	0.00	20769	549.0 -> 99.0	54.3	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.90	7.59	0.00	84659				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.47	7.59	-0.01	79187 (m)	570.0 -> 512.0	27.9	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.89	7.60	0.00	157497				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.13	7.60	0.00	242487	513.0 -> 219.0	16.2	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.04	7.63	-0.01	83492				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.18	7.63	-0.01	93123	527.0 -> 81.0	35.8	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.64	7.71	-0.01	46297				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.99	7.72	0.00	68499 (m)	584.0 -> 483.0	52.6	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.62	7.97	-0.01	19824	599.0 -> 99.0	51.6	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.46	8.01	0.00	207617				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.36	8.01	0.00	221610	563.0 -> 269.0	18.4	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.34	8.15	0.00	125929	633.0 -> 453.0	31.2	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.82	8.38	-0.01	232199				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.96	8.38	-0.01	225106	613.0 -> 319.0	18.5	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.55	8.83	-0.01	240843	663.0 -> 369.0	13.3	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.40	9.37	0.00	256213	713.0 -> 219.0	10.6	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.18	9.37	-0.01	259981				

7.4.2

7

Manual Integration Approval Summary

Sample Number:	OP83173-MSD2	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8605.D	**Analyst approved:**	12/03/20 09:54 Nancy Saunders
Injection Time:	12/03/20 03:45	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS4-Q
MS Model	G6470A
MS Instrument Serial	SG2004G105
Software_Firmware Version	10.0.142, FW: A.00.08.100
Tune Date & Time	30 November 2020 06:40:16
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.71E+0 [R] (Torr); 3.64E-5 [H] (Torr)

Source Parameters

Parameter	**Negative**
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	4000
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	0.70	0.69	-0.01	Pass	121321
302.00	302.01	0.01	Pass	0.70	0.71	0.01	Pass	4674
601.98	601.94	-0.04	Pass	0.70	0.70	0.00	Pass	75495
1033.99	1033.90	-0.09	Pass	0.70	0.72	0.02	Pass	302977
1633.95	1633.82	-0.13	Pass	0.70	0.68	-0.02	Pass	431231
2233.91	2233.66	-0.25	Pass	0.70	0.76	0.06	Pass	333117

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.13	0.13	Pass	0.70	0.60	-0.10	Pass	24437
112.99	112.98	-0.01	Pass	0.70	0.70	0.00	Pass	75311
302.00	302.00	0.00	Pass	0.70	0.72	0.02	Pass	4367
601.98	601.96	-0.02	Pass	0.70	0.68	-0.02	Pass	45977
1033.99	1033.95	-0.04	Pass	0.70	0.65	-0.05	Pass	250443
1633.95	1633.85	-0.10	Pass	0.70	0.66	-0.04	Pass	338869
2233.91	2233.79	-0.12	Pass	0.70	0.71	0.01	Pass	276895

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	1.20	1.17	-0.03	Pass	152782
302.00	302.00	0.00	Pass	1.20	1.44	0.24	Pass	7184
601.98	601.96	-0.02	Pass	1.20	1.58	0.38	Pass	142667
1033.99	1033.88	-0.11	Pass	1.20	1.63	0.43	Pass	691899
1633.95	1633.74	-0.21	Pass	1.20	1.47	0.27	Pass	1252610
2233.91	2233.70	-0.21	Pass	1.20	1.33	0.13	Pass	764247

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.11	0.11	Pass	1.20	1.05	-0.15	Pass	34886
112.99	112.97	-0.02	Pass	1.20	1.20	0.00	Pass	109320
302.00	302.00	0.00	Pass	1.20	1.33	0.13	Pass	6764
601.98	601.97	-0.01	Pass	1.20	1.41	0.21	Pass	106651
1033.99	1033.95	-0.04	Pass	1.20	1.40	0.20	Pass	552521
1633.95	1633.87	-0.08	Pass	1.20	1.28	0.08	Pass	989811
2233.91	2233.79	-0.12	Pass	1.20	1.16	-0.04	Pass	683197

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	2.50	2.47	-0.03	Pass	181035
302.00	302.01	0.01	Pass	2.50	2.69	0.19	Pass	9257
601.98	601.99	0.01	Pass	2.50	2.84	0.34	Pass	186097
1033.99	1033.94	-0.05	Pass	2.50	2.86	0.36	Pass	1146890
1633.95	1633.76	-0.19	Pass	2.50	2.77	0.27	Pass	2460022
2233.91	2233.66	-0.25	Pass	2.50	2.66	0.16	Pass	1973067

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.07	0.07	Pass	2.50	2.30	-0.20	Pass	47657
112.99	112.96	-0.03	Pass	2.50	2.46	-0.04	Pass	161799
302.00	301.98	-0.02	Pass	2.50	2.60	0.10	Pass	9094
601.98	601.98	0.00	Pass	2.50	2.69	0.19	Pass	161112
1033.99	1033.99	0.00	Pass	2.50	2.65	0.15	Pass	1021267
1633.95	1633.88	-0.07	Pass	2.50	2.48	-0.02	Pass	2315370
2233.91	2233.70	-0.21	Pass	2.50	2.45	-0.05	Pass	2188241

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8552.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 2:06:43 PM
Sample Name	:	ic118-0.5
Vial	:	P1-A2
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	76132	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	141049	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	206261	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	208556	20.00	µg/L	0.000
M8-PFOA	6.516	421.0 -> 376.0	304675	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	321156	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	203565	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	273481	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	320728	20.00	µg/L	0.000
M2-PFTeDA	9.397	715.0 -> 670.0	379348	20.00	µg/L	0.012
M8-FOSA	7.146	506.0 -> 78.0	51656	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	11765	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12967	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17829	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	72655	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	125879	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	101652	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	121332	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	17252	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	63492	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	72692	19.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-6:2FTS	6.502	429.0 -> 409.0	125893	19.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C2-8:2FTS	7.640	529.0 -> 509.0	101653	19.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-PFDoDA	8.391	615.0 -> 570.0	320676	20.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-PFTeDA	9.397	715.0 -> 670.0	378989	20.67	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C3-PFBS	3.867	302.0 -> 99.0	11821	20.24	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C3-PFHxS	5.842	402.0 -> 99.0	12966	20.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFBA	1.825	217.0 -> 172.0	76222	20.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C4-PFHpA	5.795	367.0 -> 322.0	208598	20.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFHxA	4.889	318.0 -> 273.0	206306	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C5-PFPeA	3.592	268.0 -> 223.0	141025	20.25	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C6-PFDA	7.604	519.0 -> 474.0	203659	20.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	273627	20.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C8-FOSA	7.146	506.0 -> 78.0	51666	20.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C8-PFOA	6.516	421.0 -> 376.0	304698	20.49 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C8-PFOS	7.096	507.0 -> 99.0	17824	19.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C9-PFNA	7.110	472.0 -> 427.0	321135	20.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
d3-MeFOSAA	7.587	573.0 -> 419.0	121324	22.79 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	17252	20.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
d5-EtFOSAA	7.722	589.0 -> 419.0	63492	21.44 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	1927	0.53 µg/L		82
6:2FTS	6.503	427.0 -> 407.0	3588	0.57 µg/L		93
8:2FTS	7.640	527.0 -> 507.0	3119	0.58 µg/L		81
EtFOSAA	7.723	584.0 -> 419.0	2692	0.60 µg/L	m	94
FOSA	7.147	498.0 -> 78.0	1364	0.54 µg/L		99
MeFOSAA	7.600	570.0 -> 419.0	2896	0.52 µg/L	m	93
PFBA	1.844	213.0 -> 169.0	684	0.49 µg/L		100
PFBS	3.870	299.0 -> 80.0	854	0.53 µg/L		99
PFDA	7.604	513.0 -> 469.0	8110	0.55 µg/L		96
PFDoDA	8.391	613.0 -> 569.0	8578	0.55 µg/L		98
PFDS	7.982	599.0 -> 80.0	724	0.54 µg/L		99
PFHpA	5.796	363.0 -> 319.0	6778	0.55 µg/L		99
PFHpS	6.514	449.0 -> 80.0	716	0.52 µg/L		84
PFHxA	4.890	313.0 -> 269.0	4947	0.53 µg/L		99
PFHxS	5.843	399.0 -> 80.0	861	0.53 µg/L	m	100
PFNA	7.111	463.0 -> 419.0	8240	0.53 µg/L		99
PFNS	7.577	549.0 -> 80.0	745	0.60 µg/L		96
PFOA	6.516	413.0 -> 369.0	9563	0.55 µg/L		100
PFOS	7.097	499.0 -> 80.0	979	0.57 µg/L	m	97
PFPeA	3.582	263.0 -> 219.0	3614	0.57 µg/L		100
PFPeS	5.011	349.0 -> 80.0	654	0.51 µg/L		97
PFTeDA	9.399	713.0 -> 669.0	11446	0.63 µg/L		97
PFTrDA	8.851	663.0 -> 619.0	9126	0.56 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	7877	0.55 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	4494	0.55 µg/L		95
9Cl-PF3ONS	7.367	531.0 -> 351.0	4129	0.50 µg/L		97
ADONA	5.894	377.0 -> 251.0	8779	0.50 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	1070	0.55 µg/L		92

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.49	1.84	0.02	684				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.05	1.82	0.00	76222				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.25	3.59	0.01	141025				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.57	3.58	0.00	3614				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.24	3.87	0.00	11821				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.53	3.87	0.00	854	299.0 -> 99.0	40.3	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.14	4.79	0.00	72692				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.53	4.79	0.00	1927	327.0 -> 81.0	53.0	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.29	4.89	0.00	206306				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.53	4.89	0.00	4947	313.0 -> 119.0	3.4	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.51	5.01	0.00	654	349.0 -> 99.0	49.1	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.50	5.18	0.00	17252				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.14	5.80	0.00	208598				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.55	5.80	0.00	6778	363.0 -> 169.0	17.7	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.33	5.84	0.00	12966				

Perfluorinated Compounds by LC/MS/SS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.53	5.84	0.00	861 (m)	399.0 -> 99.0	51.8	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.50	5.89	0.00	8779				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.64	6.50	0.00	125893				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.57	6.50	0.00	3588	427.0 -> 81.0	32.7	0.0	59.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.49	6.52	0.01	304698				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.52	6.51	0.00	716	449.0 -> 99.0	62.9	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.55	6.52	0.00	9563	413.0 -> 169.0	18.6	0.0	48.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.73	7.10	0.00	17824				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.57	7.10	0.00	979 (m)	499.0 -> 99.0	48.0	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.50	7.11	0.00	321135				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.53	7.11	0.00	8240	463.0 -> 219.0	19.0	0.0	48.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.06	7.15	0.00	51666				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.54	7.15	0.00	1364	498.0 -> 478.0	4.1	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.50	7.37	0.00	4129	533.0 -> 353.0	33.1	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.60	7.58	0.00	745	549.0 -> 99.0	52.5	25.8	85.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.79	7.59	0.00	121324				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.52	7.60	0.00	2896 (m)	570.0 -> 512.0	31.8	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.55	7.60	0.00	203659				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.55	7.60	0.00	8110	513.0 -> 219.0	17.6	0.0	45.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.52	7.64	0.00	101653				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.58	7.64	0.00	3119	527.0 -> 81.0	46.9	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.44	7.72	0.00	63492				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.60	7.72	0.00	2692 (m)	584.0 -> 483.0	51.0	25.3	85.3

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.54	7.98	0.00	724	599.0 -> 99.0	52.3	22.7	82.7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.38	8.01	0.00	273627				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.55	8.01	0.00	7877	563.0 -> 269.0	18.5	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.55	8.15	0.00	4494	633.0 -> 453.0	28.5	1.1	61.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.47	8.39	0.00	320676				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.55	8.39	0.00	8578	613.0 -> 319.0	18.8	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.56	8.85	0.01	9126	663.0 -> 369.0	12.9	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.63	9.40	0.02	11446	713.0 -> 219.0	11.2	0.0	40.2

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.67	9.40	0.01	378989				

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8552.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 14:06	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8553.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 2:22:11 PM
Sample Name	:	ic118-1.0
Vial	:	P1-A3
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	79808	20.00	µg/L	0.000
M5-PFPeA	3.580	268.0 -> 223.0	145674	20.00	µg/L	0.000
M5-PFHxA	4.889	318.0 -> 273.0	212649	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	216983	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	314784	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	330220	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	214457	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	284794	20.00	µg/L	0.000
M2-PFDoDA	8.379	615.0 -> 570.0	327653	20.00	µg/L	-0.012
M2-PFTeDA	9.372	715.0 -> 670.0	369490	20.00	µg/L	-0.013
M8-FOSA	7.146	506.0 -> 78.0	56025	20.00	µg/L	0.000
M3-PFBS	3.855	302.0 -> 99.0	12315	20.00	µg/L	-0.012
M3-PFHxS	5.829	402.0 -> 99.0	13428	20.00	µg/L	-0.012
M8-PFOS	7.096	507.0 -> 99.0	18821	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	75189	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	129431	20.00	µg/L	-0.012
M2-8:2FTS	7.640	529.0 -> 509.0	103222	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	115767	20.00	µg/L	0.000
M3-HFPO-DA	5.166	287.0 -> 169.0	17554	20.00	µg/L	-0.012
M5-EtFOSAA	7.722	589.0 -> 419.0	62202	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	75196	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C2-6:2FTS	6.490	429.0 -> 409.0	129448	20.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C2-8:2FTS	7.640	529.0 -> 509.0	103223	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFDoDA	8.379	615.0 -> 570.0	327743	20.92	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C2-PFTeDA	9.372	715.0 -> 670.0	369090	20.13	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFBS	3.855	302.0 -> 99.0	12313	21.08	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C3-PFHxS	5.829	402.0 -> 99.0	13429	21.06	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C4-PFBA	1.825	217.0 -> 172.0	79896	21.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C4-PFHpA	5.795	367.0 -> 322.0	216961	20.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C5-PFHxA	4.889	318.0 -> 273.0	212655	20.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C5-PFPeA	3.580	268.0 -> 223.0	145629	20.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C6-PFDA	7.604	519.0 -> 474.0	214551	21.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	285141	21.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C8-FOSA	7.146	506.0 -> 78.0	56021	21.75 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C8-PFOA	6.504	421.0 -> 376.0	314878	21.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOS	7.096	507.0 -> 99.0	18858	20.88 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C9-PFNA	7.110	472.0 -> 427.0	330244	21.08 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
d3-MeFOSAA	7.587	573.0 -> 419.0	115805	21.75 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C3-HFPO-DA	5.166	287.0 -> 169.0	17554	20.86 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
d5-EtFOSAA	7.722	589.0 -> 419.0	62202	21.01 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	3781	1.01 µg/L		94
6:2FTS	6.490	427.0 -> 407.0	6543	1.02 µg/L		97
8:2FTS	7.640	527.0 -> 507.0	5807	1.07 µg/L		94
EtFOSAA	7.723	584.0 -> 419.0	4059	0.93 µg/L	m	95
FOSA	7.147	498.0 -> 78.0	2641	0.97 µg/L		98
MeFOSAA	7.588	570.0 -> 419.0	4917	0.93 µg/L	m	98
PFBA	1.806	213.0 -> 169.0	1355	0.93 µg/L		100
PFBS	3.857	299.0 -> 80.0	1563	0.93 µg/L		100
PFDA	7.604	513.0 -> 469.0	14331	0.92 µg/L		98
PFDoDA	8.391	613.0 -> 569.0	14970	0.94 µg/L		98
PFDS	7.969	599.0 -> 80.0	1262	0.91 µg/L		99
PFHpA	5.796	363.0 -> 319.0	12203	0.95 µg/L		99
PFHpS	6.514	449.0 -> 80.0	1382	0.97 µg/L		97
PFHxA	4.890	313.0 -> 269.0	9023	0.95 µg/L		99
PFHxS	5.831	399.0 -> 80.0	1543	0.91 µg/L	m	98
PFNA	7.111	463.0 -> 419.0	14876	0.93 µg/L		99
PFNS	7.577	549.0 -> 80.0	1235	0.94 µg/L		98
PFOA	6.504	413.0 -> 369.0	17210	0.95 µg/L		100
PFOS	7.097	499.0 -> 80.0	1821	1.01 µg/L	m	97
PFPeA	3.582	263.0 -> 219.0	6478	0.99 µg/L		100
PFPeS	5.011	349.0 -> 80.0	1199	0.90 µg/L		98
PFTeDA	9.374	713.0 -> 669.0	18083	1.01 µg/L		98
PFTrDA	8.826	663.0 -> 619.0	15506	0.98 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	13978	0.94 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	7592	0.91 µg/L		99
9Cl-PF3ONS	7.354	531.0 -> 351.0	7351	0.84 µg/L		98
ADONA	5.894	377.0 -> 251.0	16096	0.88 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	1917	0.97 µg/L		97

