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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC2270

Sampling Date: 01/27/23



Report to:

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Total number of pages in report: 40



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

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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC2270

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC2270-1	01/27/23	09:50	AYNT 01/28/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2301W4
FC2270-2	01/27/23	11:30	AYNT 01/28/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2301W4
FC2270-3	01/27/23	13:20	AYNT 01/28/23	AQ	Equipment Blank	AF-RHMW17D-WQEB01-2301W4
FC2270-4	01/27/23	09:35	AYNT 01/28/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2301W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC2270

Site: N6274223F0104 RH Fire Suppression System

Report Date: 2/7/2023 4:52:11 PM

On 01/28/2023, 3 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2270 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: OP95216

Sample(s) FC2239-1MS, FC2270-2DUP were used as the QC samples indicated.

Sample(s) FC2270-2 have surrogates outside control limits.

FC2270-2: Dilution required (ID recovery standard failure).

FC2270-2 for d5-EtFOSAA: Outside control limits.

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: FC2270
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/27/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC2270-1 AF-RHMW17-WGN01LF-2301W4

Perfluorobutanoic acid	2.8 J	18	3.6	ng/l	EPA DRAFT 1633
Perfluoropentanoic acid	6.2 J	8.9	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	3.4 J	4.5	0.89	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate	14.8 J	18	7.1	ng/l	EPA DRAFT 1633

FC2270-2 AF-RHMW17D-WGN01LF-2301W4

6:2 Fluorotelomer sulfonate	6.4 J	19	7.7	ng/l	EPA DRAFT 1633
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FC2270-3 AF-RHMW17D-WQEB01-2301W4

No hits reported in this sample.

FC2270-4 AF-RHMW17D-WQFB01-2301W4

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2301W4		
Lab Sample ID:	FC2270-1	Date Sampled:	01/27/23
Matrix:	AQ - Ground Water	Date Received:	01/28/23
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	6Q12905.D	1	02/03/23 14:55	MV	01/30/23 09:00	OP95216	S6Q198
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 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	2.8	18	3.6	1.7	ng/l	J
2706-90-3	Perfluoropentanoic acid	6.2	8.9	1.8	0.84	ng/l	J
307-24-4	Perfluorohexanoic acid	3.4	4.5	0.89	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.5	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.5	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.89 U	4.5	0.89	0.45	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.89 U	4.5	0.89	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	4.5	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.89 U	4.5	0.89	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.5	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.5	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.5	1.8	0.57	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	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	14.8	18	7.1	3.1	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	1.8 U	4.5	1.8	0.60	ng/l	
31506-32-8	MeFOSA	1.8 U	4.5	1.8	0.89	ng/l	
4151-50-2	EtFOSA	1.8 U	4.5	1.8	0.89	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

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2301W4		
Lab Sample ID:	FC2270-1	Date Sampled:	01/27/23
Matrix:	AQ - Ground Water	Date Received:	01/28/23
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	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	8.9 U	45	8.9	3.9	ng/l	
1691-99-2	EtFOSE	18 U	45	18	6.6	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.6 U	18	3.6	0.89	ng/l	
919005-14-4	ADONA	3.6 U	18	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	8.9	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	8.9	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	8.9	3.6	1.1	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	18	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	18	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	8.9	1.8	0.70	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	22	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	96%		20-150%
	13C5-PFPeA	112%		20-150%
	13C5-PFHxA	115%		20-150%
	13C4-PFHpA	112%		20-150%
	13C8-PFOA	98%		20-150%
	13C9-PFNA	104%		20-150%
	13C6-PFDA	116%		20-150%
	13C7-PFUnDA	102%		20-150%
	13C2-PFDoDA	92%		20-150%
	13C2-PFTeDA	86%		20-150%
	13C3-PFBS	96%		20-150%
	13C3-PFHxS	104%		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-RHMW17-WGN01LF-2301W4	
Lab Sample ID:	FC2270-1	Date Sampled: 01/27/23
Matrix:	AQ - Ground Water	Date Received: 01/28/23
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	103%		20-150%
	13C8-FOSA	106%		20-150%
	d3-MeFOSA	90%		20-150%
	d5-EtFOSA	95%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	93%		20-150%
	d7-MeFOSE	94%		20-150%
	d9-EtFOSE	95%		20-150%
	13C2-4:2FTS	123%		20-150%
	13C2-6:2FTS	111%		20-150%
	13C2-8:2FTS	99%		20-150%
	13C3-HFPO-DA	114%		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-RHMW17D-WGN01LF-2301W4		
Lab Sample ID:	FC2270-2	Date Sampled:	01/27/23
Matrix:	AQ - Ground Water	Date Received:	01/28/23
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	6Q12906.D	1	02/03/23 15:09	MV	01/30/23 09:00	OP95216	S6Q198
Run #2 ^a	6Q13141.D	5	02/06/23 22:43	MV	01/30/23 09:00	OP95216	S6Q201

