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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC7583

Sampling Date: 07/05/23



Report to:

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Total number of pages in report: 54



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 unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)

DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),

AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC7583

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC7583-1	07/05/23	10:35 CH	07/07/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2307
FC7583-2	07/05/23	10:35 CH	07/07/23	AQ	Ground Water	AF-RHMW02-WGFD01LF-2307
FC7583-3	07/05/23	13:20 CH	07/07/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2307
FC7583-4	07/05/23	10:25 NH	07/07/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2307
FC7583-5	07/05/23	13:15 NHCP	07/07/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2307
FC7583-6	07/05/23	14:25 GM	07/07/23	AQ	Ground Water	AF-RHMW10-WGN01LF-2307

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC7583

Site: N6274223F0104 RH Fire Suppression System

Report Date: 7/17/2023 5:08:00 PM

On 07/07/2023, 6 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC7583 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ

Batch ID: OP97799

Sample(s) FC7583-3MS, FC7583-4DUP were used as the QC samples indicated.

RPD(s) for Duplicate for Perfluorodecanoic acid, Perfluorononanoic acid are outside control limits for sample OP97799-DUP. Probable cause is due to sample non-homogeneity.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Job Number: FC7583
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 07/05/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC7583-1	AF-RHMW02-WGN01LF-2307					
	Perfluoropentanoic acid	60.9	7.7	1.9	ng/l	EPA DRAFT 1633
FC7583-2	AF-RHMW02-WGFD01LF-2307					
	Perfluoropentanoic acid	36.8	7.3	1.8	ng/l	EPA DRAFT 1633
FC7583-3	AF-RHMW03-WGN01LF-2307					
	Perfluoropentanoic acid	2.9 J	7.4	1.8	ng/l	EPA DRAFT 1633
	Perfluorohexanoic acid	1.4 J	3.7	1.8	ng/l	EPA DRAFT 1633
	Perfluoroheptanoic acid	1.5 J	3.7	1.8	ng/l	EPA DRAFT 1633
	6:2 Fluorotelomer sulfonate	4.7 J	18	7.4	ng/l	EPA DRAFT 1633

FC7583-4 AF-RHMW04-WGN01LF-2307

No hits reported in this sample.

FC7583-5 AF-RHMW06-WGN01LF-2307

No hits reported in this sample.

FC7583-6 AF-RHMW10-WGN01LF-2307

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2307		
Lab Sample ID:	FC7583-1	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q20913.D	1	07/13/23 15:46	MV	07/12/23 11:45	OP97799	S6Q310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	520 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	60.9	7.7	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	3.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.7	3.8	0.96	ng/l	
4151-50-2	EtFOSA	3.8 U	7.7	3.8	0.96	ng/l	

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

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Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2307		
Lab Sample ID:	FC7583-1	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.8 U	4.8	3.8	0.96	ng/l
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.96	ng/l
919005-14-4	ADONA	3.8 U	7.7	3.8	1.8	ng/l
377-73-1	PFMPA	1.9 U	7.7	1.9	0.96	ng/l
863090-89-5	PFMBA	3.8 U	7.7	3.8	1.1	ng/l
151772-58-6	NFDHA	3.8 U	7.7	3.8	1.2	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.7	3.8	1.3	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.7	3.8	1.7	ng/l
113507-82-7	PFEESA	1.9 U	7.7	1.9	0.75	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	19	9.6	4.3	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	96	19	8.4	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	19 U	96	19	7.5	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	74%	20-150%
13C5-PFPeA	92%	20-150%
13C5-PFHxA	106%	20-150%
13C4-PFHpA	117%	20-150%
13C8-PFOA	97%	20-150%
13C9-PFNA	105%	20-150%
13C6-PFDA	106%	20-150%
13C7-PFUnDA	96%	20-150%
13C2-PFDoDA	89%	20-150%
13C2-PFTeDA	76%	20-150%
13C3-PFBS	110%	20-150%
13C3-PFHxS	117%	20-150%

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

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Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2307		
Lab Sample ID:	FC7583-1	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	105%		20-150%
	13C8-FOSA	103%		20-150%
	d3-MeFOSA	82%		20-150%
	d5-EtFOSA	88%		20-150%
	d3-MeFOSAA	104%		20-150%
	d5-EtFOSAA	115%		20-150%
	d7-MeFOSE	78%		20-150%
	d9-EtFOSE	93%		20-150%
	13C2-4:2FTS	139%		20-180%
	13C2-6:2FTS	143%		20-180%
	13C2-8:2FTS	129%		20-180%
	13C3-HFPO-DA	82%		20-150%

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:	AF-RHMW02-WGFD01LF-2307		
Lab Sample ID:	FC7583-2	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q20914.D	1	07/13/23 16:00	MV	07/12/23 11:45	OP97799	S6Q310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	36.8	7.3	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