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.93	1.81	-0.01	1355				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.02	1.82	0.00	79896				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.91	3.58	0.00	145629				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.99	3.58	0.00	6478				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.08	3.85	-0.01	12313				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.93	3.86	-0.01	1563	299.0 -> 99.0	41.1	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.80	4.79	0.00	75196				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.01	4.79	0.00	3781	327.0 -> 81.0	45.4	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.91	4.89	0.00	212655				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.95	4.89	0.00	9023	313.0 -> 119.0	3.8	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.90	5.01	0.00	1199	349.0 -> 99.0	48.1	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.86	5.17	-0.01	17554				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.95	5.80	0.00	216961				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.95	5.80	0.00	12203	363.0 -> 169.0	17.5	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.06	5.83	-0.01	13429				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.91	5.83	-0.01	1543 (m)	399.0 -> 99.0	53.2	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.88	5.89	0.00	16096				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.20	6.49	-0.01	129448				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.02	6.49	-0.01	6543	427.0 -> 81.0	30.6	0.0	59.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.17	6.50	0.00	314878				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.97	6.51	0.00	1382	449.0 -> 99.0	54.2	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	6.50	-0.01	17210	413.0 -> 169.0	18.6	0.0	48.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.88	7.10	0.00	18858				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.01	7.10	0.00	1821 (m)	499.0 -> 99.0	47.4	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.08	7.11	0.00	330244				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.93	7.11	0.00	14876	463.0 -> 219.0	19.0	0.0	48.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.75	7.15	0.00	56021				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.97	7.15	0.00	2641	498.0 -> 478.0	5.1	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.84	7.35	-0.01	7351	533.0 -> 353.0	32.6	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.94	7.58	0.00	1235	549.0 -> 99.0	54.4	25.8	85.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.75	7.59	0.00	115805				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.93	7.59	-0.01	4917 (m)	570.0 -> 512.0	29.1	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.65	7.60	0.00	214551				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.92	7.60	0.00	14331	513.0 -> 219.0	16.5	0.0	45.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.82	7.64	0.00	103223				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.07	7.64	0.00	5807	527.0 -> 81.0	39.2	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.01	7.72	0.00	62202				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.93	7.72	0.00	4059 (m)	584.0 -> 483.0	59.3	25.3	85.3

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.91	7.97	-0.01	1262	599.0 -> 99.0	53.1	22.7	82.7

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.23	8.01	0.00	285141				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.94	8.01	0.00	13978	563.0 -> 269.0	18.6	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.91	8.15	0.00	7592	633.0 -> 453.0	31.9	1.1	61.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.92	8.38	-0.01	327743				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.94	8.39	0.00	14970	613.0 -> 319.0	17.1	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.98	8.83	-0.01	15506	663.0 -> 369.0	13.0	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.01	9.37	0.00	18083	713.0 -> 219.0	10.8	0.0	40.2

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.13	9.37	-0.01	369090				

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8553.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 14:22	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8554.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 2:38:06 PM
Sample Name	:	ic118-2.0
Vial	:	P1-A4
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	78020	20.00	µg/L	0.000
M5-PFPeA	3.580	268.0 -> 223.0	142126	20.00	µg/L	0.000
M5-PFHxA	4.889	318.0 -> 273.0	207844	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	213806	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	308392	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	324711	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	208534	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	279677	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	325509	20.00	µg/L	0.000
M2-PFTeDA	9.397	715.0 -> 670.0	372167	20.00	µg/L	0.012
M8-FOSA	7.146	506.0 -> 78.0	55145	20.00	µg/L	0.000
M3-PFBS	3.855	302.0 -> 99.0	11962	20.00	µg/L	-0.012
M3-PFHxS	5.829	402.0 -> 99.0	13080	20.00	µg/L	-0.012
M8-PFOS	7.096	507.0 -> 99.0	18785	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	73404	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	126802	20.00	µg/L	-0.012
M2-8:2FTS	7.640	529.0 -> 509.0	103189	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	115112	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	17469	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	60779	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	73408	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-6:2FTS	6.490	429.0 -> 409.0	126807	19.79	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-8:2FTS	7.640	529.0 -> 509.0	103196	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFDoDA	8.391	615.0 -> 570.0	325480	20.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C2-PFTeDA	9.397	715.0 -> 670.0	372545	20.32	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C3-PFBS	3.855	302.0 -> 99.0	11964	20.48	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C3-PFHxS	5.829	402.0 -> 99.0	13101	20.54	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFBA	1.825	217.0 -> 172.0	78077	20.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFHpA	5.795	367.0 -> 322.0	213834	20.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFHxA	4.889	318.0 -> 273.0	207816	20.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFPeA	3.580	268.0 -> 223.0	142236	20.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C6-PFDA	7.604	519.0 -> 474.0	208589	21.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	279714	20.83 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C8-FOSA	7.146	506.0 -> 78.0	55134	21.41 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C8-PFOA	6.504	421.0 -> 376.0	308380	20.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C8-PFOS	7.096	507.0 -> 99.0	18793	20.81 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C9-PFNA	7.110	472.0 -> 427.0	324755	20.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
d3-MeFOSAA	7.587	573.0 -> 419.0	115074	21.61 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	17469	20.76 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d5-EtFOSAA	7.722	589.0 -> 419.0	60779	20.53 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	7952	2.18 µg/L		98
6:2FTS	6.490	427.0 -> 407.0	13159	2.08 µg/L		97
8:2FTS	7.640	527.0 -> 507.0	11007	2.03 µg/L		95
EtFOSAA	7.723	584.0 -> 419.0	8434	1.97 µg/L	m	99
FOSA	7.147	498.0 -> 78.0	5350	1.99 µg/L		98
MeFOSAA	7.600	570.0 -> 419.0	9885	1.88 µg/L	m	97
PFBA	1.831	213.0 -> 169.0	2798	1.96 µg/L		100
PFBS	3.857	299.0 -> 80.0	3189	1.96 µg/L		100
PFDA	7.604	513.0 -> 469.0	29919	1.97 µg/L		100
PFDoDA	8.391	613.0 -> 569.0	30773	1.95 µg/L		99
PFDS	7.982	599.0 -> 80.0	2594	1.91 µg/L		94
PFHpA	5.796	363.0 -> 319.0	24834	1.96 µg/L		100
PFHpS	6.514	449.0 -> 80.0	2821	2.03 µg/L		100
PFHxA	4.890	313.0 -> 269.0	18388	1.97 µg/L		100
PFHxS	5.831	399.0 -> 80.0	3269	1.99 µg/L	m	98
PFNA	7.111	463.0 -> 419.0	30307	1.93 µg/L		100
PFNS	7.577	549.0 -> 80.0	2699	2.07 µg/L		98
PFOA	6.504	413.0 -> 369.0	34887	1.97 µg/L		100
PFOS	7.097	499.0 -> 80.0	3464	1.93 µg/L	m	95
PFPeA	3.582	263.0 -> 219.0	12867	2.02 µg/L		100
PFPeS	5.011	349.0 -> 80.0	2515	1.94 µg/L		99
PFTeDA	9.387	713.0 -> 669.0	36434	2.03 µg/L		99
PFTrDA	8.838	663.0 -> 619.0	32153	2.01 µg/L		99
PFUnDA	8.010	563.0 -> 519.0	28188	1.92 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	15675	1.89 µg/L		100
9Cl-PF3ONS	7.367	531.0 -> 351.0	14967	1.77 µg/L		98
ADONA	5.894	377.0 -> 251.0	33570	1.88 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	3935	2.01 µg/L		98

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.96	1.83	0.01	2798				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.54	1.82	0.00	78077				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.42	3.58	0.00	142236				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.02	3.58	0.00	12867				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.48	3.85	-0.01	11964				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.96	3.86	-0.01	3189	299.0 -> 99.0	41.0	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.33	4.79	0.00	73408				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.18	4.79	0.00	7952	327.0 -> 81.0	42.8	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.43	4.89	0.00	207816				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.97	4.89	0.00	18388	313.0 -> 119.0	3.7	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.94	5.01	0.00	2515	349.0 -> 99.0	46.5	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.01	5.17	0.00	3935	285.0 -> 169.0	46.3	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.76	5.18	0.00	17469				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.65	5.80	0.00	213834				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.96	5.80	0.00	24834	363.0 -> 169.0	17.9	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.54	5.83	-0.01	13101				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.99	5.83	-0.01	3269 (m)	399.0 -> 99.0	53.0	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.88	5.89	0.00	33570				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.79	6.49	-0.01	126807				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.08	6.49	-0.01	13159	427.0 -> 81.0	30.7	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.73	6.50	0.00	308380				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.03	6.51	0.00	2821	449.0 -> 99.0	52.0	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.97	6.50	-0.01	34887	413.0 -> 169.0	18.4	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.81	7.10	0.00	18793				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.93	7.10	0.00	3464 (m)	499.0 -> 99.0	48.7	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.73	7.11	0.00	324755				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.93	7.11	0.00	30307	463.0 -> 219.0	18.6	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.41	7.15	0.00	55134				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.99	7.15	0.00	5350	498.0 -> 478.0	5.0	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.77	7.37	0.00	14967	533.0 -> 353.0	30.3	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.07	7.58	0.00	2699	549.0 -> 99.0	57.2	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.61	7.59	0.00	115074				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.88	7.60	0.00	9885 (m)	570.0 -> 512.0	29.9	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.05	7.60	0.00	208589				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.97	7.60	0.00	29919	513.0 -> 219.0	15.8	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.82	7.64	0.00	103196				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.03	7.64	0.00	11007	527.0 -> 81.0	38.5	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.53	7.72	0.00	60779				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.97	7.72	0.00	8434 (m)	584.0 -> 483.0	54.7	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.91	7.98	0.00	2594	599.0 -> 99.0	48.4	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.83	8.01	0.00	279714				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.92	8.01	0.00	28188	563.0 -> 269.0	18.3	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.89	8.15	0.00	15675	633.0 -> 453.0	30.9	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.78	8.39	0.00	325480				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.95	8.39	0.00	30773	613.0 -> 319.0	18.3	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.01	8.84	0.00	32153	663.0 -> 369.0	13.3	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.03	9.39	0.01	36434	713.0 -> 219.0	10.7	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.32	9.40	0.01	372545				

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8554.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 14:38	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8555.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 2:53:31 PM
Sample Name	:	ic118-5.0
Vial	:	P1-A5
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	77173	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	141133	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	206424	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	210551	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	303104	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	317771	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	203738	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	273484	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	320028	20.00	µg/L	0.000
M2-PFTeDA	9.384	715.0 -> 670.0	373853	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	54032	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	11957	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12820	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	18503	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	72987	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	126298	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	102021	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	112382	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	16803	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	59662	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	72993	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-6:2FTS	6.502	429.0 -> 409.0	126297	19.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-8:2FTS	7.640	529.0 -> 509.0	102013	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-PFDoDA	8.391	615.0 -> 570.0	319875	20.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C2-PFTeDA	9.384	715.0 -> 670.0	374273	20.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C3-PFBS	3.867	302.0 -> 99.0	11957	20.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFHxS	5.842	402.0 -> 99.0	12823	20.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C4-PFBA	1.825	217.0 -> 172.0	77210	20.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFHpA	5.795	367.0 -> 322.0	210622	20.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C5-PFHxA	4.889	318.0 -> 273.0	206382	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C5-PFPeA	3.592	268.0 -> 223.0	141105	20.26	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C6-PFDA	7.604	519.0 -> 474.0	203774	20.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	273733	20.39 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C8-FOSA	7.146	506.0 -> 78.0	54041	20.98 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C8-PFOA	6.504	421.0 -> 376.0	303026	20.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C8-PFOS	7.096	507.0 -> 99.0	18501	20.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C9-PFNA	7.110	472.0 -> 427.0	317821	20.29 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
d3-MeFOSAA	7.587	573.0 -> 419.0	112375	21.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	16803	19.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d5-EtFOSAA	7.722	589.0 -> 419.0	59662	20.15 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	18539	5.10 µg/L		97
6:2FTS	6.503	427.0 -> 407.0	31971	5.08 µg/L		99
8:2FTS	7.640	527.0 -> 507.0	26966	5.02 µg/L		97
EtFOSAA	7.723	584.0 -> 419.0	20841	4.96 µg/L	m	99
FOSA	7.147	498.0 -> 78.0	12468	4.73 µg/L		99
MeFOSAA	7.588	570.0 -> 419.0	23949	4.66 µg/L	m	99
PFBA	1.831	213.0 -> 169.0	6706	4.76 µg/L		100
PFBS	3.870	299.0 -> 80.0	7891	4.86 µg/L		99
PFDA	7.604	513.0 -> 469.0	72165	4.86 µg/L		99
PFDoDA	8.391	613.0 -> 569.0	74173	4.77 µg/L		100
PFDS	7.982	599.0 -> 80.0	6049	4.54 µg/L		100
PFHpA	5.796	363.0 -> 319.0	60012	4.82 µg/L		99
PFHpS	6.514	449.0 -> 80.0	6979	5.11 µg/L		100
PFHxA	4.890	313.0 -> 269.0	45117	4.87 µg/L		100
PFHxS	5.843	399.0 -> 80.0	7813	4.84 µg/L	m	99
PFNA	7.111	463.0 -> 419.0	74075	4.82 µg/L		100
PFNS	7.577	549.0 -> 80.0	6108	4.75 µg/L		99
PFOA	6.516	413.0 -> 369.0	85089	4.89 µg/L		100
PFOS	7.097	499.0 -> 80.0	8300	4.69 µg/L	m	98
PFPeA	3.594	263.0 -> 219.0	30780	4.86 µg/L		100
PFPeS	5.011	349.0 -> 80.0	5904	4.56 µg/L		98
PFTeDA	9.387	713.0 -> 669.0	90067	4.99 µg/L		100
PFTrDA	8.838	663.0 -> 619.0	77679	4.84 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	68492	4.78 µg/L		100
11Cl-PF3OUdS	8.154	631.0 -> 451.0	38119	4.69 µg/L		98
9Cl-PF3ONS	7.354	531.0 -> 351.0	35691	4.31 µg/L		100
ADONA	5.894	377.0 -> 251.0	81147	4.63 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	9433	5.00 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.76	1.83	0.01	6706				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.31	1.82	0.00	77210				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.26	3.59	0.01	141105				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.86	3.59	0.01	30780				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.47	3.87	0.00	11957				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.86	3.87	0.00	7891	299.0 -> 99.0	40.3	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.22	4.79	0.00	72993				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.10	4.79	0.00	18539	327.0 -> 81.0	43.6	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.29	4.89	0.00	206382				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.87	4.89	0.00	45117	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.56	5.01	0.00	5904	349.0 -> 99.0	48.1	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.00	5.17	0.00	9433	285.0 -> 169.0	47.5	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.97	5.18	0.00	16803				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.34	5.80	0.00	210622				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.82	5.80	0.00	60012	363.0 -> 169.0	17.8	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.11	5.84	0.00	12823				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.84	5.84	0.00	7813 (m)	399.0 -> 99.0	51.4	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.63	5.89	0.00	81147				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.71	6.50	0.00	126297				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.08	6.50	0.00	31971	427.0 -> 81.0	29.6	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.37	6.50	0.00	303026				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.11	6.51	0.00	6979	449.0 -> 99.0	52.3	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.89	6.52	0.00	85089	413.0 -> 169.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.48	7.10	0.00	18501				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.69	7.10	0.00	8300 (m)	499.0 -> 99.0	47.1	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.29	7.11	0.00	317821				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.82	7.11	0.00	74075	463.0 -> 219.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.98	7.15	0.00	54041				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.73	7.15	0.00	12468	498.0 -> 478.0	4.6	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.31	7.35	-0.01	35691	533.0 -> 353.0	31.7	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.75	7.58	0.00	6108	549.0 -> 99.0	56.7	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.11	7.59	0.00	112375				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.66	7.59	-0.01	23949 (m)	570.0 -> 512.0	28.5	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.56	7.60	0.00	203774				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.86	7.60	0.00	72165	513.0 -> 219.0	16.2	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.59	7.64	0.00	102013				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.02	7.64	0.00	26966	527.0 -> 81.0	37.4	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.15	7.72	0.00	59662				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.96	7.72	0.00	20841 (m)	584.0 -> 483.0	56.3	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.54	7.98	0.00	6049	599.0 -> 99.0	52.8	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.39	8.01	0.00	273733				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.78	8.01	0.00	68492	563.0 -> 269.0	18.1	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.69	8.15	0.00	38119	633.0 -> 453.0	32.3	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.42	8.39	0.00	319875				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.77	8.39	0.00	74173	613.0 -> 319.0	18.0	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.84	8.84	0.00	77679	663.0 -> 369.0	13.0	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.99	9.39	0.01	90067	713.0 -> 219.0	10.3	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.41	9.38	0.00	374273				