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

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	3.8 U	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.6	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.96 U	4.8	0.96	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	4.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.8	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	6.4	19	7.7	3.3	ng/l	J
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	4.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	1.9 U	4.8	1.9	0.96	ng/l	
4151-50-2	EtFOSA	1.9 U	4.8	1.9	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

4.2
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Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2301W4		Date Sampled:	01/27/23
Lab Sample ID:	FC2270-2		Date Received:	01/28/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
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	3.8 U	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	19 U ^b	24	19	6.4	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.6 U	48	9.6	4.2	ng/l	
1691-99-2	EtFOSE	19 U	48	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.96	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.6	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	9.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.6	3.8	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.6	1.9	0.75	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	24	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	110%	110%	20-150%
	13C5-PFPeA	117%	112%	20-150%
	13C5-PFHxA	116%	107%	20-150%
	13C4-PFHpA	115%	110%	20-150%
	13C8-PFOA	110%	108%	20-150%
	13C9-PFNA	121%	97%	20-150%
	13C6-PFDA	99%	118%	20-150%
	13C7-PFUnDA	99%	110%	20-150%
	13C2-PFDoDA	88%	85%	20-150%
	13C2-PFTeDA	63%	71%	20-150%
	13C3-PFBS	99%	124%	20-150%
	13C3-PFHxS	109%	131%	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

4.2
4

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2301W4		Date Sampled:	01/27/23
Lab Sample ID:	FC2270-2		Date Received:	01/28/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	108%	67%	20-150%
	13C8-FOSA	108%	51%	20-150%
	d3-MeFOSA	92%	43%	20-150%
	d5-EtFOSA	87%	44%	20-150%
	d3-MeFOSAA	136%	62%	20-150%
	d5-EtFOSAA	152% ^c	60%	20-150%
	d7-MeFOSE	96%	46%	20-150%
	d9-EtFOSE	96%	48%	20-150%
	13C2-4:2FTS	117%	122%	20-150%
	13C2-6:2FTS	100%	126%	20-150%
	13C2-8:2FTS	100%	96%	20-150%
	13C3-HFPO-DA	117%	124%	20-150%

(a) Dilution required (ID recovery standard failure).

(b) Result is from Run# 2

(c) Outside control limits.

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-RHMW17D-WQEB01-2301W4		
Lab Sample ID:	FC2270-3	Date Sampled:	01/27/23
Matrix:	AQ - Equipment Blank	Date Received:	01/28/23
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	6Q12908.D	1	02/03/23 15:37	MV	01/30/23 09:00	OP95216	S6Q198
Run #2							

Run #	Initial Volume	Final Volume
Run #1	510 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	3.9 U	20	3.9	1.9	ng/l	
2706-90-3	Perfluoropentanoic acid	2.0 U	9.8	2.0	0.92	ng/l	
307-24-4	Perfluorohexanoic acid	0.98 U	4.9	0.98	0.49	ng/l	
375-85-9	Perfluoroheptanoic acid	0.98 U	4.9	0.98	0.49	ng/l	
335-67-1	Perfluorooctanoic acid	0.98 U	4.9	0.98	0.49	ng/l	
375-95-1	Perfluorononanoic acid	2.0 U	4.9	2.0	0.60	ng/l	
335-76-2	Perfluorodecanoic acid	0.98 U	4.9	0.98	0.49	ng/l	
2058-94-8	Perfluoroundecanoic acid	2.0 U	4.9	2.0	0.59	ng/l	
307-55-1	Perfluorododecanoic acid	2.0 U	4.9	2.0	0.59	ng/l	
72629-94-8	Perfluorotridecanoic acid	2.0 U	4.9	2.0	0.82	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.98 U	4.9	0.98	0.49	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.98 U	4.9	0.98	0.49	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.9 U	4.9	3.9	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	2.0 U	4.9	2.0	0.69	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.98 U	4.9	0.98	0.49	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.0 U	4.9	2.0	0.53	ng/l	
68259-12-1	Perfluorononanesulfonic acid	2.0 U	4.9	2.0	0.56	ng/l	
335-77-3	Perfluorodecanesulfonic acid	2.0 U	4.9	2.0	0.63	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.9 U	4.9	3.9	1.1	ng/l	