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

4.2
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Report of Analysis

Client Sample ID:	AF-RHMW02-WGFD01LF-2307		
Lab Sample ID:	FC7583-2	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		20-150%
	13C5-PFPeA	97%		20-150%
	13C5-PFHxA	114%		20-150%
	13C4-PFHpA	119%		20-150%
	13C8-PFOA	111%		20-150%
	13C9-PFNA	104%		20-150%
	13C6-PFDA	101%		20-150%
	13C7-PFUnDA	105%		20-150%
	13C2-PFDoDA	85%		20-150%
	13C2-PFTeDA	64%		20-150%
	13C3-PFBS	120%		20-150%
	13C3-PFHxS	113%		20-150%

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:	AF-RHMW02-WGFD01LF-2307		
Lab Sample ID:	FC7583-2	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	104%		20-150%
	13C8-FOSA	109%		20-150%
	d3-MeFOSA	85%		20-150%
	d5-EtFOSA	87%		20-150%
	d3-MeFOSAA	112%		20-150%
	d5-EtFOSAA	132%		20-150%
	d7-MeFOSE	82%		20-150%
	d9-EtFOSE	91%		20-150%
	13C2-4:2FTS	150%		20-180%
	13C2-6:2FTS	154%		20-180%
	13C2-8:2FTS	127%		20-180%
	13C3-HFPO-DA	84%		20-150%

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:	AF-RHMW03-WGN01LF-2307		
Lab Sample ID:	FC7583-3	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q20915.D	1	07/13/23 16:14	MV	07/12/23 11:45	OP97799	S6Q310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	544 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	2.9	7.4	1.8	0.86	ng/l	J
307-24-4	Perfluorohexanoic acid	1.4	3.7	1.8	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.5	3.7	1.8	0.46	ng/l	J
335-67-1	Perfluorooctanoic acid	0.92 U	3.7	0.92	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.7	1.8	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.7	1.8	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.7	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.7	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.7	1.8	0.77	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.7	1.8	0.46	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.7	1.8	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.7	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.7	1.8	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.7	1.8	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.7	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.7	1.8	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	18	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	4.7	18	7.4	3.2	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	18	7.4	3.8	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.7	1.8	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.92	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.92	ng/l	

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

4.3
4

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2307		
Lab Sample ID:	FC7583-3	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.92	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	37	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	37	18	6.8	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.7	1.8	0.92	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.4	1.8	0.92	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.0	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.4	1.8	0.72	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.2 U	18	9.2	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	92	18	8.0	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	92	18	7.2	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	101%		20-150%
	13C5-PFPeA	107%		20-150%
	13C5-PFHxA	109%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	108%		20-150%
	13C6-PFDA	123%		20-150%
	13C7-PFUnDA	106%		20-150%
	13C2-PFDoDA	93%		20-150%
	13C2-PFTeDA	84%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	115%		20-150%

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:	AF-RHMW03-WGN01LF-2307	
Lab Sample ID:	FC7583-3	Date Sampled: 07/05/23
Matrix:	AQ - Ground Water	Date Received: 07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	111%		20-150%
	13C8-FOSA	93%		20-150%
	d3-MeFOSA	85%		20-150%
	d5-EtFOSA	88%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	110%		20-150%
	d7-MeFOSE	85%		20-150%
	d9-EtFOSE	97%		20-150%
	13C2-4:2FTS	106%		20-180%
	13C2-6:2FTS	122%		20-180%
	13C2-8:2FTS	127%		20-180%
	13C3-HFPO-DA	96%		20-150%

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:	AF-RHMW04-WGN01LF-2307		
Lab Sample ID:	FC7583-4	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q20920.D	1	07/13/23 17:24	MV	07/12/23 11:45	OP97799	S6Q310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	570 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

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

4.4
4

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2307		
Lab Sample ID:	FC7583-4	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	105%	20-150%
13C5-PFPeA	103%	20-150%
13C5-PFHxA	106%	20-150%
13C4-PFHpA	108%	20-150%
13C8-PFOA	111%	20-150%
13C9-PFNA	106%	20-150%
13C6-PFDA	97%	20-150%
13C7-PFUnDA	98%	20-150%
13C2-PFDoDA	82%	20-150%
13C2-PFTeDA	77%	20-150%
13C3-PFBS	113%	20-150%
13C3-PFHxS	115%	20-150%

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

4.4
4

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2307	
Lab Sample ID:	FC7583-4	Date Sampled: 07/05/23
Matrix:	AQ - Ground Water	Date Received: 07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids: n/a
Project:	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	111%		20-150%
	13C8-FOSA	89%		20-150%
	d3-MeFOSA	82%		20-150%
	d5-EtFOSA	90%		20-150%
	d3-MeFOSAA	104%		20-150%
	d5-EtFOSAA	111%		20-150%
	d7-MeFOSE	79%		20-150%
	d9-EtFOSE	95%		20-150%
	13C2-4:2FTS	135%		20-180%
	13C2-6:2FTS	129%		20-180%
	13C2-8:2FTS	128%		20-180%
	13C3-HFPO-DA	91%		20-150%

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:	AF-RHMW06-WGN01LF-2307		
Lab Sample ID:	FC7583-5	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q20921.D	1	07/13/23 17:38	MV	07/12/23 11:45	OP97799	S6Q310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	520 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.7	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	3.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.9 U	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.7	3.8	0.96	ng/l	
4151-50-2	EtFOSA	3.8 U	7.7	3.8	0.96	ng/l	