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8555.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 14:53	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8556.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 3:08:57 PM
Sample Name	:	ic118-10
Vial	:	P1-A6
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	78002	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	142735	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	208246	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	212148	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	306782	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	324445	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	206212	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	276611	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	324268	20.00	µg/L	0.000
M2-PFTeDA	9.372	715.0 -> 670.0	380934	20.00	µg/L	-0.012
M8-FOSA	7.146	506.0 -> 78.0	54335	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	12074	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	13183	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	18471	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	74897	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	128708	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	104217	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	110251	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	17313	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	61629	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	74917	19.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C2-6:2FTS	6.502	429.0 -> 409.0	128703	20.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-8:2FTS	7.640	529.0 -> 509.0	104217	20.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-PFDoDA	8.391	615.0 -> 570.0	324174	20.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFTeDA	9.372	715.0 -> 670.0	380418	20.75	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C3-PFBS	3.867	302.0 -> 99.0	12080	20.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFHxS	5.842	402.0 -> 99.0	13183	20.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C4-PFBA	1.825	217.0 -> 172.0	78059	20.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFHpA	5.795	367.0 -> 322.0	212177	20.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFHxA	4.889	318.0 -> 273.0	208246	20.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	3.592	268.0 -> 223.0	142748	20.50	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C6-PFDA	7.604	519.0 -> 474.0	206238	20.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	276644	20.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C8-FOSA	7.146	506.0 -> 78.0	54334	21.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C8-PFOA	6.504	421.0 -> 376.0	306780	20.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C8-PFOS	7.096	507.0 -> 99.0	18468	20.45 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C9-PFNA	7.110	472.0 -> 427.0	324380	20.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
d3-MeFOSAA	7.587	573.0 -> 419.0	110703	20.79 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	17313	20.57 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
d5-EtFOSAA	7.722	589.0 -> 419.0	61629	20.82 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	38264	10.26 µg/L		100
6:2FTS	6.503	427.0 -> 407.0	64177	10.01 µg/L		99
8:2FTS	7.640	527.0 -> 507.0	55851	10.18 µg/L		99
EtFOSAA	7.723	584.0 -> 419.0	42352	9.75 µg/L	m	98
FOSA	7.147	498.0 -> 78.0	24824	9.37 µg/L		99
MeFOSAA	7.588	570.0 -> 419.0	47639	9.46 µg/L	m	98
PFBA	1.831	213.0 -> 169.0	13668	9.60 µg/L		100
PFBS	3.870	299.0 -> 80.0	15930	9.72 µg/L		99
PFDA	7.604	513.0 -> 469.0	146136	9.73 µg/L		100
PFDoDA	8.391	613.0 -> 569.0	150210	9.54 µg/L		100
PFDS	7.982	599.0 -> 80.0	12802	9.51 µg/L		97
PFHpA	5.796	363.0 -> 319.0	121822	9.70 µg/L		100
PFHpS	6.514	449.0 -> 80.0	13507	9.62 µg/L		99
PFHxA	4.890	313.0 -> 269.0	90583	9.69 µg/L		100
PFHxS	5.843	399.0 -> 80.0	15501	9.35 µg/L	m	99
PFNA	7.111	463.0 -> 419.0	148732	9.48 µg/L		99
PFNS	7.577	549.0 -> 80.0	12689	9.88 µg/L		100
PFOA	6.516	413.0 -> 369.0	170458	9.68 µg/L		100
PFOS	7.097	499.0 -> 80.0	16903	9.58 µg/L	m	98
PFPeA	3.594	263.0 -> 219.0	61602	9.62 µg/L		100
PFPeS	5.011	349.0 -> 80.0	12023	9.21 µg/L		99
PFTeDA	9.375	713.0 -> 669.0	181021	9.84 µg/L		100
PFTrDA	8.838	663.0 -> 619.0	157781	9.64 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	141159	9.74 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	78324	9.50 µg/L		99
9Cl-PF3ONS	7.354	531.0 -> 351.0	74291	8.87 µg/L		99
ADONA	5.894	377.0 -> 251.0	163217	9.21 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	18781	9.67 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.60	1.83	0.01	13668				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.54	1.82	0.00	78059				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.50	3.59	0.01	142748				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.62	3.59	0.01	61602				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.68	3.87	0.00	12080				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.72	3.87	0.00	15930	299.0 -> 99.0	40.5	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.73	4.79	0.00	74917				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.26	4.79	0.00	38264	327.0 -> 81.0	41.2	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.48	4.89	0.00	208246				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.69	4.89	0.00	90583	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.21	5.01	0.00	12023	349.0 -> 99.0	47.8	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.67	5.17	0.00	18781	285.0 -> 169.0	47.0	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.57	5.18	0.00	17313				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.49	5.80	0.00	212177				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.70	5.80	0.00	121822	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.67	5.84	0.00	13183				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.35	5.84	0.00	15501 (m)	399.0 -> 99.0	52.9	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.21	5.89	0.00	163217				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.08	6.50	0.00	128703				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.01	6.50	0.00	64177	427.0 -> 81.0	29.3	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.63	6.50	0.00	306780				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.62	6.51	0.00	13507	449.0 -> 99.0	52.5	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.68	6.52	0.00	170458	413.0 -> 169.0	18.5	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.45	7.10	0.00	18468				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.58	7.10	0.00	16903 (m)	499.0 -> 99.0	46.9	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.71	7.11	0.00	324380				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.48	7.11	0.00	148732	463.0 -> 219.0	18.8	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.10	7.15	0.00	54334				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.37	7.15	0.00	24824	498.0 -> 478.0	4.8	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.87	7.35	-0.01	74291	533.0 -> 353.0	31.1	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.88	7.58	0.00	12689	549.0 -> 99.0	55.9	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.79	7.59	0.00	110703				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.46	7.59	-0.01	47639 (m)	570.0 -> 512.0	29.0	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.81	7.60	0.00	206238				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.73	7.60	0.00	146136	513.0 -> 219.0	15.8	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.02	7.64	0.00	104217				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.18	7.64	0.00	55851	527.0 -> 81.0	35.4	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.82	7.72	0.00	61629				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.75	7.72	0.00	42352 (m)	584.0 -> 483.0	53.5	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.51	7.98	0.00	12802	599.0 -> 99.0	50.5	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.60	8.01	0.00	276644				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.74	8.01	0.00	141159	563.0 -> 269.0	17.7	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.50	8.15	0.00	78324	633.0 -> 453.0	30.7	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.70	8.39	0.00	324174				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.54	8.39	0.00	150210	613.0 -> 319.0	17.8	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.64	8.84	0.00	157781	663.0 -> 369.0	13.1	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.84	9.37	0.00	181021	713.0 -> 219.0	10.4	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.75	9.37	-0.01	380418				

7.5.6

7

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8556.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 15:08	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

4Q8557.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8557.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 3:24:23 PM
Sample Name	:	icc118-20
Vial	:	P1-A7
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	73262	20.00	µg/L	0.000
M5-PFPeA	3.580	268.0 -> 223.0	134545	20.00	µg/L	0.000
M5-PFHxA	4.889	318.0 -> 273.0	196748	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	200330	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	288736	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	305536	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	192231	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	262419	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	301382	20.00	µg/L	0.000
M2-PFTeDA	9.384	715.0 -> 670.0	358225	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	50265	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	11270	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12302	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17621	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	72656	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	122739	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	100875	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	103475	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	15978	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	56381	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	72648	19.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C2-6:2FTS	6.502	429.0 -> 409.0	122724	19.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-8:2FTS	7.640	529.0 -> 509.0	100868	19.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C2-PFDoDA	8.391	615.0 -> 570.0	301236	19.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFTeDA	9.384	715.0 -> 670.0	357640	19.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C3-PFBS	3.867	302.0 -> 99.0	11273	19.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C3-PFHxS	5.842	402.0 -> 99.0	12300	19.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C4-PFBA	1.825	217.0 -> 172.0	73313	19.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C4-PFHpA	5.795	367.0 -> 322.0	200343	19.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C5-PFHxA	4.889	318.0 -> 273.0	196763	19.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C5-PFPeA	3.580	268.0 -> 223.0	134662	19.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C6-PFDA	7.604	519.0 -> 474.0	192322	19.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	262500	19.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C8-FOSA	7.146	506.0 -> 78.0	50273	19.52 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-PFOA	6.504	421.0 -> 376.0	288693	19.41 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOS	7.096	507.0 -> 99.0	17648	19.54 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C9-PFNA	7.110	472.0 -> 427.0	305624	19.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
d3-MeFOSAA	7.587	573.0 -> 419.0	103507	19.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	15978	18.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
d5-EtFOSAA	7.722	589.0 -> 419.0	56381	19.04 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	74031	20.46 µg/L		100
6:2FTS	6.503	427.0 -> 407.0	125243	20.49 µg/L		100
8:2FTS	7.640	527.0 -> 507.0	106867	20.12 µg/L		100
EtFOSAA	7.723	584.0 -> 419.0	80402	20.23 µg/L	m	100
FOSA	7.147	498.0 -> 78.0	48144	19.64 µg/L		100
MeFOSAA	7.600	570.0 -> 419.0	90951	19.24 µg/L	m	100
PFBA	1.819	213.0 -> 169.0	26420	19.75 µg/L		100
PFBS	3.870	299.0 -> 80.0	30344	19.83 µg/L		100
PFDA	7.604	513.0 -> 469.0	279407	19.95 µg/L		100
PFDoDA	8.391	613.0 -> 569.0	291636	19.92 µg/L		100
PFDS	7.982	599.0 -> 80.0	24443	19.14 µg/L		100
PFHpA	5.796	363.0 -> 319.0	238094	20.08 µg/L		100
PFHpS	6.514	449.0 -> 80.0	26560	20.28 µg/L		100
PFHxA	4.890	313.0 -> 269.0	177169	20.06 µg/L		100
PFHxS	5.843	399.0 -> 80.0	30378	19.63 µg/L	m	100
PFNA	7.111	463.0 -> 419.0	288734	19.53 µg/L		100
PFNS	7.577	549.0 -> 80.0	24849	20.27 µg/L		100
PFOA	6.516	413.0 -> 369.0	332225	20.05 µg/L		100
PFOS	7.097	499.0 -> 80.0	33018	19.61 µg/L	m	100
PFPeA	3.582	263.0 -> 219.0	119318	19.78 µg/L		100
PFPeS	5.011	349.0 -> 80.0	23839	19.55 µg/L		100
PFTeDA	9.375	713.0 -> 669.0	350228	20.25 µg/L		100
PFTrDA	8.838	663.0 -> 619.0	305460	19.86 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	272852	19.84 µg/L		100
11Cl-PF3OUdS	8.154	631.0 -> 451.0	151129	19.73 µg/L		100
9Cl-PF3ONS	7.367	531.0 -> 351.0	143244	18.35 µg/L		100
ADONA	5.894	377.0 -> 251.0	319488	19.15 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	36519	20.37 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

7.5.7

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Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.75	1.82	0.00	26420				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.29	1.82	0.00	73313				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.34	3.58	0.00	134662				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.78	3.58	0.00	119318				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.30	3.87	0.00	11273				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.83	3.87	0.00	30344	299.0 -> 99.0	40.9	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.13	4.79	0.00	72648				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.46	4.79	0.00	74031	327.0 -> 81.0	41.5	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.35	4.89	0.00	196763				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.06	4.89	0.00	177169	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.55	5.01	0.00	23839	349.0 -> 99.0	46.9	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.37	5.17	0.00	36519	285.0 -> 169.0	47.4	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.99	5.18	0.00	15978				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.34	5.80	0.00	200343				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.08	5.80	0.00	238094	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.29	5.84	0.00	12300				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.63	5.84	0.00	30378 (m)	399.0 -> 99.0	51.9	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.15	5.89	0.00	319488				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.15	6.50	0.00	122724				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.49	6.50	0.00	125243	427.0 -> 81.0	29.0	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.41	6.50	0.00	288693				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.28	6.51	0.00	26560	449.0 -> 99.0	52.0	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.05	6.52	0.00	332225	413.0 -> 169.0	18.6	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.54	7.10	0.00	17648				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.61	7.10	0.00	33018 (m)	499.0 -> 99.0	45.7	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.51	7.11	0.00	305624				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.53	7.11	0.00	288734	463.0 -> 219.0	18.6	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.52	7.15	0.00	50273				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.64	7.15	0.00	48144	498.0 -> 478.0	4.4	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.35	7.37	0.00	143244	533.0 -> 353.0	31.5	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.27	7.58	0.00	24849	549.0 -> 99.0	55.8	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.44	7.59	0.00	103507				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.24	7.60	0.00	90951 (m)	570.0 -> 512.0	28.1	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.41	7.60	0.00	192322				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.95	7.60	0.00	279407	513.0 -> 219.0	15.9	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.37	7.64	0.00	100868				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.12	7.64	0.00	106867	527.0 -> 81.0	35.8	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.04	7.72	0.00	56381				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.23	7.72	0.00	80402 (m)	584.0 -> 483.0	55.3	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.14	7.98	0.00	24443	599.0 -> 99.0	52.7	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.55	8.01	0.00	262500				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.84	8.01	0.00	272852	563.0 -> 269.0	18.0	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.73	8.15	0.00	151129	633.0 -> 453.0	31.1	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.23	8.39	0.00	301236				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.92	8.39	0.00	291636	613.0 -> 319.0	17.9	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.86	8.84	0.00	305460	663.0 -> 369.0	13.0	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.25	9.37	0.00	350228	713.0 -> 219.0	10.2	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.50	9.38	0.00	357640				