FLUOROTELOMER SULFONIC ACIDS

757124-72-4	4:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.2	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.4	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.8 U	20	7.8	4.0	ng/l	

PERFLUOROOCCTANE SULFONAMIDES

754-91-6	PFOSA	2.0 U	4.9	2.0	0.66	ng/l	
31506-32-8	MeFOSA	2.0 U	4.9	2.0	0.98	ng/l	
4151-50-2	EtFOSA	2.0 U	4.9	2.0	0.98	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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQEB01-2301W4		
Lab Sample ID:	FC2270-3	Date Sampled:	01/27/23
Matrix:	AQ - Equipment Blank	Date Received:	01/28/23
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	3.9 U	4.9	3.9	0.98	ng/l	
2991-50-6	EtFOSAA	3.9 U	4.9	3.9	1.3	ng/l	

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

24448-09-7	MeFOSE	9.8 U	49	9.8	4.3	ng/l	
1691-99-2	EtFOSE	20 U	49	20	7.3	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.9 U	20	3.9	0.98	ng/l	
919005-14-4	ADONA	3.9 U	20	3.9	1.8	ng/l	
377-73-1	PFMPA	2.0 U	9.8	2.0	0.98	ng/l	
863090-89-5	PFMBA	3.9 U	9.8	3.9	1.1	ng/l	
151772-58-6	NFDHA	3.9 U	9.8	3.9	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.9 U	20	3.9	1.4	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.9 U	20	3.9	1.7	ng/l	
113507-82-7	PFEESA	2.0 U	9.8	2.0	0.76	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.8 U	25	9.8	4.4	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	20 U	120	20	8.6	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	20 U	120	20	7.7	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	108%		20-150%
	13C5-PFPeA	106%		20-150%
	13C5-PFHxA	107%		20-150%
	13C4-PFHpA	105%		20-150%
	13C8-PFOA	103%		20-150%
	13C9-PFNA	112%		20-150%
	13C6-PFDA	124%		20-150%
	13C7-PFUnDA	114%		20-150%
	13C2-PFDoDA	104%		20-150%
	13C2-PFTeDA	82%		20-150%
	13C3-PFBS	107%		20-150%
	13C3-PFHxS	116%		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-RHMW17D-WQEB01-2301W4	
Lab Sample ID:	FC2270-3	Date Sampled: 01/27/23
Matrix:	AQ - Equipment Blank	Date Received: 01/28/23
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	105%		20-150%
	d3-MeFOSA	98%		20-150%
	d5-EtFOSA	98%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	103%		20-150%
	d7-MeFOSE	92%		20-150%
	d9-EtFOSE	92%		20-150%
	13C2-4:2FTS	122%		20-150%
	13C2-6:2FTS	107%		20-150%
	13C2-8:2FTS	107%		20-150%
	13C3-HFPO-DA	104%		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-RHMW17D-WQFB01-2301W4		
Lab Sample ID:	FC2270-4	Date Sampled:	01/27/23
Matrix:	AQ - Field Blank Water	Date Received:	01/28/23
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	6Q12909.D	1	02/03/23 15:51	MV	01/30/23 09:00	OP95216	S6Q198
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	19	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	9.6	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.96 U	4.8	0.96	0.48	ng/l	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.96 U	4.8	0.96	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	4.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.96 U	4.8	0.96	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.8	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	4.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	1.9 U	4.8	1.9	0.96	ng/l	
4151-50-2	EtFOSA	1.9 U	4.8	1.9	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

4.4
4

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2301W4		
Lab Sample ID:	FC2270-4	Date Sampled:	01/27/23
Matrix:	AQ - Field Blank Water	Date Received:	01/28/23
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	3.8 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	9.6 U	48	9.6	4.2	ng/l	
1691-99-2	EtFOSE	19 U	48	19	7.1	ng/l	

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

13252-13-6	HFPO-DA (GenX)	3.8 U	19	3.8	0.96	ng/l	
919005-14-4	ADONA	3.8 U	19	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	9.6	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	9.6	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	9.6	3.8	1.2	ng/l	

PER and POLYFLUOROETHER SULFONIC ACIDS

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	19	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	19	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	9.6	1.9	0.75	ng/l	