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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2307		
Lab Sample ID:	FC7583-5	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.8 U	4.8	3.8	0.96	ng/l
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.96	ng/l
919005-14-4	ADONA	3.8 U	7.7	3.8	1.8	ng/l
377-73-1	PFMPA	1.9 U	7.7	1.9	0.96	ng/l
863090-89-5	PFMBA	3.8 U	7.7	3.8	1.1	ng/l
151772-58-6	NFDHA	3.8 U	7.7	3.8	1.2	ng/l

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.7	3.8	1.3	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.7	3.8	1.7	ng/l
113507-82-7	PFEESA	1.9 U	7.7	1.9	0.75	ng/l

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	19	9.6	4.3	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	96	19	8.4	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	19 U	96	19	7.5	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	115%	20-150%
13C5-PFPeA	114%	20-150%
13C5-PFHxA	114%	20-150%
13C4-PFHpA	113%	20-150%
13C8-PFOA	112%	20-150%
13C9-PFNA	106%	20-150%
13C6-PFDA	113%	20-150%
13C7-PFUnDA	116%	20-150%
13C2-PFDoDA	89%	20-150%
13C2-PFTeDA	88%	20-150%
13C3-PFBS	112%	20-150%
13C3-PFHxS	109%	20-150%

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

4.5
4

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2307		
Lab Sample ID:	FC7583-5	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	119%		20-150%
	13C8-FOSA	97%		20-150%
	d3-MeFOSA	90%		20-150%
	d5-EtFOSA	103%		20-150%
	d3-MeFOSAA	112%		20-150%
	d5-EtFOSAA	119%		20-150%
	d7-MeFOSE	90%		20-150%
	d9-EtFOSE	111%		20-150%
	13C2-4:2FTS	133%		20-180%
	13C2-6:2FTS	138%		20-180%
	13C2-8:2FTS	136%		20-180%
	13C3-HFPO-DA	108%		20-150%

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:	AF-RHMW10-WGN01LF-2307		
Lab Sample ID:	FC7583-6	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q20922.D	1	07/13/23 17:52	MV	07/12/23 11:45	OP97799	S6Q310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	570 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
---------	----------	--------	-----	-----	----	-------	---

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

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

4.6
4

Report of Analysis

Client Sample ID:	AF-RHMW10-WGN01LF-2307		
Lab Sample ID:	FC7583-6	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
---------	----------	--------	-----	-----	----	-------	---

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l	
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
---------	------------------------	--------	--------	--------

	13C4-PFBA	110%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	108%		20-150%
	13C4-PFHpA	114%		20-150%
	13C8-PFOA	101%		20-150%
	13C9-PFNA	107%		20-150%
	13C6-PFDA	125%		20-150%
	13C7-PFUnDA	116%		20-150%
	13C2-PFDoDA	101%		20-150%
	13C2-PFTeDA	97%		20-150%
	13C3-PFBS	106%		20-150%
	13C3-PFHxS	108%		20-150%

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

4.6
4

Report of Analysis

Client Sample ID:	AF-RHMW10-WGN01LF-2307		
Lab Sample ID:	FC7583-6	Date Sampled:	07/05/23
Matrix:	AQ - Ground Water	Date Received:	07/07/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	123%		20-150%
	13C8-FOSA	98%		20-150%
	d3-MeFOSA	93%		20-150%
	d5-EtFOSA	99%		20-150%
	d3-MeFOSAA	109%		20-150%
	d5-EtFOSAA	120%		20-150%
	d7-MeFOSE	87%		20-150%
	d9-EtFOSE	101%		20-150%
	13C2-4:2FTS	126%		20-180%
	13C2-6:2FTS	127%		20-180%
	13C2-8:2FTS	124%		20-180%
	13C3-HFPO-DA	99%		20-150%

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



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Chain of Custody

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SKIFF #

FC 7583

Client / Reporting Information			Project Information			Analytical Information										Matrix Codes
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			<div style="text-align: center;"> <p>7/5/23</p> </div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600			Street													
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii													
Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512			Project # 60697810 Fax #													
Sampler(s) Name(s) (Printed) Sampler 1: <u>CHRISTINA HARDEE</u> Sampler 2:			Client Purchase Order #			PFAS EPA Draft 1633										LAB USE ONLY
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	HNO3	H2O2	PERAC	NACM-ZNAC	DI WATER	MICH	
1	AF-RHMMW02-WGN01LF-2307	7/5/23	1035	CA	GW	3		X								X
2	AF-RHMMW02-WGFD01LF-2307	7/5/23	1035	CA	GW	3		X								X
										INITIAL ASSESSMENT		ZB				
										LABEL VERIFICATION		ZB				
												4.8IR1				
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks								
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By: / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S				EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW AFB: 016-49479883								
Rush T/A Data Available VIA Email or Lablink												Sample Custody must be documented below each time samples change possession, including courier delivery.				
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation				
1 Alex Edmonds/AECOM		7/5/23 1600		2 Alex Edmonds		7/5/23 1600		3 Alex Edmonds/AECOM		7/5/23 1600		4 UC				
5 UC		Date Time:		6 UC		1230 07/07/23		7		Date Time:		8				