7.5.7

7

Manual Integration Approval Summary

Sample Number:	S4Q118-ICC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8557.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 15:24	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8558.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 3:39:48 PM
Sample Name	:	ic118-50
Vial	:	P1-A8
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	73224	20.00	µg/L	-0.013
M5-PFPeA	3.592	268.0 -> 223.0	133690	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	195591	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	199144	20.00	µg/L	0.000
M8-PFOA	6.516	421.0 -> 376.0	283139	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	298219	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	184611	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	253804	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	297272	20.00	µg/L	0.000
M2-PFTeDA	9.384	715.0 -> 670.0	354724	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	47005	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	11176	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12245	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17400	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	78548	20.00	µg/L	0.000
M2-6:2FTS	6.502	429.0 -> 409.0	129575	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	105413	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	93978	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	15994	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	55417	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	78551	20.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C2-6:2FTS	6.502	429.0 -> 409.0	129584	20.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-8:2FTS	7.640	529.0 -> 509.0	105416	20.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C2-PFDoDA	8.391	615.0 -> 570.0	297248	18.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-PFTeDA	9.384	715.0 -> 670.0	354191	19.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-PFBS	3.867	302.0 -> 99.0	11192	19.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C3-PFHxS	5.842	402.0 -> 99.0	12244	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C4-PFBA	1.812	217.0 -> 172.0	73330	19.29	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C4-PFHpA	5.795	367.0 -> 322.0	199130	19.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C5-PFHxA	4.889	318.0 -> 273.0	195568	19.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C5-PFPeA	3.592	268.0 -> 223.0	134215	19.27	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C6-PFDA	7.604	519.0 -> 474.0	184794	18.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	253941	18.91 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C8-FOSA	7.146	506.0 -> 78.0	47042	18.26 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C8-PFOA	6.516	421.0 -> 376.0	283091	19.03 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C8-PFOS	7.096	507.0 -> 99.0	17402	19.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C9-PFNA	7.110	472.0 -> 427.0	298298	19.04 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
d3-MeFOSAA	7.587	573.0 -> 419.0	93982	17.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	15994	19.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
d5-EtFOSAA	7.722	589.0 -> 419.0	55417	18.72 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	180802	46.22 µg/L		100
6:2FTS	6.490	427.0 -> 407.0	295480	45.79 µg/L		99
8:2FTS	7.640	527.0 -> 507.0	250536	45.13 µg/L		100
EtFOSAA	7.723	584.0 -> 419.0	197020	50.43 µg/L	m	98
FOSA	7.147	498.0 -> 78.0	112114	48.90 µg/L		100
MeFOSAA	7.600	570.0 -> 419.0	206007	47.97 µg/L	m	99
PFBA	1.819	213.0 -> 169.0	64897	48.54 µg/L		100
PFBS	3.870	299.0 -> 80.0	74120	48.85 µg/L		99
PFDA	7.604	513.0 -> 469.0	657940	48.91 µg/L		100
PFDoDA	8.391	613.0 -> 569.0	705221	48.84 µg/L		100
PFDS	7.982	599.0 -> 80.0	59914	48.51 µg/L		99
PFHpA	5.796	363.0 -> 319.0	580084	49.22 µg/L		99
PFHpS	6.514	449.0 -> 80.0	64089	49.16 µg/L		100
PFHxA	4.890	313.0 -> 269.0	433615	49.40 µg/L		100
PFHxS	5.843	399.0 -> 80.0	74865	48.59 µg/L	m	100
PFNA	7.111	463.0 -> 419.0	699972	48.52 µg/L		100
PFNS	7.577	549.0 -> 80.0	61001	50.40 µg/L		98
PFOA	6.516	413.0 -> 369.0	798456	49.13 µg/L		100
PFOS	7.097	499.0 -> 80.0	81006	48.72 µg/L	m	99
PFPeA	3.594	263.0 -> 219.0	294501	49.13 µg/L		100
PFPeS	5.011	349.0 -> 80.0	58734	48.59 µg/L		100
PFTeDA	9.375	713.0 -> 669.0	841623	49.15 µg/L		100
PFTrDA	8.838	663.0 -> 619.0	746408	49.00 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	648933	48.78 µg/L		100
11Cl-PF3OUdS	8.154	631.0 -> 451.0	370641	49.05 µg/L		99
9Cl-PF3ONS	7.367	531.0 -> 351.0	352228	46.98 µg/L		99
ADONA	5.894	377.0 -> 251.0	783109	47.86 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	88816	49.50 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	48.54	1.82	0.00	64897				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.29	1.81	-0.01	73330				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.27	3.59	0.01	134215				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.13	3.59	0.01	294501				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.16	3.87	0.00	11192				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	48.85	3.87	0.00	74120	299.0 -> 99.0	40.4	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.68	4.79	0.00	78551				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	46.22	4.79	0.00	180802	327.0 -> 81.0	41.6	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.23	4.89	0.00	195568				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.40	4.89	0.00	433615	313.0 -> 119.0	3.5	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	48.59	5.01	0.00	58734	349.0 -> 99.0	46.7	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	49.50	5.17	0.00	88816	285.0 -> 169.0	48.1	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.00	5.18	0.00	15994				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.23	5.80	0.00	199130				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	49.22	5.80	0.00	580084	363.0 -> 169.0	17.7	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.20	5.84	0.00	12244				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	48.59	5.84	0.00	74865 (m)	399.0 -> 99.0	52.1	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	47.86	5.89	0.00	783109				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.22	6.50	0.00	129584				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	45.79	6.49	-0.01	295480	427.0 -> 81.0	29.4	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.03	6.52	0.01	283091				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	49.16	6.51	0.00	64089	449.0 -> 99.0	52.1	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.13	6.52	0.00	798456	413.0 -> 169.0	18.6	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.27	7.10	0.00	17402				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.72	7.10	0.00	81006 (m)	499.0 -> 99.0	46.3	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.04	7.11	0.00	298298				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	48.52	7.11	0.00	699972	463.0 -> 219.0	18.8	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.26	7.15	0.00	47042				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.90	7.15	0.00	112114	498.0 -> 478.0	4.3	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	46.98	7.37	0.00	352228	533.0 -> 353.0	31.1	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.40	7.58	0.00	61001	549.0 -> 99.0	54.4	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.65	7.59	0.00	93982				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	47.97	7.60	0.00	206007 (m)	570.0 -> 512.0	28.8	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.65	7.60	0.00	184794				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	48.91	7.60	0.00	657940	513.0 -> 219.0	15.9	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.25	7.64	0.00	105416				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	45.13	7.64	0.00	250536	527.0 -> 81.0	36.1	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.72	7.72	0.00	55417				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	50.43	7.72	0.00	197020 (m)	584.0 -> 483.0	53.7	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	48.51	7.98	0.00	59914	599.0 -> 99.0	52.0	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.91	8.01	0.00	253941				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	48.78	8.01	0.00	648933	563.0 -> 269.0	18.1	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.05	8.15	0.00	370641	633.0 -> 453.0	31.6	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.98	8.39	0.00	297248				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	48.84	8.39	0.00	705221	613.0 -> 319.0	17.7	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.00	8.84	0.00	746408	663.0 -> 369.0	13.1	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.15	9.37	0.00	841623	713.0 -> 219.0	10.3	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.31	9.38	0.00	354191				

7.5.8

7

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8558.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 15:39	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8559.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 3:55:15 PM
Sample Name	:	ic118-100
Vial	:	P1-A9
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.812	217.0 -> 172.0	71972	20.00	µg/L	-0.013
M5-PFPeA	3.592	268.0 -> 223.0	132568	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	193434	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	195444	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	270336	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	284407	20.00	µg/L	0.000
M6-PFDA	7.591	519.0 -> 474.0	171788	20.00	µg/L	-0.012
M7-PFUnDA	8.009	570.0 -> 525.0	243172	20.00	µg/L	0.000
M2-PFDoDA	8.379	615.0 -> 570.0	289808	20.00	µg/L	-0.012
M2-PFTeDA	9.372	715.0 -> 670.0	346974	20.00	µg/L	-0.012
M8-FOSA	7.146	506.0 -> 78.0	43590	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	10865	20.00	µg/L	0.000
M3-PFHxS	5.829	402.0 -> 99.0	11997	20.00	µg/L	-0.012
M8-PFOS	7.084	507.0 -> 99.0	17024	20.00	µg/L	-0.012
M2-4:2FTS	4.788	329.0 -> 309.0	87256	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	135925	20.00	µg/L	-0.012
M2-8:2FTS	7.627	529.0 -> 509.0	112495	20.00	µg/L	-0.012
M3-MeFOSAA	7.587	573.0 -> 419.0	79091	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	16291	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	54165	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	87280	22.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%		
13C2-6:2FTS	6.490	429.0 -> 409.0	135930	21.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-8:2FTS	7.627	529.0 -> 509.0	112489	21.60	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C2-PFDoDA	8.379	615.0 -> 570.0	289759	18.50	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C2-PFTeDA	9.372	715.0 -> 670.0	346902	18.92	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C3-PFBS	3.867	302.0 -> 99.0	10867	18.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C3-PFHxS	5.829	402.0 -> 99.0	11995	18.81	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C4-PFBA	1.812	217.0 -> 172.0	72081	18.96	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C4-PFHpA	5.795	367.0 -> 322.0	195450	18.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C5-PFHxA	4.889	318.0 -> 273.0	193424	19.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C5-PFPeA	3.592	268.0 -> 223.0	132598	19.04	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C6-PFDA	7.591	519.0 -> 474.0	171793	17.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	243180	18.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C8-FOSA	7.146	506.0 -> 78.0	43589	16.92 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.6%		
13C8-PFOA	6.504	421.0 -> 376.0	270310	18.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C8-PFOS	7.084	507.0 -> 99.0	17022	18.85 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C9-PFNA	7.110	472.0 -> 427.0	284373	18.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
d3-MeFOSAA	7.587	573.0 -> 419.0	79082	14.85 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	16291	19.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
d5-EtFOSAA	7.722	589.0 -> 419.0	54165	18.29 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	367217	84.50 µg/L		100
6:2FTS	6.490	427.0 -> 407.0	568292	83.96 µg/L		100
8:2FTS	7.628	527.0 -> 507.0	488092	82.39 µg/L		100
EtFOSAA	7.723	584.0 -> 419.0	380970	99.77 µg/L	m	97
FOSA	7.147	498.0 -> 78.0	214094	100.70 µg/L		100
MeFOSAA	7.588	570.0 -> 419.0	365863	101.24 µg/L	m	97
PFBA	1.806	213.0 -> 169.0	132499	100.83 µg/L		100
PFBS	3.870	299.0 -> 80.0	148467	100.65 µg/L		100
PFDA	7.592	513.0 -> 469.0	1259163	100.59 µg/L		100
PFDoDA	8.379	613.0 -> 569.0	1416989	100.66 µg/L		99
PFDS	7.969	599.0 -> 80.0	119517	100.99 µg/L		97
PFHpA	5.796	363.0 -> 319.0	1161581	100.42 µg/L		100
PFHpS	6.514	449.0 -> 80.0	128223	100.40 µg/L		100
PFHxA	4.890	313.0 -> 269.0	870964	100.33 µg/L		100
PFHxS	5.831	399.0 -> 80.0	152217	100.85 µg/L	m	99
PFNA	7.111	463.0 -> 419.0	1388170	100.90 µg/L		100
PFNS	7.577	549.0 -> 80.0	118135	99.77 µg/L		99
PFOA	6.504	413.0 -> 369.0	1558891	100.46 µg/L		100
PFOS	7.085	499.0 -> 80.0	163926	100.77 µg/L	m	99
PFPeA	3.594	263.0 -> 219.0	597581	100.53 µg/L		100
PFPeS	5.011	349.0 -> 80.0	118582	100.90 µg/L		99
PFTeDA	9.375	713.0 -> 669.0	1681318	100.39 µg/L		100
PFTrDA	8.838	663.0 -> 619.0	1498596	100.57 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	1283423	100.68 µg/L		100
11Cl-PF3OUdS	8.141	631.0 -> 451.0	741037	100.60 µg/L		99
9Cl-PF3ONS	7.354	531.0 -> 351.0	711484	101.99 µg/L		99
ADONA	5.894	377.0 -> 251.0	1583121	101.34 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	183149	100.21 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.83	1.81	-0.01	132499				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.96	1.81	-0.01	72081				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.04	3.59	0.01	132598				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.53	3.59	0.01	597581				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.60	3.87	0.00	10867				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.65	3.87	0.00	148467	299.0 -> 99.0	40.6	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.98	4.79	0.00	87280				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	84.50	4.79	0.00	367217	327.0 -> 81.0	41.4	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.02	4.89	0.00	193424				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.33	4.89	0.00	870964	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.90	5.01	0.00	118582	349.0 -> 99.0	47.3	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	100.21	5.17	0.00	183149	285.0 -> 169.0	47.6	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.36	5.18	0.00	16291				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.87	5.80	0.00	195450				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.42	5.80	0.00	1161581	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.81	5.83	-0.01	11995				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.85	5.83	-0.01	152217 (m)	399.0 -> 99.0	52.5	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	101.34	5.89	0.00	1583121				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.21	6.49	-0.01	135930				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	83.96	6.49	-0.01	568292	427.0 -> 81.0	29.1	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.17	6.50	0.00	270310				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.40	6.51	0.00	128223	449.0 -> 99.0	52.1	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.46	6.50	-0.01	1558891	413.0 -> 169.0	18.6	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.85	7.08	-0.01	17022				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.77	7.08	-0.01	163926 (m)	499.0 -> 99.0	46.5	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.15	7.11	0.00	284373				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.90	7.11	0.00	1388170	463.0 -> 219.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.92	7.15	0.00	43589				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.70	7.15	0.00	214094	498.0 -> 478.0	4.3	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	101.99	7.35	-0.01	711484	533.0 -> 353.0	31.0	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.77	7.58	0.00	118135	549.0 -> 99.0	54.9	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.85	7.59	0.00	79082				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	101.24	7.59	-0.01	365863 (m)	570.0 -> 512.0	29.5	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.33	7.59	-0.01	171793				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.59	7.59	-0.01	1259163	513.0 -> 219.0	16.0	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.60	7.63	-0.01	112489				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	82.39	7.63	-0.01	488092	527.0 -> 81.0	35.6	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.29	7.72	0.00	54165				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.77	7.72	0.00	380970 (m)	584.0 -> 483.0	53.2	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.99	7.97	-0.01	119517	599.0 -> 99.0	50.9	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.11	8.01	0.00	243180				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.68	8.01	0.00	1283423	563.0 -> 269.0	17.9	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.60	8.14	-0.01	741037	633.0 -> 453.0	31.4	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.50	8.38	-0.01	289759				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.66	8.38	-0.01	1416989	613.0 -> 319.0	17.6	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.57	8.84	0.00	1498596	663.0 -> 369.0	13.1	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.39	9.37	0.00	1681318	713.0 -> 219.0	10.3	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.92	9.37	-0.01	346902				

