The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC3853

Sampling Date: 03/30/23

Report to:

AECOM, Inc
7595 Technology Way
Denver, CO 80237
katie.abbott@aecom.com; mark.kromis@aecom.com;
watson.tanji@aecom.com; kristin.rutherford@aecom.com
ATTN: Katie Abbott

Total number of pages in report: 32

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

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

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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Sample Summary

AECOM, INC.

Job No: FC3853

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC3853-1	03/30/23	11:15	EMMU	03/31/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2303W4
FC3853-2	03/30/23	13:25	EMMU	03/31/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2303W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC3853

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 4/5/2023 6:14:45 PM

On 03/31/2023, 2 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 2.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC3853 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:** OP96209

Sample(s) FC3853-1MS, FC3853-2DUP were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluoropentanoic acid are outside control limits. Probable cause is due to matrix interference.

RPD(s) for Duplicate for Perfluorohexanoic acid, Perfluorooctanoic acid, Perfluoropentanoic acid are outside control limits for sample OP96209-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: FC3853
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 03/30/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC3853-1	**AF-RHMW02-WGN01LF-2303W4**					
Perfluorohexanoic acid		1.3 J	4.4	0.88	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		6.1 J	18	7.1	ng/l	EPA DRAFT 1633
FC3853-2	**AF-RHMW03-WGN01LF-2303W4**					
Perfluoropentanoic acid		2.6 J	9.3	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		1.2 J	4.7	0.93	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		1.1 J	4.7	0.93	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		10.4 J	19	7.5	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2303W4		
Lab Sample ID:	FC3853-1	**Date Sampled:**	03/30/23
Matrix:	AQ - Ground Water	**Date Received:**	03/31/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q16028.D	1	04/04/23 19:23	MV	04/03/23 13:30	OP96209	S6Q239
Run #2							

	Initial Volume	Final Volume
Run #1	565 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	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.83	ng/l	
307-24-4	Perfluorohexanoic acid	1.3	4.4	0.88	0.44	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	4.4	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	4.4	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	4.4	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.99	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.88 U	4.4	0.88	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	4.4	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	4.4	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	4.4	1.8	0.57	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	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	6.1	18	7.1	3.1	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.6	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	4.4	1.8	0.59	ng/l	
31506-32-8	MeFOSA	1.8 U	4.4	1.8	0.88	ng/l	
4151-50-2	EtFOSA	1.8 U	4.4	1.8	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

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2303W4		
Lab Sample ID:	FC3853-1	**Date Sampled:**	03/30/23
Matrix:	AQ - Ground Water	**Date Received:**	03/31/23
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
PERFLUOROOCTANE 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	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	8.8 U	44	8.8	3.9	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.6	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.5 U	18	3.5	0.88	ng/l	
919005-14-4	ADONA	3.5 U	18	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	8.8	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	8.8	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	8.8	3.5	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	18	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	18	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	8.8	1.8	0.69	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	22	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	110	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	110	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		20-150%
	13C5-PFPeA	71%		20-150%
	13C5-PFHxA	83%		20-150%
	13C4-PFHpA	89%		20-150%
	13C8-PFOA	88%		20-150%
	13C9-PFNA	78%		20-150%
	13C6-PFDA	90%		20-150%
	13C7-PFUnDA	87%		20-150%
	13C2-PFDoDA	78%		20-150%
	13C2-PFTeDA	64%		20-150%
	13C3-PFBS	81%		20-150%
	13C3-PFHxS	77%		20-150%

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2303W4		
Lab Sample ID:	FC3853-1	**Date Sampled:**	03/30/23
Matrix:	AQ - Ground Water	**Date Received:**	03/31/23
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	92%		20-150%
	13C8-FOSA	82%		20-150%
	d3-MeFOSA	75%		20-150%
	d5-EtFOSA	68%		20-150%
	d3-MeFOSAA	91%		20-150%
	d5-EtFOSAA	89%		20-150%
	d7-MeFOSE	68%		20-150%
	d9-EtFOSE	74%		20-150%
	13C2-4:2FTS	81%		20-150%
	13C2-6:2FTS	74%		20-150%
	13C2-8:2FTS	68%		20-150%
	13C3-HFPO-DA	67%		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-2303W4
Lab Sample ID: FC3853-2
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 03/30/23
Date Received: 03/31/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q16030.D	1	04/04/23 19:51	MV	04/03/23 13:30	OP96209	S6Q239
Run #2							