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Client / Reporting Information		Project Information		Analytical Information										Matrix Codes						
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="text-align: center; font-size: 2em; font-weight: bold;">FC7583</div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe						
Address: 1001 Bishop St. ste 1600		Street																		
City: Honolulu State: HI Zip: 96813		City Honolulu State Hawaii																		
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 60697810																		
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #		<div style="text-align: center; font-size: 2em; font-weight: bold;">FC7583</div>										LAB USE ONLY						
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #																		
Sampler(s) Name(s) (Printed) <u>CHESTINA HARPLE</u>		Sampler 1: <u>UC</u> Sampler 2:		X PFAS EPA Draft 1633																
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC
3	AF-RHMMW03-WGN01LF-2307	7/5/23	1025 1320 06 7/5/23	CH	GW	3		X												
Turnaround Time (Business days)		Data Deliverable Information				Comments / Remarks														
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By: / Date:		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S							EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW AWB: 016 - 49479883									
Rush T/A Data Available VIA Email or Lablink																				
Sample Custody must be documented below each time samples change possession, including courier delivery.																				
1	Relinquished by Sampler/Affiliation	Date Time: 7/5/23	2	Received By/Affiliation	Alex Edwards/AECom	3	Relinquished By/Affiliation	Alex Edwards	Date Time: 7/5/23	4	Received By/Affiliation	UC								
5	Relinquished by/Affiliation	Date Time:	6	Received By/Affiliation	UC 07/07/23	7	Relinquished By/Affiliation		Date Time:	8	Received By/Affiliation									

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Client / Reporting Information			Project Information			Analytical Information										Matrix Codes
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System													DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600			Street													
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii													
Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512			Project # 60697810 Fax #													
Sampler(s) Name(s) (Printed) Sampler 1: <i>Nate Hyslop</i> Sampler 2: <i>Cristina Perez</i>			Client Purchase Order #			PFAS EPA Draft 1633										LAB USE ONLY
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NO ₂ H	NO ₃ H	PHOS	PHOS4	NICHI/ZINC	DI WATER	
4	AF-RHMW04-WGN01LF-2307	7/5/23	1025	<i>AWB</i>	GW	3		X								
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks										
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other			Approved By: / Date:			<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S										EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW AWB: 016-49479883
Rush T/A Data Available VIA Email or Lablink																
Sample Custody must be documented below each time samples change possession, including courier delivery.																
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Received By/Affiliation
1 <i>UC</i> / <i>AGCOM</i>		7/5/23 1510		2 <i>Alex Edmonds</i> / <i>AECOM</i>		7/5/23 1330		3 <i>Alex Edmonds</i> / <i>AECOM</i>		7/5/23 1330		4 <i>UC</i>				
5 <i>UC</i>				6 <i>UC</i> / <i>C</i>		07/07/23		7				8				

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Client / Reporting Information		Project Information				Analytical Information										Matrix Codes				
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System														DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe				
Address: 1001 Bishop St. ste 1600		Street																		
City: Honolulu State: HI Zip: 96813		City: Honolulu State: Hawaii																		
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 60697810																		
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #																		
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order #				PFAS EPA Draft 1633														
Sampler(s) Name(s) (Printed) Sampler 1: <i>Nate Nguyen</i> Sampler 2: <i>Costa Perez</i>		LAB USE ONLY																		
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	PCB	PAH	PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB
5	AF-RHMW06-WGN01LF-2307	7/5/23	1315	NV	GW	3		X												
Turnaround Time (Business days)		Data Deliverable Information				Comments / Remarks														
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By: / Date:				<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S										EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW AWB: 016-49479883				
Sample Custody must be documented below each time samples change possession, including courier delivery.																				
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation				Date Time:		Received By/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Received By/Affiliation		
1 <i>Nate Nguyen</i>		7/5/23 1440		2 <i>Miranda Debarma</i> / AECOM				7/5/23		3 <i>Miranda Debarma</i> / AECOM		7/5/23		4 <i>UC</i>						
5 <i>UC</i>				6 <i>UC</i> 07/07/23						7				8						