7.5.9

7

Manual Integration Approval Summary

Sample Number:	S4Q118-IC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8559.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 15:55	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.08	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8561.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 4:26:08 PM
Sample Name	:	icv118-20
Vial	:	P1-B1
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	72946	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	134166	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	194886	20.00	µg/L	0.000
M4-PFHpA	5.808	367.0 -> 322.0	200723	20.00	µg/L	0.012
M8-PFOA	6.516	421.0 -> 376.0	285063	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	308010	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	192512	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	259737	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	302729	20.00	µg/L	0.000
M2-PFTeDA	9.384	715.0 -> 670.0	360963	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	49324	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	11291	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12281	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17541	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	73152	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	123042	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	100534	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	101678	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	15680	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	55836	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	73160	19.26	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-6:2FTS	6.502	429.0 -> 409.0	123067	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-8:2FTS	7.640	529.0 -> 509.0	100532	19.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-PFDoDA	8.391	615.0 -> 570.0	302847	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-PFTeDA	9.384	715.0 -> 670.0	361231	19.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C3-PFBS	3.867	302.0 -> 99.0	11292	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-PFHxS	5.842	402.0 -> 99.0	12286	19.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C4-PFBA	1.825	217.0 -> 172.0	73071	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C4-PFHpA	5.808	367.0 -> 322.0	200763	19.38	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C5-PFHxA	4.889	318.0 -> 273.0	194945	19.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C5-PFPeA	3.592	268.0 -> 223.0	134116	19.26	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C6-PFDA	7.604	519.0 -> 474.0	192632	19.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	259925	19.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
13C8-FOSA	7.146	506.0 -> 78.0	49332	19.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C8-PFOA	6.516	421.0 -> 376.0	285054	19.16	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C8-PFOS	7.096	507.0 -> 99.0	17541	19.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
13C9-PFNA	7.110	472.0 -> 427.0	308075	19.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
d3-MeFOSAA	7.587	573.0 -> 419.0	101741	19.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C3-HFPO-DA	5.178	287.0 -> 169.0	15680	18.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
d5-EtFOSAA	7.722	589.0 -> 419.0	55836	18.86	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	4.801	327.0 -> 307.0	75999	20.86	µg/L		99
6:2FTS	6.503	427.0 -> 407.0	130220	21.25	µg/L		99
8:2FTS	7.640	527.0 -> 507.0	111121	20.99	µg/L		99
EtFOSAA	7.723	584.0 -> 419.0	88954	22.60	µg/L	m	96
FOSA	7.147	498.0 -> 78.0	51910	21.58	µg/L		100
MeFOSAA	7.600	570.0 -> 419.0	95728	20.60	µg/L	m	98
PFBA	1.831	213.0 -> 169.0	28167	21.15	µg/L		100
PFBS	3.870	299.0 -> 80.0	28972	18.90	µg/L		99
PFDA	7.604	513.0 -> 469.0	286768	20.44	µg/L		100
PFDoDA	8.391	613.0 -> 569.0	314038	21.36	µg/L		99
PFDS	7.982	599.0 -> 80.0	25400	20.09	µg/L		98
PFHpA	5.808	363.0 -> 319.0	265459	22.34	µg/L		100
PFHpS	6.514	449.0 -> 80.0	27893	21.33	µg/L		98
PFHxA	4.890	313.0 -> 269.0	187098	21.39	µg/L		100
PFHxS	5.843	399.0 -> 80.0	26818	17.36	µg/L	m	98
PFNA	7.111	463.0 -> 419.0	279761	18.78	µg/L		99
PFNS	7.577	549.0 -> 80.0	25409	20.83	µg/L		100
PFOA	6.516	413.0 -> 369.0	363843	22.24	µg/L		99
PFOS	7.097	499.0 -> 80.0	36802	21.96	µg/L	m	95
PFPeA	3.594	263.0 -> 219.0	127995	21.28	µg/L		100
PFPeS	5.023	349.0 -> 80.0	22559	18.47	µg/L		99
PFTeDA	9.387	713.0 -> 669.0	343402	19.71	µg/L		100
PFTrDA	8.838	663.0 -> 619.0	366702	23.66	µg/L		100
PFUnDA	8.010	563.0 -> 519.0	307721	22.60	µg/L		100
11Cl-PF3OUdS	8.154	631.0 -> 451.0	161120	20.94	µg/L		100
9Cl-PF3ONS	7.366	531.0 -> 351.0	144708	18.51	µg/L		99
ADONA	5.907	377.0 -> 251.0	332056	20.16	µg/L		100
HFPO-DA	5.186	329.0 -> 169.0	37926	21.56	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.15	1.83	0.01	28167				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.22	1.82	0.00	73071				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.26	3.59	0.01	134116				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.28	3.59	0.01	127995				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.33	3.87	0.00	11292				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.90	3.87	0.00	28972	299.0 -> 99.0	40.6	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.26	4.80	0.01	73160				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.86	4.80	0.01	75999	327.0 -> 81.0	42.0	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.17	4.89	0.00	194945				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	21.39	4.89	0.00	187098	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.47	5.02	0.01	22559	349.0 -> 99.0	47.3	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.56	5.19	0.01	37926	285.0 -> 169.0	46.4	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.63	5.18	0.00	15680				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.38	5.81	0.01	200763				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	22.34	5.81	0.01	265459	363.0 -> 169.0	17.8	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.27	5.84	0.00	12286				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.36	5.84	0.00	26818 (m)	399.0 -> 99.0	53.1	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.16	5.91	0.01	332056				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.20	6.50	0.00	123067				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.25	6.50	0.00	130220	427.0 -> 81.0	29.6	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.16	6.52	0.01	285054				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.33	6.51	0.00	27893	449.0 -> 99.0	50.5	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.24	6.52	0.00	363843	413.0 -> 169.0	18.3	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.42	7.10	0.00	17541				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.96	7.10	0.00	36802 (m)	499.0 -> 99.0	49.1	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.66	7.11	0.00	308075				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.78	7.11	0.00	279761	463.0 -> 219.0	18.9	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.15	7.15	0.00	49332				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.58	7.15	0.00	51910	498.0 -> 478.0	4.5	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.51	7.37	0.00	144708	533.0 -> 353.0	31.2	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.83	7.58	0.00	25409	549.0 -> 99.0	55.5	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.11	7.59	0.00	101741				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.60	7.60	0.00	95728 (m)	570.0 -> 512.0	28.9	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.44	7.60	0.00	192632				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.44	7.60	0.00	286768	513.0 -> 219.0	15.9	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.31	7.64	0.00	100532				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.99	7.64	0.00	111121	527.0 -> 81.0	35.5	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.86	7.72	0.00	55836				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.60	7.72	0.00	88954 (m)	584.0 -> 483.0	52.6	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.09	7.98	0.00	25400	599.0 -> 99.0	51.3	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.36	8.01	0.00	259925				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.60	8.01	0.00	307721	563.0 -> 269.0	18.0	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.94	8.15	0.00	161120	633.0 -> 453.0	31.3	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.33	8.39	0.00	302847				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.36	8.39	0.00	314038	613.0 -> 319.0	17.6	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.66	8.84	0.00	366702	663.0 -> 369.0	13.0	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.71	9.39	0.01	343402	713.0 -> 219.0	10.2	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.70	9.38	0.00	361231				

Manual Integration Approval Summary

Sample Number:	S4Q118-ICV118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8561.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 16:26	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8562.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 4:41:34 PM
Sample Name	:	icv118-20 t-pfoa
Vial	:	P1-B2
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	70346	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	128692	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	188649	20.00	µg/L	0.000
M4-PFHpA	5.808	367.0 -> 322.0	193372	20.00	µg/L	0.012
M8-PFOA	6.516	421.0 -> 376.0	276728	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	294858	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	190868	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	252628	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	292528	20.00	µg/L	0.000
M2-PFTeDA	9.385	715.0 -> 670.0	352529	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	50720	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	10914	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	11697	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	16845	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	65593	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	114424	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	92388	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	104823	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	15374	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	55573	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	65595	17.27	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C2-6:2FTS	6.502	429.0 -> 409.0	114423	17.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C2-8:2FTS	7.640	529.0 -> 509.0	92384	17.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%		
13C2-PFDoDA	8.391	615.0 -> 570.0	292535	18.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-PFTeDA	9.385	715.0 -> 670.0	351894	19.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-PFBS	3.867	302.0 -> 99.0	10931	18.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-PFHxS	5.842	402.0 -> 99.0	11696	18.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C4-PFBA	1.825	217.0 -> 172.0	70347	18.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C4-PFHpA	5.808	367.0 -> 322.0	193394	18.67	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C5-PFHxA	4.889	318.0 -> 273.0	188629	18.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C5-PFPeA	3.592	268.0 -> 223.0	128706	18.48	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C6-PFDA	7.604	519.0 -> 474.0	190815	19.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	252682	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-FOSA	7.146	506.0 -> 78.0	50762	19.71	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C8-PFOA	6.516	421.0 -> 376.0	276704	18.60	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
13C8-PFOS	7.096	507.0 -> 99.0	16848	18.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C9-PFNA	7.110	472.0 -> 427.0	294852	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
d3-MeFOSAA	7.587	573.0 -> 419.0	104769	19.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
13C3-HFPO-DA	5.178	287.0 -> 169.0	15374	18.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
d5-EtFOSAA	7.722	589.0 -> 419.0	55573	18.77	µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.808	363.0 -> 319.0	0		µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.516	413.0 -> 369.0	303081	19.08	µg/L	m	98
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.51	1.82	0.00	70347				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.48	3.59	0.01	128706				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.71	3.87	0.00	10931				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.27	4.80	0.01	65595				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.55	4.89	0.00	188629				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.27	5.18	0.00	15374				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.67	5.81	0.01	193394				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.34	5.84	0.00	11696				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.85	6.50	0.00	114423				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.60	6.52	0.01	276704				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.08	6.52	0.00	303081 (m)	413.0 -> 169.0	19.6	0.0	48.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.65	7.10	0.00	16848				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.82	7.11	0.00	294852				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.71	7.15	0.00	50762				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.68	7.59	0.00	104769				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.25	7.60	0.00	190815				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.74	7.64	0.00	92384				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.77	7.72	0.00	55573				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.82	8.01	0.00	252682				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.68	8.39	0.00	292535				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.19	9.38	0.00	351894				

Manual Integration Approval Summary

Sample Number:	S4Q118-ICV118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8562.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 16:41	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.52	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8573.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 7:31:25 PM
Sample Name	:	cc118-20
Vial	:	P1-A7
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	69596	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	132251	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	194844	20.00	µg/L	0.000
M4-PFHpA	5.808	367.0 -> 322.0	199701	20.00	µg/L	0.012
M8-PFOA	6.516	421.0 -> 376.0	283692	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	300406	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	191302	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	259384	20.00	µg/L	0.000
M2-PFDoDA	8.379	615.0 -> 570.0	303950	20.00	µg/L	-0.012
M2-PFTeDA	9.372	715.0 -> 670.0	354910	20.00	µg/L	-0.013
M8-FOSA	7.158	506.0 -> 78.0	49709	20.00	µg/L	0.012
M3-PFBS	3.867	302.0 -> 99.0	11304	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12079	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17409	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	71953	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	123105	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	100057	20.00	µg/L	0.000
M3-MeFOSAA	7.599	573.0 -> 419.0	98263	20.00	µg/L	0.012
M3-HFPO-DA	5.178	287.0 -> 169.0	15544	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	55572	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	72005	18.96	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-6:2FTS	6.502	429.0 -> 409.0	123116	19.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-8:2FTS	7.640	529.0 -> 509.0	100087	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-PFDoDA	8.379	615.0 -> 570.0	303900	19.40	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-PFTeDA	9.372	715.0 -> 670.0	354587	19.34	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-PFBS	3.867	302.0 -> 99.0	11311	19.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C3-PFHxS	5.842	402.0 -> 99.0	12083	18.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C4-PFBA	1.825	217.0 -> 172.0	69647	18.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C4-PFHpA	5.808	367.0 -> 322.0	199696	19.28	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C5-PFHxA	4.889	318.0 -> 273.0	194852	19.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C5-PFPeA	3.592	268.0 -> 223.0	132228	18.99	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C6-PFDA	7.604	519.0 -> 474.0	191270	19.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	259422	19.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C8-FOSA	7.158	506.0 -> 78.0	49711	19.30 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C8-PFOA	6.516	421.0 -> 376.0	283711	19.07 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C8-PFOS	7.096	507.0 -> 99.0	17407	19.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C9-PFNA	7.110	472.0 -> 427.0	300419	19.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
d3-MeFOSAA	7.599	573.0 -> 419.0	98321	18.47 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	15544	18.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
d5-EtFOSAA	7.722	589.0 -> 419.0	55572	18.77 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.801	327.0 -> 307.0	73139	20.41 µg/L		100
6:2FTS	6.503	427.0 -> 407.0	124273	20.27 µg/L		100
8:2FTS	7.640	527.0 -> 507.0	107498	20.40 µg/L		99
EtFOSAA	7.735	584.0 -> 419.0	80588	20.57 µg/L	m	96
FOSA	7.159	498.0 -> 78.0	47821	19.72 µg/L		99
MeFOSAA	7.600	570.0 -> 419.0	88880	19.80 µg/L	m	100
PFBA	1.831	213.0 -> 169.0	25569	20.12 µg/L		100
PFBS	3.870	299.0 -> 80.0	30219	19.69 µg/L		100
PFDA	7.604	513.0 -> 469.0	277369	19.90 µg/L		100
PFDoDA	8.379	613.0 -> 569.0	292949	19.84 µg/L		99
PFDS	7.969	599.0 -> 80.0	24918	19.74 µg/L		95
PFHpA	5.808	363.0 -> 319.0	234930	19.88 µg/L		100
PFHpS	6.527	449.0 -> 80.0	26497	20.61 µg/L		99
PFHxA	4.890	313.0 -> 269.0	175306	20.05 µg/L		100
PFHxS	5.843	399.0 -> 80.0	30149	19.84 µg/L	m	99
PFNA	7.111	463.0 -> 419.0	288299	19.84 µg/L		100
PFNS	7.577	549.0 -> 80.0	24781	20.47 µg/L		100
PFOA	6.516	413.0 -> 369.0	328413	20.17 µg/L		100
PFOS	7.097	499.0 -> 80.0	32551	19.57 µg/L	m	98
PFPeA	3.594	263.0 -> 219.0	117885	19.88 µg/L		100
PFPeS	5.011	349.0 -> 80.0	23344	19.09 µg/L		99
PFTeDA	9.375	713.0 -> 669.0	346744	20.24 µg/L		100
PFTrDA	8.826	663.0 -> 619.0	309439	20.30 µg/L		100
PFUnDA	8.010	563.0 -> 519.0	273106	20.09 µg/L		100
11Cl-PF3OUdS	8.154	631.0 -> 451.0	150915	19.53 µg/L		99
9Cl-PF3ONS	7.366	531.0 -> 351.0	143101	18.42 µg/L		98
ADONA	5.907	377.0 -> 251.0	316573	19.31 µg/L		100
HFPO-DA	5.186	329.0 -> 169.0	35378	20.29 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.12	1.83	0.01	25569				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.32	1.82	0.00	69647				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.99	3.59	0.01	132228				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.88	3.59	0.01	117885				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.36	3.87	0.00	11311				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.69	3.87	0.00	30219	299.0 -> 99.0	41.0	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.96	4.80	0.01	72005				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.41	4.80	0.01	73139	327.0 -> 81.0	41.8	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.16	4.89	0.00	194852				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.05	4.89	0.00	175306	313.0 -> 119.0	3.5	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.09	5.01	0.00	23344	349.0 -> 99.0	47.8	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.29	5.19	0.01	35378	285.0 -> 169.0	47.5	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.47	5.18	0.00	15544				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.28	5.81	0.01	199696				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.88	5.81	0.01	234930	363.0 -> 169.0	17.8	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.95	5.84	0.00	12083				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.84	5.84	0.00	30149 (m)	399.0 -> 99.0	52.7	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.31	5.91	0.01	316573				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.21	6.50	0.00	123116				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.27	6.50	0.00	124273	427.0 -> 81.0	29.0	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.07	6.52	0.01	283711				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.61	6.53	0.01	26497	449.0 -> 99.0	51.4	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.17	6.52	0.00	328413	413.0 -> 169.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.27	7.10	0.00	17407				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.57	7.10	0.00	32551 (m)	499.0 -> 99.0	47.1	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.18	7.11	0.00	300419				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.84	7.11	0.00	288299	463.0 -> 219.0	18.6	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.30	7.16	0.01	49711				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.72	7.16	0.01	47821	498.0 -> 478.0	4.2	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.42	7.37	0.00	143101	533.0 -> 353.0	30.5	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.47	7.58	0.00	24781	549.0 -> 99.0	55.5	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.47	7.60	0.01	98321				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.80	7.60	0.00	88880 (m)	570.0 -> 512.0	28.0	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.30	7.60	0.00	191270				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.90	7.60	0.00	277369	513.0 -> 219.0	15.9	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.22	7.64	0.00	100087				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.40	7.64	0.00	107498	527.0 -> 81.0	35.3	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.77	7.72	0.00	55572				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.57	7.74	0.01	80588 (m)	584.0 -> 483.0	52.6	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.74	7.97	-0.01	24918	599.0 -> 99.0	49.5	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.32	8.01	0.00	259422				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.09	8.01	0.00	273106	563.0 -> 269.0	17.9	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.53	8.15	0.00	150915	633.0 -> 453.0	31.4	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.40	8.38	-0.01	303900				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.84	8.38	-0.01	292949	613.0 -> 319.0	17.6	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.30	8.83	-0.01	309439	663.0 -> 369.0	12.9	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.24	9.37	0.00	346744	713.0 -> 219.0	10.3	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.34	9.37	-0.01	354587				