FLUOROTELOMER CARBOXYLIC ACIDS

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	24	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	110%		20-150%
	13C5-PFPeA	113%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	101%		20-150%
	13C9-PFNA	113%		20-150%
	13C6-PFDA	113%		20-150%
	13C7-PFUnDA	97%		20-150%
	13C2-PFDoDA	91%		20-150%
	13C2-PFTeDA	90%		20-150%
	13C3-PFBS	104%		20-150%
	13C3-PFHxS	110%		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-RHMW17D-WQFB01-2301W4		
Lab Sample ID:	FC2270-4	Date Sampled:	01/27/23
Matrix:	AQ - Field Blank Water	Date Received:	01/28/23
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	98%		20-150%
	13C8-FOSA	97%		20-150%
	d3-MeFOSA	86%		20-150%
	d5-EtFOSA	94%		20-150%
	d3-MeFOSAA	92%		20-150%
	d5-EtFOSAA	94%		20-150%
	d7-MeFOSE	92%		20-150%
	d9-EtFOSE	97%		20-150%
	13C2-4:2FTS	124%		20-150%
	13C2-6:2FTS	118%		20-150%
	13C2-8:2FTS	113%		20-150%
	13C3-HFPO-DA	118%		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



SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC2270

COC #: 2301W4AFSG11
PAGE 1 OF 1

SGS - ORLANDO JOB #:

Client / Reporting Information		Project Information		Analytical Information												Matrix Codes	
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">PFAS EPA Draft 1633</div> <div style="margin-left: 20px;"> </div> </div>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OJ - 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 Tani Email: watson.tani@aecom.com		Fax #															
Phone #: 303-796-4624 / 808-964-4612		Client Purchase Order #															
Sampler(s) Name(s) (Printed) Sampler 1: <i>Andy Young</i> Sampler 2: <i>Nash Turner</i>																	
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION		CONTAINER INFORMATION												LAB USE ONLY	
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NOVE	PCU	NIOSH	INSD	PERCA	NIOSH-ZNAC	IN WATER	MECH		
2	AF-RHMMV17D-WGN01LF-2301W4	11/27/23	1130	AT, TN, NT	GW	3		X									X
3	AF-RHMMV17D-WQEB01-2301W4	11/27/23	1320	AT, TN, NT	GW	3		X									X
7	AF-RHMMV17D-WQFB01-2301W4	11/27/23	0935	AT, TN, NT	GW	3		X									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 <i>United AMP 016-84890724</i>									
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 <i>Andy Young AECOM</i>		11/27/23 1300		2 <i>Kevin G... AECOM</i>		11/27/23 1520		3 <i>Kevin G... AECOM</i>		11/27/23 1520		4 <i>Kevin G... AECOM</i>		11/28/23 1530			
5				6				7				8					
Lab Use Only : Cooler Temperature (s) Celsius (corrected):												http://www.sgs.com/en/terms-and-conditions					

PFAS_COCs_ALL.xls Rev 031316

FC2270: Chain of Custody

Page 2 of 3



SGS Sample Receipt Summary

Job Number: FC2270

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 1/28/2023 3:30:00 PM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-84890724

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (4.0);

Cooler Information

Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Temp criteria achieved | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Cooler temp verification | IR Gun | |
| 5. Cooler media | Ice (Bag) | |

Sample Information

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Samples preserved properly | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Sufficient volume/containers recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Condition of sample | Intact | | |
| 5. Sample recvd within HT | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 6. Dates/Times/IDs on COC match Sample Label | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 7. VOCs have headspace | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 9. Compositing instructions clear | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Voa Soil Kits/Jars received past 48hrs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. % Solids Jar received? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Residual Chlorine Present? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

W or S N/A

- | | | | |
|------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Type Of TB Received | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|------------------------|--------------------------|--------------------------|-------------------------------------|

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: NATHANS

Date: 1/28/2023 3:30:00 PM

Reviewer: CD

Date: 1/30/2023

FC2270: Chain of Custody

Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2270
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/27/23

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 FC2270

5.2
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: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q198-IBLK	6Q12887.D	1	02/03/23	MV	n/a	n/a	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	0.0025	0.0050	0.0010	ug/l	J
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	0.0086	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0154	0.050	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Instrument Blank