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SKIFF #

FC7583

Client / Reporting Information			Project Information										Analytical Information										Matrix Codes						
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System										<div style="font-size: 2em; font-weight: bold;">FC7583</div> <div style="font-size: 1.5em; font-weight: bold;">ALL</div> <div style="font-size: 1.2em;">07/05/23</div>										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe						
Address: 1001 Bishop St. ste 1600			Street																										
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii																										
Project Contact: Katie Abbott Email: katie.abbott@aecom.com			Project # 60697810																										
Project Manager: Watson Tanji Email: watson.tanji@aecom.com			Fax #																										
Phone #: 303-796-4624 / 808-954-4512			Client Purchase Order #																										
Sampler(s) Name(s) (Printed)			Sampler 1: <i>Gwin Mun</i> Sampler 2: <i>Ryan Shimamoto</i>																										
SGS Orlando Sample #	Field ID / Point of Collection		DATE		TIME		SAMPLED BY		MATRIX		TOTAL # OF BOTTLES		OTHER		NOISE		HCl		NH ₃		H ₂ SO ₄		NH ₄ -H-ZNAC		DI WATER		MESH		LAB USE ONLY
60	AF-RHMW10-WGN01 LF-2307		07/05/23		1425		GM		GW		3		X																
<div style="font-size: 1.5em; font-weight: bold;">ALL</div> <div style="font-size: 1.2em;">07/05/23</div>																													
Turnaround Time (Business days)										Data Deliverable Information										Comments / Remarks									
10 Day (Business) _____ Approved By: / Date: _____ 7 Day _____ <input checked="" type="checkbox"/> 5 Day _____ 3 Day RUSH _____ 2 Day RUSH _____ 1 Day RUSH _____ Other _____ Rush T/A Data Available VIA Email or Lablink										<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S										EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United ANB 016-49479883									
Relinquished by Sampler/Affiliation										Date Time: 07/05/23										Received By/Affiliation									
1 <i>Gwin Mun AECOM</i>										2 <i>Miranda DeGano / AECOM</i>										3 <i>Miranda DeGano / AECOM</i>									
5 <i>UC</i>										6 <i>UC</i>										7 <i>UC</i>									
Date Time: 07/07/23										Date Time: 07/07/23										Date Time: 07/07/23									

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2307AF5603

COC #: 4967WAFSG000 vs 1/0/23



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Client / Reporting Information				Project Information					Analytical Information				Matrix Codes															
Company Name: AECOM				Project Name: N6274223F0104 RH Fire Suppression System									DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe															
Address: 1001 Bishop St. ste 1600				Street																								
City: Honolulu		State: HI		Zip: 96813		City Honolulu			State Hawaii																			
Project Contact: Katie Abbott Email: katie.abbott@aecom.com				Project # 60697810																								
Project Manager: Watson Tanji Email: watson.tanji@aecom.com				Fax #																								
Phone #: 303-796-4624 / 808-954-4512				Client Purchase Order #																								
Sampler(s) Name(s) (Printed)																												
Sampler 1: Gavin Mun Sampler 2: Bryan Shimizu																												
SGS Orlando Sample #	Field ID	Point of Collection		DATE		TIME		SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION													LAB USE ONLY				
											OTHER	ALCOHOL	ACID	ALUMINUM	BUTYL	GLASS	HDPE	INCONEL	IRIDIUM	NITRILE	POLYETHYLENE	POLYPROPYLENE	STEEL		TETRAFLUOROETHYLENE	TITANIUM	VITON	
-6	AF-RHMW10-WGN01LF-2307			07/05/23	1425	GM	GW	3		X																		
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks																				
												<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S																
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other				Approved By: / Date: 				EDMS upload database: JBPHE EDMS Coverage: AFF Assessment Sampling GW United ANS 016-44479883																				
Relinquished by Sampler/Affiliation				Sample Custody must be documented below each time samples change possession, including courier delivery.				Relinquished By/Affiliation				Received By/Affiliation																
1 Gavin Mun / AECOM		Date Time: 07/05/23		2 Miranda Delgado / AECOM		Date Time: 07/05/23		3 Miranda Delgado / AECOM		Date Time: 07/05/23		4																
5		Date Time:		6		7		8																				

PFAS_COCs_ALL_07032023.xls Rev 031318

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FC7583: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC7583

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 7/7/2023 12:30:00 PM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-49479883

Therm ID: IR 1;

Therm CF: -0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (4.8);

Cooler Temps (Corrected) °C: Cooler 1: (4.6);

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 230320 pH 10-12 _____ Other: (Specify) pH 1.0 - 12.0 222221
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP

Date: 7/7/2023 12:30:00 PM

Reviewer: CD

Date: 7/9/2023

FC7583: Chain of Custody

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QC Evaluation: DOD QSM5.x Limits

Job Number: FC7583
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 07/05/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC7583

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5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20892.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20892.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	101% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	98% 20-150%
	13C8-PFOA	97% 20-150%
	13C9-PFNA	97% 20-150%
	13C6-PFDA	92% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	104% 20-150%
	13C8-FOSA	104% 20-150%
	d3-MeFOSA	93% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	104% 20-150%
	d5-EtFOSAA	105% 20-150%
	d7-MeFOSE	98% 20-150%
	d9-EtFOSE	104% 20-150%
	13C2-4:2FTS	112% 20-180%
	13C2-6:2FTS	105% 20-180%
	13C2-8:2FTS	114% 20-180%
	13C3-HFPO-DA	93% 20-150%

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Instrument Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20984.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-IBLK	6Q20984.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	98% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	92% 20-150%
	13C9-PFNA	99% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	90% 20-150%
	13C2-PFTeDA	100% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	104% 20-150%
	13C8-PFOS	112% 20-150%
	13C8-FOSA	112% 20-150%
	d3-MeFOSA	107% 20-150%
	d5-EtFOSA	116% 20-150%
	d3-MeFOSAA	115% 20-150%
	d5-EtFOSAA	113% 20-150%
	d7-MeFOSE	110% 20-150%
	d9-EtFOSE	124% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	120% 20-180%
	13C2-8:2FTS	129% 20-180%
	13C3-HFPO-DA	91% 20-150%