Manual Integration Approval Summary

Sample Number:	S4Q118-CC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8573.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 19:31	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8589.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/2/2020 11:38:19 PM
Sample Name	:	cc118-20
Vial	:	P1-A7
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.837	217.0 -> 172.0	70822	20.00	µg/L	0.013
M5-PFPeA	3.605	268.0 -> 223.0	132224	20.00	µg/L	0.025
M5-PFHxA	4.902	318.0 -> 273.0	193048	20.00	µg/L	0.012
M4-PFHpA	5.808	367.0 -> 322.0	199260	20.00	µg/L	0.012
M8-PFOA	6.516	421.0 -> 376.0	283181	20.00	µg/L	0.012
M9-PFNA	7.123	472.0 -> 427.0	295258	20.00	µg/L	0.012
M6-PFDA	7.616	519.0 -> 474.0	186142	20.00	µg/L	0.012
M7-PFUnDA	8.021	570.0 -> 525.0	252781	20.00	µg/L	0.012
M2-PFDoDA	8.391	615.0 -> 570.0	297026	20.00	µg/L	0.000
M2-PFTeDA	9.397	715.0 -> 670.0	346370	20.00	µg/L	0.012
M8-FOSA	7.158	506.0 -> 78.0	49448	20.00	µg/L	0.012
M3-PFBS	3.880	302.0 -> 99.0	11150	20.00	µg/L	0.012
M3-PFHxS	5.842	402.0 -> 99.0	11920	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17262	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	71619	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	120970	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	99691	20.00	µg/L	0.000
M3-MeFOSAA	7.599	573.0 -> 419.0	99314	20.00	µg/L	0.012
M3-HFPO-DA	5.190	287.0 -> 169.0	15777	20.00	µg/L	0.012
M5-EtFOSAA	7.722	589.0 -> 419.0	56554	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	71608	18.85	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-6:2FTS	6.502	429.0 -> 409.0	121013	18.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-8:2FTS	7.640	529.0 -> 509.0	99694	19.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-PFDoDA	8.391	615.0 -> 570.0	297109	18.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-PFTeDA	9.397	715.0 -> 670.0	346699	18.91	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C3-PFBS	3.880	302.0 -> 99.0	11153	19.09	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C3-PFHxS	5.842	402.0 -> 99.0	11924	18.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C4-PFBA	1.837	217.0 -> 172.0	70819	18.63	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C4-PFHpA	5.808	367.0 -> 322.0	199280	19.24	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C5-PFHxA	4.902	318.0 -> 273.0	193080	18.99	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C5-PFPeA	3.605	268.0 -> 223.0	132250	18.99	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C6-PFDA	7.616	519.0 -> 474.0	186208	18.79	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.021	570.0 -> 525.0	252804	18.83 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C8-FOSA	7.158	506.0 -> 78.0	49446	19.20 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C8-PFOA	6.516	421.0 -> 376.0	283227	19.04 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C8-PFOS	7.096	507.0 -> 99.0	17278	19.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C9-PFNA	7.123	472.0 -> 427.0	295242	18.85 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
d3-MeFOSAA	7.599	573.0 -> 419.0	99378	18.67 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C3-HFPO-DA	5.190	287.0 -> 169.0	15777	18.75 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
d5-EtFOSAA	7.722	589.0 -> 419.0	56554	19.10 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.801	327.0 -> 307.0	73151	20.51 µg/L		100
6:2FTS	6.503	427.0 -> 407.0	122175	20.28 µg/L		99
8:2FTS	7.640	527.0 -> 507.0	106412	20.27 µg/L		100
EtFOSAA	7.735	584.0 -> 419.0	81541	20.45 µg/L	m	95
FOSA	7.159	498.0 -> 78.0	47968	19.89 µg/L		100
MeFOSAA	7.600	570.0 -> 419.0	89138	19.64 µg/L	m	99
PFBA	1.831	213.0 -> 169.0	25428	19.66 µg/L		100
PFBS	3.882	299.0 -> 80.0	30196	19.95 µg/L		99
PFDA	7.616	513.0 -> 469.0	271533	20.02 µg/L		99
PFDoDA	8.391	613.0 -> 569.0	286286	19.84 µg/L		100
PFDS	7.982	599.0 -> 80.0	24107	19.60 µg/L		99
PFHpA	5.808	363.0 -> 319.0	233338	19.79 µg/L		100
PFHpS	6.527	449.0 -> 80.0	26026	20.51 µg/L		99
PFHxA	4.902	313.0 -> 269.0	174952	20.19 µg/L		100
PFHxS	5.843	399.0 -> 80.0	29714	19.81 µg/L	m	97
PFNA	7.123	463.0 -> 419.0	285341	19.98 µg/L		100
PFNS	7.589	549.0 -> 80.0	24626	20.51 µg/L		100
PFOA	6.516	413.0 -> 369.0	326368	20.08 µg/L		100
PFOS	7.097	499.0 -> 80.0	32431	19.66 µg/L	m	98
PFPeA	3.607	263.0 -> 219.0	118613	20.01 µg/L		100
PFPeS	5.023	349.0 -> 80.0	23309	19.33 µg/L		99
PFTeDA	9.387	713.0 -> 669.0	340846	20.39 µg/L		100
PFTrDA	8.838	663.0 -> 619.0	301606	20.28 µg/L		100
PFUnDA	8.022	563.0 -> 519.0	262668	19.82 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	150292	19.91 µg/L		100
9Cl-PF3ONS	7.366	531.0 -> 351.0	140350	18.57 µg/L		100
ADONA	5.907	377.0 -> 251.0	315920	19.31 µg/L		100
HFPO-DA	5.186	329.0 -> 169.0	35393	20.00 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.66	1.83	0.01	25428				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.63	1.84	0.01	70819				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.99	3.60	0.02	132250				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.01	3.61	0.02	118613				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.09	3.88	0.01	11153				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.95	3.88	0.01	30196	299.0 -> 99.0	40.5	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.85	4.80	0.01	71608				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.51	4.80	0.01	73151	327.0 -> 81.0	41.4	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.99	4.90	0.01	193080				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.19	4.90	0.01	174952	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.33	5.02	0.01	23309	349.0 -> 99.0	47.5	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.00	5.19	0.01	35393	285.0 -> 169.0	47.5	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.75	5.19	0.01	15777				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.24	5.81	0.01	199280				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.79	5.81	0.01	233338	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.70	5.84	0.00	11924				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.81	5.84	0.00	29714 (m)	399.0 -> 99.0	54.2	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.31	5.91	0.01	315920				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.88	6.50	0.00	121013				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.28	6.50	0.00	122175	427.0 -> 81.0	29.3	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.04	6.52	0.01	283227				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.51	6.53	0.01	26026	449.0 -> 99.0	52.5	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.08	6.52	0.00	326368	413.0 -> 169.0	18.8	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.13	7.10	0.00	17278				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.66	7.10	0.00	32431 (m)	499.0 -> 99.0	47.2	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.85	7.12	0.01	295242				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.98	7.12	0.01	285341	463.0 -> 219.0	18.5	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.20	7.16	0.01	49446				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.89	7.16	0.01	47968	498.0 -> 478.0	4.5	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.57	7.37	0.00	140350	533.0 -> 353.0	31.5	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.51	7.59	0.01	24626	549.0 -> 99.0	55.6	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.67	7.60	0.01	99378				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.64	7.60	0.00	89138 (m)	570.0 -> 512.0	28.5	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.79	7.62	0.01	186208				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.02	7.62	0.01	271533	513.0 -> 219.0	16.4	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.15	7.64	0.00	99694				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.27	7.64	0.00	106412	527.0 -> 81.0	35.6	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.10	7.72	0.00	56554				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.45	7.74	0.01	81541 (m)	584.0 -> 483.0	51.7	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.60	7.98	0.00	24107	599.0 -> 99.0	51.8	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.83	8.02	0.01	252804				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.82	8.02	0.01	262668	563.0 -> 269.0	18.3	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.91	8.15	0.00	150292	633.0 -> 453.0	31.0	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.97	8.39	0.00	297109				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.84	8.39	0.00	286286	613.0 -> 319.0	18.0	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.28	8.84	0.00	301606	663.0 -> 369.0	13.1	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.39	9.39	0.01	340846	713.0 -> 219.0	10.4	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.91	9.40	0.01	346699				

7.5.13

7

Manual Integration Approval Summary

Sample Number:	S4Q118-CC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8589.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/02/20 23:38	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.74	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8591.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 12:09:17 AM
Sample Name	:	CC118-1.0LL
Vial	:	P1-A3
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	77379	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	142058	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	209562	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	214254	20.00	µg/L	0.000
M8-PFOA	6.516	421.0 -> 376.0	308528	20.00	µg/L	0.012
M9-PFNA	7.110	472.0 -> 427.0	324253	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	206098	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	276134	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	315950	20.00	µg/L	0.000
M2-PFTeDA	9.385	715.0 -> 670.0	375178	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	56115	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	12081	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	13096	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	18628	20.00	µg/L	0.000
M2-4:2FTS	4.800	329.0 -> 309.0	73596	20.00	µg/L	0.012
M2-6:2FTS	6.502	429.0 -> 409.0	126386	20.00	µg/L	0.000
M2-8:2FTS	7.640	529.0 -> 509.0	102425	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	113987	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	16638	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	60735	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.800	329.0 -> 309.0	73587	19.37	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C2-6:2FTS	6.502	429.0 -> 409.0	126415	19.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C2-8:2FTS	7.640	529.0 -> 509.0	102444	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-PFDoDA	8.391	615.0 -> 570.0	315853	20.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C2-PFTeDA	9.385	715.0 -> 670.0	375584	20.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C3-PFBS	3.867	302.0 -> 99.0	12080	20.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFHxS	5.842	402.0 -> 99.0	13099	20.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFBA	1.825	217.0 -> 172.0	77410	20.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C4-PFHpA	5.795	367.0 -> 322.0	214293	20.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C5-PFHxA	4.889	318.0 -> 273.0	209556	20.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C5-PFPeA	3.592	268.0 -> 223.0	142084	20.40	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C6-PFDA	7.604	519.0 -> 474.0	206197	20.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	276140	20.56 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C8-FOSA	7.146	506.0 -> 78.0	56100	21.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C8-PFOA	6.516	421.0 -> 376.0	308537	20.74 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C8-PFOS	7.096	507.0 -> 99.0	18639	20.64 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C9-PFNA	7.110	472.0 -> 427.0	324198	20.69 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
d3-MeFOSAA	7.587	573.0 -> 419.0	114066	21.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	16638	19.77 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
d5-EtFOSAA	7.722	589.0 -> 419.0	60735	20.51 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.801	327.0 -> 307.0	3700	1.01 µg/L		93
6:2FTS	6.503	427.0 -> 407.0	6500	1.03 µg/L		97
8:2FTS	7.640	527.0 -> 507.0	5348	0.99 µg/L		92
EtFOSAA	7.723	584.0 -> 419.0	3975	0.93 µg/L	m	98
FOSA	7.147	498.0 -> 78.0	2537	0.93 µg/L		98
MeFOSAA	7.600	570.0 -> 419.0	4747	0.91 µg/L	m	97
PFBA	1.819	213.0 -> 169.0	1321	0.94 µg/L		100
PFBS	3.870	299.0 -> 80.0	1517	0.92 µg/L		99
PFDA	7.604	513.0 -> 469.0	13819	0.92 µg/L		97
PFDoDA	8.391	613.0 -> 569.0	14382	0.94 µg/L		100
PFDS	7.982	599.0 -> 80.0	1227	0.91 µg/L		97
PFHpA	5.796	363.0 -> 319.0	12118	0.96 µg/L		100
PFHpS	6.514	449.0 -> 80.0	1265	0.91 µg/L		93
PFHxA	4.890	313.0 -> 269.0	8986	0.96 µg/L		100
PFHxS	5.843	399.0 -> 80.0	1531	0.93 µg/L	m	94
PFNA	7.111	463.0 -> 419.0	14320	0.91 µg/L		100
PFNS	7.577	549.0 -> 80.0	1327	1.02 µg/L		97
PFOA	6.516	413.0 -> 369.0	16797	0.95 µg/L		100
PFOS	7.097	499.0 -> 80.0	1679	0.94 µg/L	m	100
PFPeA	3.594	263.0 -> 219.0	6388	1.00 µg/L		100
PFPeS	5.011	349.0 -> 80.0	1215	0.93 µg/L		98
PFTeDA	9.387	713.0 -> 669.0	18447	1.02 µg/L		98
PFTrDA	8.838	663.0 -> 619.0	15067	0.94 µg/L		99
PFUnDA	8.010	563.0 -> 519.0	13340	0.92 µg/L		99
11Cl-PF3OUdS	8.154	631.0 -> 451.0	7381	0.92 µg/L		95
9Cl-PF3ONS	7.367	531.0 -> 351.0	7200	0.86 µg/L		98
ADONA	5.907	377.0 -> 251.0	16019	0.90 µg/L		100
HFPO-DA	5.186	329.0 -> 169.0	1961	1.05 µg/L		97