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q198-IBLK	6Q12887.D	1	02/03/23	MV	n/a	n/a	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	102% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	99% 20-150%
	13C8-PFOA	94% 20-150%
	13C9-PFNA	101% 20-150%
	13C6-PFDA	112% 20-150%
	13C7-PFUnDA	107% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	107% 20-150%
	13C3-PFBS	105% 20-150%
	13C3-PFHxS	105% 20-150%
	13C8-PFOS	99% 20-150%
	13C8-FOSA	107% 20-150%
	d3-MeFOSA	98% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	101% 20-150%
	d5-EtFOSAA	102% 20-150%
	d7-MeFOSE	105% 20-150%
	d9-EtFOSE	107% 20-150%
	13C2-4:2FTS	114% 20-150%
	13C2-6:2FTS	115% 20-150%
	13C2-8:2FTS	114% 20-150%
	13C3-HFPO-DA	98% 20-150%

6.1.1
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Instrument Blank

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q201-IBLK	6Q13098.D	1	02/06/23	MV	n/a	n/a	S6Q201

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	107% 20-150%
	13C5-PFHxA	107% 20-150%
	13C4-PFHpA	107% 20-150%
	13C8-PFOA	104% 20-150%
	13C9-PFNA	102% 20-150%
	13C6-PFDA	114% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	107% 20-150%
	13C2-PFTeDA	103% 20-150%
	13C3-PFBS	104% 20-150%
	13C3-PFHxS	108% 20-150%
	13C8-PFOS	103% 20-150%
	13C8-FOSA	109% 20-150%
	d3-MeFOSAA	100% 20-150%
	d5-EtFOSAA	103% 20-150%
	13C2-4:2FTS	110% 20-150%
	13C2-6:2FTS	104% 20-150%
	13C2-8:2FTS	110% 20-150%

6.1.2

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Continuing Calibration Blank

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q198-ICCB	6Q12901.D	1	02/03/23	MV	n/a	n/a	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q198-ICCB	6Q12901.D	1	02/03/23	MV	n/a	n/a	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	98% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	92% 20-150%
	13C4-PFHpA	104% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	92% 20-150%
	13C6-PFDA	105% 20-150%
	13C7-PFUnDA	99% 20-150%
	13C2-PFDoDA	99% 20-150%
	13C2-PFTeDA	104% 20-150%
	13C3-PFBS	95% 20-150%
	13C3-PFHxS	88% 20-150%
	13C8-PFOS	105% 20-150%
	13C8-FOSA	109% 20-150%
	d3-MeFOSAA	103% 20-150%
	d5-EtFOSAA	108% 20-150%
	13C2-4:2FTS	110% 20-150%
	13C2-6:2FTS	96% 20-150%
	13C2-8:2FTS	94% 20-150%

Continuing Calibration Blank

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q201-ICCB	6Q13137.D	1	02/06/23	MV	n/a	n/a	S6Q201

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 20-150%
	13C5-PFPeA	104% 20-150%
	13C5-PFHxA	103% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	108% 20-150%
	13C6-PFDA	104% 20-150%
	13C7-PFUnDA	100% 20-150%
	13C2-PFDoDA	107% 20-150%
	13C2-PFTeDA	108% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	97% 20-150%
	13C8-PFOS	100% 20-150%
	13C8-FOSA	98% 20-150%
	d3-MeFOSAA	97% 20-150%
	d5-EtFOSAA	102% 20-150%
	13C2-4:2FTS	107% 20-150%
	13C2-6:2FTS	116% 20-150%
	13C2-8:2FTS	102% 20-150%

6.1.4

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Method Blank Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-MB	6Q12892.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.020	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.010	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0050	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0050	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0050	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0050	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0050	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0050	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0050	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0050	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0050	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0050	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0050	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0050	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0050	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0050	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0050	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	0.0050	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0050	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0050	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	0.050	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.050	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-MB	6Q12892.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.010	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.025	0.0045	ug/l	
914637-49-35:3	Fluorotelomer carboxylate	ND	0.13	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.13	0.0079	ug/l	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 20-150%
	13C5-PFPeA	108% 20-150%
	13C5-PFHxA	107% 20-150%
	13C4-PFHpA	107% 20-150%
	13C8-PFOA	105% 20-150%
	13C9-PFNA	107% 20-150%
	13C6-PFDA	113% 20-150%
	13C7-PFUnDA	112% 20-150%
	13C2-PFDoDA	94% 20-150%
	13C2-PFTeDA	90% 20-150%
	13C3-PFBS	91% 20-150%
	13C3-PFHxS	94% 20-150%
	13C8-PFOS	93% 20-150%
	13C8-FOSA	92% 20-150%
	d3-MeFOSA	79% 20-150%
	d5-EtFOSA	81% 20-150%
	d3-MeFOSAA	85% 20-150%
	d5-EtFOSAA	84% 20-150%
	d7-MeFOSE	88% 20-150%
	d9-EtFOSE	94% 20-150%
	13C2-4:2FTS	105% 20-150%
	13C2-6:2FTS	109% 20-150%
	13C2-8:2FTS	107% 20-150%
	13C3-HFPO-DA	107% 20-150%