Continuing Calibration Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20906.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20906.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	105% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	105% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	106% 20-150%
	13C7-PFUnDA	117% 20-150%
	13C2-PFDoDA	98% 20-150%
	13C2-PFTeDA	104% 20-150%
	13C3-PFBS	103% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	108% 20-150%
	d3-MeFOSA	94% 20-150%
	d5-EtFOSA	109% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	108% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	116% 20-150%
	13C2-4:2FTS	113% 20-180%
	13C2-6:2FTS	114% 20-180%
	13C2-8:2FTS	124% 20-180%
	13C3-HFPO-DA	100% 20-150%

Continuing Calibration Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20918.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

6.1.4
6

Continuing Calibration Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20918.D	1	07/13/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	97% 20-150%
	13C4-PFHpA	95% 20-150%
	13C8-PFOA	96% 20-150%
	13C9-PFNA	110% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	99% 20-150%
	13C3-PFBS	96% 20-150%
	13C3-PFHxS	111% 20-150%
	13C8-PFOS	96% 20-150%
	13C8-FOSA	103% 20-150%
	d3-MeFOSA	96% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	107% 20-150%
	d5-EtFOSAA	111% 20-150%
	d7-MeFOSE	99% 20-150%
	d9-EtFOSE	112% 20-150%
	13C2-4:2FTS	122% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	119% 20-180%
	13C3-HFPO-DA	92% 20-150%

Method Blank Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MB	6Q20912.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MB	6Q20912.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	115% 20-150%
	13C5-PFPeA	114% 20-150%
	13C5-PFHxA	118% 20-150%
	13C4-PFHpA	118% 20-150%
	13C8-PFOA	112% 20-150%
	13C9-PFNA	114% 20-150%
	13C6-PFDA	124% 20-150%
	13C7-PFUnDA	119% 20-150%
	13C2-PFDoDA	109% 20-150%
	13C2-PFTeDA	110% 20-150%
	13C3-PFBS	117% 20-150%
	13C3-PFHxS	114% 20-150%
	13C8-PFOS	123% 20-150%
	13C8-FOSA	78% 20-150%
	d3-MeFOSA	77% 20-150%
	d5-EtFOSA	83% 20-150%
	d3-MeFOSAA	128% 20-150%
	d5-EtFOSAA	120% 20-150%
	d7-MeFOSE	69% 20-150%
	d9-EtFOSE	90% 20-150%
	13C2-4:2FTS	132% 20-180%
	13C2-6:2FTS	129% 20-180%
	13C2-8:2FTS	136% 20-180%
	13C3-HFPO-DA	106% 20-150%

Continuing Calibration Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20978.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q310-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-44:2	Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q310-ICCB	6Q20978.D	1	07/14/23	MV	n/a	n/a	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

S6Q310-IBLK

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	102% 20-150%
	13C4-PFHpA	96% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	84% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	106% 20-150%
	13C2-PFDoDA	91% 20-150%
	13C2-PFTeDA	97% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	107% 20-150%
	13C8-PFOS	108% 20-150%
	13C8-FOSA	115% 20-150%
	d3-MeFOSA	103% 20-150%
	d5-EtFOSA	112% 20-150%
	d3-MeFOSAA	106% 20-150%
	d5-EtFOSAA	116% 20-150%
	d7-MeFOSE	103% 20-150%
	d9-EtFOSE	116% 20-150%
	13C2-4:2FTS	121% 20-180%
	13C2-6:2FTS	119% 20-180%
	13C2-8:2FTS	129% 20-180%
	13C3-HFPO-DA	95% 20-150%