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.94	1.82	0.00	1321				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.36	1.82	0.00	77410				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.40	3.59	0.01	142084				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.00	3.59	0.01	6388				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.68	3.87	0.00	12080				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.92	3.87	0.00	1517	299.0 -> 99.0	40.0	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.37	4.80	0.01	73587				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.01	4.80	0.01	3700	327.0 -> 81.0	46.0	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.61	4.89	0.00	209556				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.96	4.89	0.00	8986	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.93	5.01	0.00	1215	349.0 -> 99.0	48.4	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.05	5.19	0.01	1961	285.0 -> 169.0	45.3	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.77	5.18	0.00	16638				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.69	5.80	0.00	214293				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.96	5.80	0.00	12118	363.0 -> 169.0	18.1	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.54	5.84	0.00	13099				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.93	5.84	0.00	1531 (m)	399.0 -> 99.0	56.1	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.90	5.91	0.01	16019				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.73	6.50	0.00	126415				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.03	6.50	0.00	6500	427.0 -> 81.0	30.7	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.74	6.52	0.01	308537				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.91	6.51	0.00	1265	449.0 -> 99.0	56.9	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	6.52	0.00	16797	413.0 -> 169.0	18.5	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.64	7.10	0.00	18639				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.94	7.10	0.00	1679 (m)	499.0 -> 99.0	45.8	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.69	7.11	0.00	324198				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	7.11	0.00	14320	463.0 -> 219.0	18.5	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.78	7.15	0.00	56100				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.93	7.15	0.00	2537	498.0 -> 478.0	3.8	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.86	7.37	0.00	7200	533.0 -> 353.0	32.8	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.02	7.58	0.00	1327	549.0 -> 99.0	53.6	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.42	7.59	0.00	114066				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.91	7.60	0.00	4747 (m)	570.0 -> 512.0	29.5	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.81	7.60	0.00	206197				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.92	7.60	0.00	13819	513.0 -> 219.0	17.3	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.68	7.64	0.00	102444				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.99	7.64	0.00	5348	527.0 -> 81.0	40.4	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.51	7.72	0.00	60735				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.93	7.72	0.00	3975 (m)	584.0 -> 483.0	57.1	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.91	7.98	0.00	1227	599.0 -> 99.0	50.3	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.56	8.01	0.00	276140				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.92	8.01	0.00	13340	563.0 -> 269.0	18.3	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.92	8.15	0.00	7381	633.0 -> 453.0	34.0	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.16	8.39	0.00	315853				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.94	8.39	0.00	14382	613.0 -> 319.0	18.1	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.94	8.84	0.00	15067	663.0 -> 369.0	13.3	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.02	9.39	0.01	18447	713.0 -> 219.0	10.9	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.48	9.38	0.00	375584				

7.5.14

7

Manual Integration Approval Summary

Sample Number:	S4Q118-CC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8591.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/03/20 00:09	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.60	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8599.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 2:12:46 AM
Sample Name	:	cc118-20
Vial	:	P1-A7
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	72490	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	132630	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	194780	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	197679	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	283497	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	301229	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	185761	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	251533	20.00	µg/L	0.000
M2-PFDoDA	8.391	615.0 -> 570.0	294276	20.00	µg/L	0.000
M2-PFTeDA	9.397	715.0 -> 670.0	347037	20.00	µg/L	0.012
M8-FOSA	7.146	506.0 -> 78.0	49288	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	11149	20.00	µg/L	0.000
M3-PFHxS	5.842	402.0 -> 99.0	12345	20.00	µg/L	0.000
M8-PFOS	7.096	507.0 -> 99.0	17258	20.00	µg/L	0.000
M2-4:2FTS	4.788	329.0 -> 309.0	71613	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	122522	20.00	µg/L	-0.012
M2-8:2FTS	7.640	529.0 -> 509.0	98814	20.00	µg/L	0.000
M3-MeFOSAA	7.587	573.0 -> 419.0	102875	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	15806	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	56046	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	71628	18.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-6:2FTS	6.490	429.0 -> 409.0	122516	19.12	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C2-8:2FTS	7.640	529.0 -> 509.0	98835	18.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-PFDoDA	8.391	615.0 -> 570.0	294334	18.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C2-PFTeDA	9.397	715.0 -> 670.0	346765	18.91	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C3-PFBS	3.867	302.0 -> 99.0	11168	19.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C3-PFHxS	5.842	402.0 -> 99.0	12343	19.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C4-PFBA	1.825	217.0 -> 172.0	72606	19.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C4-PFHpA	5.795	367.0 -> 322.0	197669	19.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C5-PFHxA	4.889	318.0 -> 273.0	194809	19.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C5-PFPeA	3.592	268.0 -> 223.0	132637	19.05	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C6-PFDA	7.604	519.0 -> 474.0	185768	18.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	251576	18.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C8-FOSA	7.146	506.0 -> 78.0	49305	19.14 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C8-PFOA	6.504	421.0 -> 376.0	283467	19.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C8-PFOS	7.096	507.0 -> 99.0	17258	19.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C9-PFNA	7.110	472.0 -> 427.0	301238	19.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
d3-MeFOSAA	7.587	573.0 -> 419.0	102846	19.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	15806	18.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
d5-EtFOSAA	7.722	589.0 -> 419.0	56046	18.93 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	73263	20.54 µg/L		99
6:2FTS	6.490	427.0 -> 407.0	122736	20.12 µg/L		100
8:2FTS	7.640	527.0 -> 507.0	105161	20.21 µg/L		99
EtFOSAA	7.723	584.0 -> 419.0	81756	20.69 µg/L	m	96
FOSA	7.147	498.0 -> 78.0	47944	19.94 µg/L		100
MeFOSAA	7.588	570.0 -> 419.0	90876	19.33 µg/L	m	100
PFBA	1.819	213.0 -> 169.0	25800	19.49 µg/L		100
PFBS	3.870	299.0 -> 80.0	30141	19.91 µg/L		99
PFDA	7.604	513.0 -> 469.0	275586	20.36 µg/L		100
PFDoDA	8.391	613.0 -> 569.0	283850	19.86 µg/L		100
PFDS	7.982	599.0 -> 80.0	24303	19.85 µg/L		98
PFHpA	5.796	363.0 -> 319.0	235814	20.16 µg/L		99
PFHpS	6.514	449.0 -> 80.0	25994	19.78 µg/L		98
PFHxA	4.890	313.0 -> 269.0	175759	20.11 µg/L		100
PFHxS	5.843	399.0 -> 80.0	30087	19.37 µg/L	m	100
PFNA	7.111	463.0 -> 419.0	285960	19.62 µg/L		99
PFNS	7.577	549.0 -> 80.0	24492	20.40 µg/L		99
PFOA	6.504	413.0 -> 369.0	326966	20.09 µg/L		100
PFOS	7.097	499.0 -> 80.0	33008	20.02 µg/L	m	100
PFPeA	3.594	263.0 -> 219.0	118205	19.88 µg/L		100
PFPeS	5.011	349.0 -> 80.0	23627	19.59 µg/L		100
PFTeDA	9.399	713.0 -> 669.0	340255	20.31 µg/L		99
PFTrDA	8.838	663.0 -> 619.0	297691	19.97 µg/L		99
PFUnDA	8.010	563.0 -> 519.0	261719	19.85 µg/L		98
11Cl-PF3OUdS	8.154	631.0 -> 451.0	149474	19.98 µg/L		99
9Cl-PF3ONS	7.354	531.0 -> 351.0	139712	18.52 µg/L		99
ADONA	5.894	377.0 -> 251.0	315480	19.26 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	35644	20.10 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.49	1.82	0.00	25800				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.10	1.82	0.00	72606				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.05	3.59	0.01	132637				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.88	3.59	0.01	118205				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.12	3.87	0.00	11168				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.91	3.87	0.00	30141	299.0 -> 99.0	40.1	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.86	4.79	0.00	71628				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.54	4.79	0.00	73263	327.0 -> 81.0	41.9	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.16	4.89	0.00	194809				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.11	4.89	0.00	175759	313.0 -> 119.0	3.5	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.59	5.01	0.00	23627	349.0 -> 99.0	46.9	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.10	5.17	0.00	35644	285.0 -> 169.0	47.6	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.78	5.18	0.00	15806				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.09	5.80	0.00	197669				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.16	5.80	0.00	235814	363.0 -> 169.0	17.8	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.35	5.84	0.00	12343				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.37	5.84	0.00	30087 (m)	399.0 -> 99.0	51.7	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.26	5.89	0.00	315480				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.12	6.49	-0.01	122516				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.12	6.49	-0.01	122736	427.0 -> 81.0	29.1	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.06	6.50	0.00	283467				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.78	6.51	0.00	25994	449.0 -> 99.0	53.2	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.09	6.50	-0.01	326966	413.0 -> 169.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.11	7.10	0.00	17258				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.02	7.10	0.00	33008 (m)	499.0 -> 99.0	45.9	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.23	7.11	0.00	301238				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.62	7.11	0.00	285960	463.0 -> 219.0	18.9	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.14	7.15	0.00	49305				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.94	7.15	0.00	47944	498.0 -> 478.0	4.5	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.52	7.35	-0.01	139712	533.0 -> 353.0	32.1	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.40	7.58	0.00	24492	549.0 -> 99.0	56.8	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.32	7.59	0.00	102846				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.33	7.59	-0.01	90876 (m)	570.0 -> 512.0	28.2	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.74	7.60	0.00	185768				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.36	7.60	0.00	275586	513.0 -> 219.0	16.1	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.98	7.64	0.00	98835				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.21	7.64	0.00	105161	527.0 -> 81.0	36.3	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.93	7.72	0.00	56046				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.69	7.72	0.00	81756 (m)	584.0 -> 483.0	52.7	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.85	7.98	0.00	24303	599.0 -> 99.0	51.2	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.74	8.01	0.00	251576				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.85	8.01	0.00	261719	563.0 -> 269.0	18.7	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.98	8.15	0.00	149474	633.0 -> 453.0	31.4	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.79	8.39	0.00	294334				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.86	8.39	0.00	283850	613.0 -> 319.0	18.1	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.97	8.84	0.00	297691	663.0 -> 369.0	13.3	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.31	9.40	0.02	340255	713.0 -> 219.0	10.5	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.91	9.40	0.01	346765				

Manual Integration Approval Summary

Sample Number:	S4Q118-CC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8599.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/03/20 02:12	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.84	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/03/20 14:13

Perfluorinated Compounds by LC/MS/MS

Data File	:	4Q8611.d
Operator	:	nancyf
Acq. Method	:	537_ID.m
Acq. Date-Time	:	12/3/2020 5:17:59 AM
Sample Name	:	cc118-20
Vial	:	P1-A7
DA Method File	:	ID_120220_S4Q118.quantmethod.xml
Batch Name	:	s4q118.batch.bin
Sample Information	:	op82839,S4Q118,250,,,1,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.825	217.0 -> 172.0	71175	20.00	µg/L	0.000
M5-PFPeA	3.592	268.0 -> 223.0	130461	20.00	µg/L	0.012
M5-PFHxA	4.889	318.0 -> 273.0	190437	20.00	µg/L	0.000
M4-PFHpA	5.795	367.0 -> 322.0	194892	20.00	µg/L	0.000
M8-PFOA	6.504	421.0 -> 376.0	281448	20.00	µg/L	0.000
M9-PFNA	7.110	472.0 -> 427.0	293244	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	185648	20.00	µg/L	0.000
M7-PFUnDA	8.009	570.0 -> 525.0	252049	20.00	µg/L	0.000
M2-PFDoDA	8.379	615.0 -> 570.0	289569	20.00	µg/L	-0.012
M2-PFTeDA	9.384	715.0 -> 670.0	341843	20.00	µg/L	0.000
M8-FOSA	7.146	506.0 -> 78.0	49711	20.00	µg/L	0.000
M3-PFBS	3.867	302.0 -> 99.0	10936	20.00	µg/L	0.000
M3-PFHxS	5.829	402.0 -> 99.0	11759	20.00	µg/L	-0.012
M8-PFOS	7.084	507.0 -> 99.0	17364	20.00	µg/L	-0.012
M2-4:2FTS	4.788	329.0 -> 309.0	70878	20.00	µg/L	0.000
M2-6:2FTS	6.490	429.0 -> 409.0	122006	20.00	µg/L	-0.012
M2-8:2FTS	7.627	529.0 -> 509.0	97673	20.00	µg/L	-0.012
M3-MeFOSAA	7.587	573.0 -> 419.0	102049	20.00	µg/L	0.000
M3-HFPO-DA	5.178	287.0 -> 169.0	15475	20.00	µg/L	0.000
M5-EtFOSAA	7.722	589.0 -> 419.0	55933	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.788	329.0 -> 309.0	70904	18.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-6:2FTS	6.490	429.0 -> 409.0	122017	19.04	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-8:2FTS	7.627	529.0 -> 509.0	97716	18.77	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-PFDoDA	8.379	615.0 -> 570.0	289667	18.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C2-PFTeDA	9.384	715.0 -> 670.0	341884	18.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C3-PFBS	3.867	302.0 -> 99.0	10937	18.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-PFHxS	5.829	402.0 -> 99.0	11758	18.44	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C4-PFBA	1.825	217.0 -> 172.0	71196	18.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C4-PFHpA	5.795	367.0 -> 322.0	194915	18.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C5-PFHxA	4.889	318.0 -> 273.0	190448	18.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C5-PFPeA	3.592	268.0 -> 223.0	130477	18.74	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C6-PFDA	7.604	519.0 -> 474.0	185719	18.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		