6.1.5
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Blank Spike Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-LLBS	6Q12891.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0396	99	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0205	103	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0104	104	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0096	96	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0107	107	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0103	103	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0105	105	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0106	106	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0103	103	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0098	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0112	112	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0090	101	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0091	97	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0095	104	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0100	105	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0094	101	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0098	102	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0082	85	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0081	84	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0375	0.0377	101	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0388	102	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0358	93	40-150
754-91-6	PFOSA	0.01	0.0106	106	40-150
31506-32-8	MeFOSA	0.01	0.0097	97	40-150
4151-50-2	EtFOSA	0.01	0.0092	92	40-150
2355-31-9	MeFOSAA	0.01	0.010	100	40-150
2991-50-6	EtFOSAA	0.01	0.0087	87	40-150
24448-09-7	MeFOSE	0.1	0.0914	91	40-150
1691-99-2	EtFOSE	0.1	0.0878	88	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0424	106	40-150
919005-14-4	ADONA	0.0378	0.0360	95	40-150
377-73-1	PFMPA	0.02	0.0206	103	40-150
863090-89-5	PFMBA	0.02	0.0195	98	40-150
151772-58-6	NFDHA	0.02	0.0219	110	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0374	0.0390	104	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0378	0.0364	96	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-LLBS	6Q12891.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0176	99	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0421	84	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.25	0.233	93	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.238	95	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	106%	20-150%
	13C5-PFPeA	108%	20-150%
	13C5-PFHxA	107%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	80%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	105%	20-150%
	13C8-FOSA	101%	20-150%
	d3-MeFOSA	85%	20-150%
	d5-EtFOSA	83%	20-150%
	d3-MeFOSAA	107%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	90%	20-150%
	d9-EtFOSE	94%	20-150%
	13C2-4:2FTS	124%	20-150%
	13C2-6:2FTS	114%	20-150%
	13C2-8:2FTS	123%	20-150%
	13C3-HFPO-DA	113%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-BS	6Q12890.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0962	96	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0487	97	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0231	92	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0239	96	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0234	94	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0224	90	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0241	96	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0245	98	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0242	97	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0248	99	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0246	98	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0206	93	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0227	96	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0216	95	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0242	102	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0221	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0221	92	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0221	92	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0217	89	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0894	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0914	96	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0970	101	40-150
754-91-6	PFOSA	0.025	0.0227	91	40-150
31506-32-8	MeFOSA	0.025	0.0217	87	40-150
4151-50-2	EtFOSA	0.025	0.0209	84	40-150
2355-31-9	MeFOSAA	0.025	0.0242	97	40-150
2991-50-6	EtFOSAA	0.025	0.0221	88	40-150
24448-09-7	MeFOSE	0.25	0.239	96	40-150
1691-99-2	EtFOSE	0.25	0.213	85	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0967	97	40-150
919005-14-4	ADONA	0.0945	0.0939	99	40-150
377-73-1	PFMPA	0.05	0.0226	45	40-150
863090-89-5	PFMBA	0.05	0.0508	102	40-150
151772-58-6	NFDHA	0.05	0.0483	97	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0935	0.0859	92	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0945	0.0858	91	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-BS	6Q12890.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0405	91	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0776	62	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.556	89	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.563	90	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	23%	20-150%
	13C5-PFPeA	109%	20-150%
	13C5-PFHxA	114%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	114%	20-150%
	13C9-PFNA	115%	20-150%
	13C6-PFDA	117%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	104%	20-150%
	13C3-PFBS	109%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	115%	20-150%
	13C8-FOSA	123%	20-150%
	d3-MeFOSA	112%	20-150%
	d5-EtFOSA	112%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	119%	20-150%
	d7-MeFOSE	109%	20-150%
	d9-EtFOSE	118%	20-150%
	13C2-4:2FTS	117%	20-150%
	13C2-6:2FTS	123%	20-150%
	13C2-8:2FTS	117%	20-150%
	13C3-HFPO-DA	116%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-MS	6Q12899.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198
FC2239-1	6Q12898.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	FC2239-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.020 U		0.098	0.0996	102	40-150
2706-90-3	Perfluoropentanoic acid	0.0098 U		0.049	0.0509	104	40-150
307-24-4	Perfluorohexanoic acid	0.00086 J		0.0245	0.0237	93	40-150
375-85-9	Perfluoroheptanoic acid	0.0049 U		0.0245	0.0253	103	40-150
335-67-1	Perfluorooctanoic acid	0.00093 J		0.0245	0.0270	106	40-150
375-95-1	Perfluorononanoic acid	0.0049 U		0.0245	0.0242	99	40-150
335-76-2	Perfluorodecanoic acid	0.0049 U		0.0245	0.0241	98	40-150
2058-94-8	Perfluoroundecanoic acid	0.0049 U		0.0245	0.0254	104	40-150
307-55-1	Perfluorododecanoic acid	0.0049 U		0.0245	0.0269	110	40-150
72629-94-8	Perfluorotridecanoic acid	0.0049 U		0.0245	0.0224	91	40-150
376-06-7	Perfluorotetradecanoic acid	0.0049 U		0.0245	0.0269	110	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0049 U		0.0217	0.0228	105	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0049 U		0.0231	0.0240	104	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0010 J		0.0224	0.0250	107	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0049 U		0.0234	0.0235	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0049 U		0.0227	0.0309	136	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0049 U		0.0236	0.0224	95	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0049 U		0.0237	0.0209	88	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0049 U		0.0238	0.0204	86	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.020 U		0.0919	0.0942	102	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.020 U		0.0931	0.0945	101	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.020 U		0.0941	0.0977	104	40-150
754-91-6	PFOSA	0.0049 U		0.0245	0.0246	100	40-150
31506-32-8	MeFOSA	0.0049 U		0.0245	0.0236	96	40-150
4151-50-2	EtFOSA	0.0049 U		0.0245	0.0235	96	40-150
2355-31-9	MeFOSAA	0.0049 U		0.0245	0.0242	99	40-150
2991-50-6	EtFOSAA	0.0049 U		0.0245	0.0233	95	40-150
24448-09-7	MeFOSE	0.049 U		0.245	0.251	102	40-150
1691-99-2	EtFOSE	0.049 U		0.245	0.241	98	40-150
13252-13-6	HFPO-DA (GenX)	0.020 U		0.098	0.0900	92	40-150
919005-14-4	ADONA	0.020 U		0.0926	0.0856	92	40-150
377-73-1	PFMPA	0.0098 U		0.049	0.0482	98	40-150
863090-89-5	PFMBA	0.0098 U		0.049	0.0504	103	40-150
151772-58-6	NFDHA	0.0098 U		0.049	0.0483	99	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.020 U		0.0917	0.0806	88	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.020 U		0.0926	0.0746	81	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-MS	6Q12899.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198
FC2239-1	6Q12898.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	FC2239-1 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0098 U	0.0436	0.0417	96	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.025 U	0.123	0.104	85	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.12 U	0.613	0.540	88	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.12 U	0.613	0.549	90	40-150