Blank Spike Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-LLBS	6Q20911.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0248	83	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0124	83	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0065	87	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0058	77	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0063	84	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0062	83	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0059	79	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0058	77	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0062	83	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0063	84	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0061	81	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0053	80	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0058	82	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0055	80	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0058	81	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0063	91	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0057	79	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0057	79	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0057	78	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0223	79	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0223	78	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0279	97	40-150
754-91-6	PFOSA	0.0075	0.0060	80	40-150
31506-32-8	MeFOSA	0.015	0.0130	87	40-150
4151-50-2	EtFOSA	0.015	0.0127	85	40-150
2355-31-9	MeFOSAA	0.0075	0.0063	84	40-150
2991-50-6	EtFOSAA	0.0075	0.0065	87	40-150
24448-09-7	MeFOSE	0.0375	0.0335	89	40-150
1691-99-2	EtFOSE	0.0375	0.0274	73	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0134	89	40-150
919005-14-4	ADONA	0.0142	0.0132	93	40-150
377-73-1	PFMPA	0.015	0.0128	85	40-150
863090-89-5	PFMBA	0.015	0.0128	85	40-150
151772-58-6	NFDHA	0.015	0.0129	86	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0126	90	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0120	85	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-LLBS	6Q20911.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0109	82	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0223	59	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.148	79	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.159	85	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	118%	20-150%
	13C5-PFPeA	117%	20-150%
	13C5-PFHxA	116%	20-150%
	13C4-PFHpA	122%	20-150%
	13C8-PFOA	116%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	129%	20-150%
	13C7-PFUnDA	127%	20-150%
	13C2-PFDoDA	116%	20-150%
	13C2-PFTeDA	113%	20-150%
	13C3-PFBS	123%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	127%	20-150%
	13C8-FOSA	93%	20-150%
	d3-MeFOSA	89%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	127%	20-150%
	d5-EtFOSAA	129%	20-150%
	d7-MeFOSE	79%	20-150%
	d9-EtFOSE	104%	20-150%
	13C2-4:2FTS	144%	20-180%
	13C2-6:2FTS	146%	20-180%
	13C2-8:2FTS	134%	20-180%
	13C3-HFPO-DA	106%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-BS	6Q20910.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0831	83	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0424	85	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0212	85	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0223	89	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0209	84	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0224	90	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0239	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0234	94	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0219	88	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0220	88	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0246	98	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0195	88	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0191	81	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0195	85	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0195	82	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0190	82	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0196	81	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0187	78	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0189	78	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0789	84	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0851	90	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0788	82	40-150
754-91-6	PFOSA	0.025	0.0202	81	40-150
31506-32-8	MeFOSA	0.05	0.0444	89	40-150
4151-50-2	EtFOSA	0.05	0.0414	83	40-150
2355-31-9	MeFOSAA	0.025	0.0207	83	40-150
2991-50-6	EtFOSAA	0.025	0.0227	91	40-150
24448-09-7	MeFOSE	0.125	0.107	86	40-150
1691-99-2	EtFOSE	0.125	0.0926	74	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0444	89	40-150
919005-14-4	ADONA	0.0473	0.0475	101	40-150
377-73-1	PFMPA	0.05	0.0432	86	40-150
863090-89-5	PFMBA	0.05	0.0436	87	40-150
151772-58-6	NFDHA	0.05	0.0421	84	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0424	91	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0433	92	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-BS	6Q20910.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0382	86	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0734	59	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.481	77	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.496	79	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	118%	20-150%
	13C5-PFPeA	115%	20-150%
	13C5-PFHxA	116%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	119%	20-150%
	13C3-PFHxS	126%	20-150%
	13C8-PFOS	122%	20-150%
	13C8-FOSA	80%	20-150%
	d3-MeFOSA	73%	20-150%
	d5-EtFOSA	82%	20-150%
	d3-MeFOSAA	115%	20-150%
	d5-EtFOSAA	116%	20-150%
	d7-MeFOSE	66%	20-150%
	d9-EtFOSE	85%	20-150%
	13C2-4:2FTS	138%	20-180%
	13C2-6:2FTS	137%	20-180%
	13C2-8:2FTS	144%	20-180%
	13C3-HFPO-DA	104%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MS	6Q20916.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-3	6Q20915.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	FC7583-3 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.015 U		0.0943	0.0868	92	40-150
2706-90-3	Perfluoropentanoic acid	0.0029 J		0.0472	0.0460	91	40-150
307-24-4	Perfluorohexanoic acid	0.0014 J		0.0236	0.0218	86	40-150
375-85-9	Perfluoroheptanoic acid	0.0015 J		0.0236	0.0220	87	40-150
335-67-1	Perfluorooctanoic acid	0.0037 U		0.0236	0.0214	91	40-150
375-95-1	Perfluorononanoic acid	0.0037 U		0.0236	0.0241	102	40-150
335-76-2	Perfluorodecanoic acid	0.0037 U		0.0236	0.0205	87	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037 U		0.0236	0.0198	84	40-150
307-55-1	Perfluorododecanoic acid	0.0037 U		0.0236	0.0252	107	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037 U		0.0236	0.0231	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037 U		0.0236	0.0254	108	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0037 U		0.0209	0.0190	91	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0046 U		0.0222	0.0193	87	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0037 U		0.0216	0.0179	83	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0037 U		0.0225	0.0216	96	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0037 U		0.0219	0.0208	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037 U		0.0227	0.0189	83	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037 U		0.0228	0.0202	89	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046 U		0.0229	0.0187	82	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0884	0.0856	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0047 J		0.0896	0.0870	92	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0906	0.0923	102	40-150
754-91-6	PFOSA	0.0037 U		0.0236	0.0222	94	40-150
31506-32-8	MeFOSA	0.0074 U		0.0472	0.0453	96	40-150
4151-50-2	EtFOSA	0.0074 U		0.0472	0.0437	93	40-150
2355-31-9	MeFOSAA	0.0046 U		0.0236	0.0231	98	40-150
2991-50-6	EtFOSAA	0.0046 U		0.0236	0.0212	90	40-150
24448-09-7	MeFOSE	0.037 U		0.118	0.109	92	40-150
1691-99-2	EtFOSE	0.037 U		0.118	0.106	90	40-150
13252-13-6	HFPO-DA (GenX)	0.0037 U		0.0472	0.0428	91	40-150
919005-14-4	ADONA	0.0074 U		0.0446	0.0487	109	40-150
377-73-1	PFMPA	0.0074 U		0.0472	0.0431	91	40-150
863090-89-5	PFMBA	0.0074 U		0.0472	0.0429	91	40-150
151772-58-6	NFDHA	0.0074 U		0.0472	0.0408	86	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0074 U		0.0441	0.0420	95	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0074 U		0.0446	0.0380	85	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-MS	6Q20916.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-3	6Q20915.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	FC7583-3 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0074 U	0.042	0.0364	87	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.118	0.0773	66	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.092 U	0.59	0.477	81	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.092 U	0.59	0.508	86	40-150