Perfluorinated Compounds by LC/MS/MS

Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
13C7-PFUnDA	8.009	570.0 -> 525.0	252158	18.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C8-FOSA	7.146	506.0 -> 78.0	49747	19.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C8-PFOA	6.504	421.0 -> 376.0	281464	18.92 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C8-PFOS	7.084	507.0 -> 99.0	17362	19.22 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C9-PFNA	7.110	472.0 -> 427.0	293335	18.72 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
d3-MeFOSAA	7.587	573.0 -> 419.0	102049	19.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C3-HFPO-DA	5.178	287.0 -> 169.0	15475	18.39 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
d5-EtFOSAA	7.722	589.0 -> 419.0	55933	18.89 µg/L		0.000
Spiked Amount:	Range: - %			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.789	327.0 -> 307.0	71452	20.24 µg/L		100
6:2FTS	6.490	427.0 -> 407.0	121955	20.07 µg/L		100
8:2FTS	7.628	527.0 -> 507.0	105069	20.43 µg/L		100
EtFOSAA	7.723	584.0 -> 419.0	81327	20.62 µg/L	m	95
FOSA	7.147	498.0 -> 78.0	47363	19.53 µg/L		100
MeFOSAA	7.588	570.0 -> 419.0	90368	19.38 µg/L	m	99
PFBA	1.831	213.0 -> 169.0	25257	19.44 µg/L		100
PFBS	3.870	299.0 -> 80.0	29668	19.98 µg/L		99
PFDA	7.604	513.0 -> 469.0	271491	20.07 µg/L		100
PFDoDA	8.379	613.0 -> 569.0	276317	19.64 µg/L		100
PFDS	7.969	599.0 -> 80.0	23532	19.18 µg/L		99
PFHpA	5.796	363.0 -> 319.0	230657	20.00 µg/L		100
PFHpS	6.514	449.0 -> 80.0	25942	20.72 µg/L		100
PFHxA	4.890	313.0 -> 269.0	172119	20.14 µg/L		100
PFHxS	5.831	399.0 -> 80.0	29363	19.85 µg/L	m	99
PFNA	7.111	463.0 -> 419.0	280096	19.74 µg/L		99
PFNS	7.577	549.0 -> 80.0	24270	20.09 µg/L		99
PFOA	6.504	413.0 -> 369.0	320789	19.86 µg/L		100
PFOS	7.085	499.0 -> 80.0	32093	19.34 µg/L	m	98
PFPeA	3.594	263.0 -> 219.0	116715	19.95 µg/L		100
PFPeS	5.011	349.0 -> 80.0	22877	19.34 µg/L		100
PFTeDA	9.375	713.0 -> 669.0	332936	20.18 µg/L		99
PFTrDA	8.838	663.0 -> 619.0	290569	19.79 µg/L		99
PFUnDA	8.010	563.0 -> 519.0	257807	19.51 µg/L		98
11Cl-PF3OUdS	8.154	631.0 -> 451.0	147761	20.08 µg/L		100
9Cl-PF3ONS	7.354	531.0 -> 351.0	140556	18.64 µg/L		98
ADONA	5.894	377.0 -> 251.0	309453	19.03 µg/L		100
HFPO-DA	5.173	329.0 -> 169.0	35241	20.30 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.44	1.83	0.01	25257				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.73	1.82	0.00	71196				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.74	3.59	0.01	130477				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.95	3.59	0.01	116715				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.72	3.87	0.00	10937				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.98	3.87	0.00	29668	299.0 -> 99.0	40.2	10.9	70.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.67	4.79	0.00	70904				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.24	4.79	0.00	71452	327.0 -> 81.0	41.7	11.5	71.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.73	4.89	0.00	190448				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.14	4.89	0.00	172119	313.0 -> 119.0	3.6	0.0	33.6

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.34	5.01	0.00	22877	349.0 -> 99.0	46.8	16.9	76.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.30	5.17	0.00	35241	285.0 -> 169.0	47.3	17.4	77.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.39	5.18	0.00	15475				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.82	5.80	0.00	194915				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.00	5.80	0.00	230657	363.0 -> 169.0	18.0	0.0	48.0

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.44	5.83	-0.01	11758				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.85	5.83	-0.01	29363 (m)	399.0 -> 99.0	52.5	21.9	81.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.03	5.89	0.00	309453				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.04	6.49	-0.01	122017				

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.07	6.49	-0.01	121955	427.0 -> 81.0	29.1	0.0	59.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.92	6.50	0.00	281464				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.72	6.51	0.00	25942	449.0 -> 99.0	51.7	22.0	82.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.86	6.50	-0.01	320789	413.0 -> 169.0	18.7	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.22	7.08	-0.01	17362				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.34	7.08	-0.01	32093 (m)	499.0 -> 99.0	46.9	15.7	75.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.72	7.11	0.00	293335				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.74	7.11	0.00	280096	463.0 -> 219.0	19.0	0.0	48.6

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.31	7.15	0.00	49747				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.53	7.15	0.00	47363	498.0 -> 478.0	4.2	0.0	34.4

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.64	7.35	-0.01	140556	533.0 -> 353.0	30.5	1.5	61.5

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.09	7.58	0.00	24270	549.0 -> 99.0	55.0	25.8	85.8

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.17	7.59	0.00	102049				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.38	7.59	-0.01	90368 (m)	570.0 -> 512.0	28.6	0.0	58.1

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.74	7.60	0.00	185719				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.07	7.60	0.00	271491	513.0 -> 219.0	16.1	0.0	45.9

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.77	7.63	-0.01	97716				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.43	7.63	-0.01	105069	527.0 -> 81.0	35.8	5.8	65.8

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.89	7.72	0.00	55933				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.62	7.72	0.00	81327 (m)	584.0 -> 483.0	51.4	25.3	85.3

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.18	7.97	-0.01	23532	599.0 -> 99.0	52.2	22.7	82.7

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.78	8.01	0.00	252158				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.51	8.01	0.00	257807	563.0 -> 269.0	18.8	0.0	48.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.08	8.15	0.00	147761	633.0 -> 453.0	30.9	1.1	61.1

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.49	8.38	-0.01	289667				

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.64	8.38	-0.01	276317	613.0 -> 319.0	18.0	0.0	47.9

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.79	8.84	0.00	290569	663.0 -> 369.0	13.4	0.0	43.0

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.18	9.37	0.00	332936	713.0 -> 219.0	10.5	0.0	40.2

Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.64	9.38	0.00	341884				

Manual Integration Approval Summary

Sample Number:	S4Q118-CC118	**Method:**	EPA 537M QSM5.3 B-15
Lab FileID:	4Q8611.D	**Analyst approved:**	12/03/20 09:43 Nancy Saunders
Injection Time:	12/03/20 05:17	**Supervisor approved:**	12/03/20 14:13 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.83	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.08	Split peak
MeFOSAA	2355-31-9		7.59	Split peak
EtFOSAA	2991-50-6		7.72	Split peak

SGS ORLANDO

LCMS4-4Q ANALYSIS LOG

DATE:	12/02/20
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS4-4Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_120220_S4Q118
CAL DATE:	12/02/20
ANALYST:	NAS
RUN BATCH:	S4Q118

ELUENT A LOT #:	204903 W/0.1% AA
ELUENT B LOT #:	204513W/0.1% AA
IC/CC STD LOT #:	LCMS1563D
ICV STD LOT #:	9851
ISTD/ID STD LOT #:	LCMS1565A

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q8547.d	P1-B2	t-pfoa	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	✓
2	4Q8548.d	P1-A9	high std	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	✓
3	4Q8549.d	P1-A1	iblk	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	✓
4	4Q8550.d	P1-A3	CC115-1.0LL	537_ID.m	QC	5/500	op82839,S4Q118,250,,,1,1,water	✓
5	4Q8551.d	P1-A1	ic118-0	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	✓
6	4Q8552.d	P1-A2	ic118-0.5	537_ID.m	Calibration	2.5/500	op82839,S4Q118,250,,,1,1,water	✓
7	4Q8553.d	P1-A3	ic118-1.0	537_ID.m	Calibration	5/500	op82839,S4Q118,250,,,1,1,water	✓
8	4Q8554.d	P1-A4	ic118-2.0	537_ID.m	Calibration	10/500	op82839,S4Q118,250,,,1,1,water	✓
9	4Q8555.d	P1-A5	ic118-5.0	537_ID.m	Calibration	25/500	op82839,S4Q118,250,,,1,1,water	✓
10	4Q8556.d	P1-A6	ic118-10	537_ID.m	Calibration	50/500	op82839,S4Q118,250,,,1,1,water	✓
11	4Q8557.d	P1-A7	icc118-20	537_ID.m	Calibration	100/500	op82839,S4Q118,250,,,1,1,water	✓
12	4Q8558.d	P1-A8	ic118-50	537_ID.m	Calibration	250/500	op82839,S4Q118,250,,,1,1,water	✓
13	4Q8559.d	P1-A9	ic118-100	537_ID.m	Calibration	1x	op82839,S4Q118,250,,,1,1,water	✓
14	4Q8560.d	P1-A1	iblk	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	bdl
15	4Q8561.d	P1-B1	icv118-20	537_ID.m	QC	10/500	op82839,S4Q118,250,,,1,1,water	pass
16	4Q8562.d	P1-B2	icv118-20 t-pfoa	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	pass
17	4Q8563.d	P1-C3	op83158-bs	537_ID.m	Sample		op83158,S4Q118,125,,,1,1,water	✓
18	4Q8564.d	P1-C4	op83158-mb	537_ID.m	Sample		op83158,S4Q118,125,,,1,1,water	bdl
19	4Q8565.d	P1-C5	fa81025-1	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
20	4Q8566.d	P1-C6	op83158-ms	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
21	4Q8567.d	P1-C7	fa81025-2	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
22	4Q8568.d	P1-C8	fa81025-3	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
23	4Q8569.d	P1-C9	fa81025-4	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
24	4Q8570.d	P1-D1	fa81025-5	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
25	4Q8571.d	P1-D2	fa81025-6	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
26	4Q8572.d	P1-D3	fa81025-7	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
27	4Q8573.d	P1-A7	cc118-20	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	pass
28	4Q8574.d	P1-A1	ccb	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	bdl
29	4Q8575.d	P1-D4	fa81025-8	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
30	4Q8576.d	P1-D5	fa81025-9	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
31	4Q8577.d	P1-D6	fa81025-10	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
32	4Q8578.d	P1-D7	op83158-dup	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
33	4Q8579.d	P1-D8	fa81025-11	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
34	4Q8580.d	P1-D9	fa81025-12	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
35	4Q8581.d	P1-E1	fa81025-13	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓

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36	4Q8582.d	P1-E2	fa81025-14	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
37	4Q8583.d	P1-E3	fa81025-15	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
38	4Q8584.d	P1-E4	fa81025-16	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓ fosa low 5x
39	4Q8585.d	P1-A7	cc118-20	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	pass
40	4Q8586.d	P1-A1	ccb	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	bdl
41	4Q8587.d	P1-E5	fa81025-17	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	✓
42	4Q8588.d	P1-E6	fa81025-18	537_ID.m	Sample		op83158,S4Q118,120,,,1,1,water	all is low re-elute rr
43	4Q8589.d	P1-A7	cc118-20	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	✓
44	4Q8590.d	P1-A1	ccb	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	✓
45	4Q8591.d	P1-A3	CC118-1.0LL	537_ID.m	QC	5/500	op82839,S4Q118,250,,,1,1,water	✓
46	4Q8592.d	P1-E7	op83173-bs	537_ID.m	Sample		op83173,S4Q118,250,,,1,1,water	✓
47	4Q8593.d	P1-E8	op83173-mb	537_ID.m	Sample		op83173,S4Q118,250,,,1,1,water	bdl
48	4Q8594.d	P1-E9	fa81067-1	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓
49	4Q8595.d	P1-F1	fa81067-2	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓
50	4Q8596.d	P1-F2	fa81067-3	537_ID.m	Sample		op83173,S4Q118,120,,,1,1,water	✓
51	4Q8597.d	P1-F3	op83173-ms1	537_ID.m	Sample		op83173,S4Q118,120,,,1,1,water	✓
52	4Q8598.d	P1-F4	op83173-msd1	537_ID.m	Sample		op83173,S4Q118,120,,,1,1,water	✓ te low
53	4Q8599.d	P1-A7	cc118-20	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	pass
54	4Q8600.d	P1-A1	ccb	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	bdl
55	4Q8601.d	P1-F5	fa81068-1	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓
56	4Q8602.d	P1-F6	fa81068-2	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓
57	4Q8603.d	P1-F7	fa81068-3	537_ID.m	Sample		op83173,S4Q118,120,,,1,1,water	✓
58	4Q8604.d	P1-F8	op83173-ms2	537_ID.m	Sample		op83173,S4Q118,120,,,1,1,water	✓
59	4Q8605.d	P1-F9	op83173-msd2	537_ID.m	Sample		op83173,S4Q118,120,,,1,1,water	✓
60	4Q8606.d	P2-A1	fa81070-1	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓ 10x 100x
61	4Q8607.d	P2-A2	fa81070-2	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓ 10x 100x
62	4Q8608.d	P2-A3	fa81070-3	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓ 10x
63	4Q8609.d	P2-A4	fa81070-4	537_ID.m	Sample		op83173,S4Q118,280,,,1,1,water	✓ 2x
64	4Q8610.d	P2-A5	fa81070-5	537_ID.m	Sample		op83173,S4Q118,280,,,1,1,water	✓ rr 1x co 5x id low
65	4Q8611.d	P1-A7	cc118-20	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	pass
66	4Q8612.d	P1-A1	ccb	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	bdl
67	4Q8613.d	P2-A6	fa81070-6	537_ID.m	Sample		op83173,S4Q118,280,,,1,1,water	✓ 5x
68	4Q8614.d	P2-A7	fa81070-7	537_ID.m	Sample		op83173,S4Q118,280,,,1,1,water	✓ 5x
69	4Q8615.d	P2-A8	fa81071-1	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓ 10x
70	4Q8616.d	P2-A9	fa81071-2	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	rr co
71	4Q8617.d	P2-B1	fa81071-3	537_ID.m	Sample		op83173,S4Q118,125,,,1,1,water	✓ 10x
72	4Q8618.d	P1-A7	ecc118-20	537_ID.m	QC	100/500	op82839,S4Q118,250,,,1,1,water	pass
73	4Q8619.d	P1-A1	ccb	537_ID.m	Sample		op82839,S4Q118,250,,,1,1,water	bdl

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SPE LIQUID SAMPLE PREP REPORT

Date/Time: 11/28/20 08:30
Started {mm/dd/yy 24:00}

Date/Time: 11/29/20 11:30
Finished {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: LC 537 (QSM)

Batch#: OP83173 Ext. By: GRF Conc. By: MV Vialed By: MV

	Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
	OP83173 MB		250	7	N/A	20ul		1ml	D	
	OP83173 BS		250				50ul			
FA81067-1	~~FA82~~ *	1	125							
	-2	1	↓							
	-3	1	120							
	FA81068-1	1	125							
	-2	1	↓							
	-3	1	120							
FA81070-1	~~FA81070~~ *	1	125						E	
	-2	1								
	-3	1	↓							
	-4	1	280							
	-5	1								
	-6	1								
	-7	1	↓							
	FA81071-1	1	125							
	-2	1								
	-3	1	↓	↓	↓	↓		↓	↓	
	FA81067-3 MS1	2	120	7	N/A	20ul	50ul	1ml	D	
	↓ MSD1	4								
	FA81068-3 MS2	3								
	↓ MSD2	4	↓	↓	↓	↓	↓	↓	↓	
	DUP									

Comments: * GRF 11/28

Surr.1 ID:	LCMS 1566-J	Conc:	10 ppm	Exp. Date:	05/20/21	Inj. By:	GRF	Ver. By	MK
Spk.1 ID:	LCMS 1571	Conc:	400 ppb	Exp. Date:	05/24/21	Inj. By:	GRF	Ver. By	MK
Spk.2 ID:	✓	Conc:	✓	Exp. Date:	✓	Inj. By:	✓	Ver. By	✓
Spk.3 ID:	✓	Conc:	✓	Exp. Date:	✓	Inj. By:	✓	Ver. By	✓

TurboVap Temp (Therm ID):	TV#12	N-Evap Temp (Therm ID):	✓
Observed Temp °C:	45°C	Observed Temp °C:	✓
Corr. Temp °C:	✓	Corr. Temp °C:	✓

Methanol Lot #	204513	SPE Lot #	6558129-01	pH Paper #	231019
Acetonitrile Lot #	✓	Syringe filter Lot #	✓	Reagent #	MeOH 204513
Water Lot#	OP82261	Pre-filter Lot#	✓	Reagent #	3% NH4OH 205066
Solvent#	✓	Carbon Lot#	127935	Other	✓

Relinquished By: [signature] Date: 11/29/20

Accepted By: [signature] Date: 11-30-20

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718