CAS No.	ID Standard Recoveries	MS	FC2239-1	Limits
	13C4-PFBA	101%	108%	20-150%
	13C5-PFPeA	113%	118%	20-150%
	13C5-PFHxA	118%	112%	20-150%
	13C4-PFHpA	112%	117%	20-150%
	13C8-PFOA	105%	102%	20-150%
	13C9-PFNA	101%	121%	20-150%
	13C6-PFDA	114%	112%	20-150%
	13C7-PFUnDA	105%	115%	20-150%
	13C2-PFDoDA	93%	107%	20-150%
	13C2-PFTeDA	77%	88%	20-150%
	13C3-PFBS	110%	109%	20-150%
	13C3-PFHxS	113%	111%	20-150%
	13C8-PFOS	95%	113%	20-150%
	13C8-FOSA	99%	104%	20-150%
	d3-MeFOSA	83%	94%	20-150%
	d5-EtFOSA	83%	88%	20-150%
	d3-MeFOSAA	95%	94%	20-150%
	d5-EtFOSAA	91%	105%	20-150%
	d7-MeFOSE	80%	96%	20-150%
	d9-EtFOSE	82%	96%	20-150%
	13C2-4:2FTS	121%	127%	20-150%
	13C2-6:2FTS	124%	127%	20-150%
	13C2-8:2FTS	119%	116%	20-150%
	13C3-HFPO-DA	124%	123%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-DUP	6Q12907.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198
FC2270-2	6Q12906.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198
FC2270-2 ^a	6Q13141.D	5	02/06/23	MV	01/30/23	OP95216	S6Q201