CAS No.	ID Standard Recoveries	MS	FC7583-3	Limits
	13C4-PFBA	96%	101%	20-150%
	13C5-PFPeA	108%	107%	20-150%
	13C5-PFHxA	113%	109%	20-150%
	13C4-PFHpA	122%	110%	20-150%
	13C8-PFOA	113%	110%	20-150%
	13C9-PFNA	96%	108%	20-150%
	13C6-PFDA	110%	123%	20-150%
	13C7-PFUnDA	111%	106%	20-150%
	13C2-PFDoDA	87%	93%	20-150%
	13C2-PFTeDA	81%	84%	20-150%
	13C3-PFBS	108%	108%	20-150%
	13C3-PFHxS	114%	115%	20-150%
	13C8-PFOS	100%	111%	20-150%
	13C8-FOSA	73%	93%	20-150%
	d3-MeFOSA	74%	85%	20-150%
	d5-EtFOSA	84%	88%	20-150%
	d3-MeFOSAA	101%	113%	20-150%
	d5-EtFOSAA	106%	110%	20-150%
	d7-MeFOSE	72%	85%	20-150%
	d9-EtFOSE	84%	97%	20-150%
	13C2-4:2FTS	106%	106%	20-180%
	13C2-6:2FTS	115%	122%	20-180%
	13C2-8:2FTS	111%	127%	20-180%
	13C3-HFPO-DA	100%	96%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-DUP	6Q20919.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-4	6Q20920.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	FC7583-4 ug/l	DUP Q ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.014 U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0070 U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0035 U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0035 U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0035 U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0035 U	0.00065 J		200*	30
335-76-2	Perfluorodecanoic acid	0.0035 U	0.00093 J		200*	30
2058-94-8	Perfluoroundecanoic acid	0.0035 U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0035 U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0035 U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0035 U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0035 U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0035 U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0035 U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0035 U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0035 U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0035 U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0044 U	ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	ND		nc	30
754-91-6	PFOSA	0.0035 U	ND		nc	30
31506-32-8	MeFOSA	0.0070 U	ND		nc	30
4151-50-2	EtFOSA	0.0070 U	ND		nc	30
2355-31-9	MeFOSAA	0.0044 U	ND		nc	30
2991-50-6	EtFOSAA	0.0044 U	ND		nc	30
24448-09-7	MeFOSE	0.035 U	ND		nc	30
1691-99-2	EtFOSE	0.035 U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0035 U	ND		nc	30
919005-14-4	ADONA	0.0070 U	ND		nc	30
377-73-1	PFMPA	0.0070 U	ND		nc	30
863090-89-5	PFMBA	0.0070 U	ND		nc	30
151772-58-6	NFDHA	0.0070 U	ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0070 U	ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0070 U	ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC7583
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97799-DUP	6Q20919.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310
FC7583-4	6Q20920.D	1	07/13/23	MV	07/12/23	OP97799	S6Q310

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC7583-1, FC7583-2, FC7583-3, FC7583-4, FC7583-5, FC7583-6

CAS No.	Compound	FC7583-4 ug/l	DUP Q	ug/l	Q	RPD	Limits
113507-82-7PFEESA		0.0070 U		ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U		ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.088 U		ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.088 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC7583-4	Limits
	13C4-PFBA	112%	105%	20-150%
	13C5-PFPeA	116%	103%	20-150%
	13C5-PFHxA	115%	106%	20-150%
	13C4-PFHpA	123%	108%	20-150%
	13C8-PFOA	117%	111%	20-150%
	13C9-PFNA	108%	106%	20-150%
	13C6-PFDA	121%	97%	20-150%
	13C7-PFUnDA	118%	98%	20-150%
	13C2-PFDoDA	100%	82%	20-150%
	13C2-PFTeDA	104%	77%	20-150%
	13C3-PFBS	124%	113%	20-150%
	13C3-PFHxS	125%	115%	20-150%
	13C8-PFOS	119%	111%	20-150%
	13C8-FOSA	98%	89%	20-150%
	d3-MeFOSA	91%	82%	20-150%
	d5-EtFOSA	97%	90%	20-150%
	d3-MeFOSAA	96%	104%	20-150%
	d5-EtFOSAA	119%	111%	20-150%
	d7-MeFOSE	80%	79%	20-150%
	d9-EtFOSE	101%	95%	20-150%
	13C2-4:2FTS	142%	135%	20-180%
	13C2-6:2FTS	140%	129%	20-180%
	13C2-8:2FTS	137%	128%	20-180%
	13C3-HFPO-DA	102%	91%	20-150%

* = Outside of Control Limits.