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	FC2270-2 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.019 U	ND		nc		30
2706-90-3	Perfluoropentanoic acid	0.0096 U	ND		nc		30
307-24-4	Perfluorohexanoic acid	0.0048 U	ND		nc		30
375-85-9	Perfluoroheptanoic acid	0.0048 U	ND		nc		30
335-67-1	Perfluorooctanoic acid	0.0048 U	ND		nc		30
375-95-1	Perfluorononanoic acid	0.0048 U	ND		nc		30
335-76-2	Perfluorodecanoic acid	0.0048 U	ND		nc		30
2058-94-8	Perfluoroundecanoic acid	0.0048 U	ND		nc		30
307-55-1	Perfluorododecanoic acid	0.0048 U	ND		nc		30
72629-94-8	Perfluorotridecanoic acid	0.0048 U	ND		nc		30
376-06-7	Perfluorotetradecanoic acid	0.0048 U	ND		nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0048 U	ND		nc		30
2706-91-4	Perfluoropentanesulfonic acid	0.0048 U	ND		nc		30
355-46-4	Perfluorohexanesulfonic acid	0.0048 U	ND		nc		30
375-92-8	Perfluoroheptanesulfonic acid	0.0048 U	ND		nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0048 U	ND		nc		30
68259-12-1	Perfluorononanesulfonic acid	0.0048 U	ND		nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0048 U	ND		nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0048 U	ND		nc		30
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	ND		nc		30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0064 U	J	0.0061	J	5	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	ND		nc		30
754-91-6	PFOSA	0.0048 U	ND		nc		30
31506-32-8	MeFOSA	0.0048 U	ND		nc		30
4151-50-2	EtFOSA	0.0048 U	ND		nc		30
2355-31-9	MeFOSAA	0.0048 U	ND		nc		30
2991-50-6	EtFOSAA	0.024 U ^b	ND		nc		30
24448-09-7	MeFOSE	0.048 U	ND		nc		30
1691-99-2	EtFOSE	0.048 U	ND		nc		30
13252-13-6	HFPO-DA (GenX)	0.019 U	ND		nc		30
919005-14-4	ADONA	0.019 U	ND		nc		30
377-73-1	PFMPA	0.0096 U	ND		nc		30
863090-89-5	PFMBA	0.0096 U	ND		nc		30
151772-58-6	NFDHA	0.0096 U	ND		nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.019 U	ND		nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.019 U	ND		nc		30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2270
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95216-DUP	6Q12907.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198
FC2270-2	6Q12906.D	1	02/03/23	MV	01/30/23	OP95216	S6Q198
FC2270-2 ^a	6Q13141.D	5	02/06/23	MV	01/30/23	OP95216	S6Q201

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC2270-1, FC2270-2, FC2270-3, FC2270-4

CAS No.	Compound	FC2270-2 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0096 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.024 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.12 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.12 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC2270-2	FC2270-2	Limits
	13C4-PFBA	104%	110%	110%	20-150%
	13C5-PFPeA	108%	117%	112%	20-150%
	13C5-PFHxA	105%	116%	107%	20-150%
	13C4-PFHpA	108%	115%	110%	20-150%
	13C8-PFOA	96%	110%	108%	20-150%
	13C9-PFNA	102%	121%	97%	20-150%
	13C6-PFDA	117%	99%	118%	20-150%
	13C7-PFUnDA	103%	99%	110%	20-150%
	13C2-PFDoDA	100%	88%	85%	20-150%
	13C2-PFTeDA	80%	63%	71%	20-150%
	13C3-PFBS	99%	99%	124%	20-150%
	13C3-PFHxS	105%	109%	131%	20-150%
	13C8-PFOS	109%	108%	67%	20-150%
	13C8-FOSA	127%	108%	51%	20-150%
	d3-MeFOSA	110%	92%	43%	20-150%
	d5-EtFOSA	104%	87%	44%	20-150%
	d3-MeFOSAA	167%* c	136%	62%	20-150%
	d5-EtFOSAA	176%* c	152%* c	60%	20-150%
	d7-MeFOSE	106%	96%	46%	20-150%
	d9-EtFOSE	111%	96%	48%	20-150%
	13C2-4:2FTS	116%	117%	122%	20-150%
	13C2-6:2FTS	96%	100%	126%	20-150%
	13C2-8:2FTS	94%	100%	96%	20-150%
	13C3-HFPO-DA	110%	117%	124%	20-150%

- (a) Dilution required (ID recovery standard failure).
- (b) Result is from Run #2.
- (c) Outside control limits.

* = Outside of Control Limits.