	Initial Volume	Final Volume
Run #1	535 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	19	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	2.6	9.3	1.9	0.88	ng/l	J
307-24-4	Perfluorohexanoic acid	1.2	4.7	0.93	0.47	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.1	4.7	0.93	0.47	ng/l	J
335-67-1	Perfluorooctanoic acid	0.93 U	4.7	0.93	0.47	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	4.7	1.9	0.57	ng/l	
335-76-2	Perfluorodecanoic acid	0.93 U	4.7	0.93	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	4.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	4.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	4.7	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	0.93 U	4.7	0.93	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.93 U	4.7	0.93	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.7	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	4.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	0.93 U	4.7	0.93	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	4.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	4.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	4.7	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.7	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	10.4	19	7.5	3.2	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.8	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	4.7	1.9	0.63	ng/l	
31506-32-8	MeFOSA	1.9 U	4.7	1.9	0.93	ng/l	
4151-50-2	EtFOSA	1.9 U	4.7	1.9	0.93	ng/l	

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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-2303W4		
Lab Sample ID:	FC3853-2	**Date Sampled:**	03/30/23
Matrix:	AQ - Ground Water	**Date Received:**	03/31/23
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
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.7 U	4.7	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.7	3.7	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	9.3 U	47	9.3	4.1	ng/l	
1691-99-2	EtFOSE	19 U	47	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	3.7 U	19	3.7	0.93	ng/l	
919005-14-4	ADONA	3.7 U	19	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	9.3	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	9.3	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	9.3	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	19	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	19	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	9.3	1.9	0.73	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	23	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	120	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	120	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		20-150%
	13C5-PFPeA	95%		20-150%
	13C5-PFHxA	99%		20-150%
	13C4-PFHpA	100%		20-150%
	13C8-PFOA	100%		20-150%
	13C9-PFNA	97%		20-150%
	13C6-PFDA	100%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	89%		20-150%
	13C2-PFTeDA	76%		20-150%
	13C3-PFBS	96%		20-150%
	13C3-PFHxS	92%		20-150%

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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-2303W4		
Lab Sample ID:	FC3853-2	**Date Sampled:**	03/30/23
Matrix:	AQ - Ground Water	**Date Received:**	03/31/23
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	88%		20-150%
	d3-MeFOSA	84%		20-150%
	d5-EtFOSA	78%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	109%		20-150%
	d7-MeFOSE	77%		20-150%
	d9-EtFOSE	84%		20-150%
	13C2-4:2FTS	85%		20-150%
	13C2-6:2FTS	82%		20-150%
	13C2-8:2FTS	89%		20-150%
	13C3-HFPO-DA	87%		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

FC 3853

SGS - ORLANDO JOB # :

COC #: 2303W4AFSG01

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

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information	Project Information
Company Name: AECOM	**Project Name:** N6274223F0104 RH Fire Suppression System
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	
Phone #: 303-796-4624 / 808-954-4512	**Fax #**
Sampler(s) Name(s) (Printed) **Sampler 1:** Max Ullea **Sampler 2:** Eli Martin	**Client Purchase Order #**

Analytical Information: PFAS EPA Draft 1633

Matrix Codes: 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

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW02-WGN01LF-2303W4	3/30/23	1115	BM, MU	GW	3		x								x	

3/30/23

INITIAL ASSESSMENT

LABEL VERIFICATION

Turnaround Time (Business days)	Data Deliverable Information	Comments / Remarks
10 Day (Business) Approved By: / Date:	[ ] COMMERCIAL "A" (RESULTS ONLY)	EDMS upload database: JBPHE
7 Day	[ ] COMMERCIAL "B" (RESULTS PLUS QC)	EDMS Coverage: AFFF Assessment Sampling GW
[5 Day]	[ ] REDT1 (EPA LEVEL 3)	United AWB 016-27706475
3 Day *RUSH*	[x] FULLT1 (EPA LEVEL 4)	
2 Day *RUSH*	[x] EDD'S	
1 Day *RUSH*		
Other		
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	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Andy Young / AECOM	3/30/23 1500	2	3	3/30/23 1540	4 SGS 1600 3/30/23
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.0 IR#1

http://www.sgs.com/en/terms-and-conditions

PFAS_COCs_ALL.xls Rev 031318

FC3853: Chain of Custody
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FC3853 COC #: 2303W4AFSG02

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

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
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

Sampler(s) Name(s) (Printed)
Sampler 1: Eli Martin Sampler 2: Max Wilcox

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 60697810
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

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

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
2	AF-RHMW03-WGN01LF-2303W4	3/30/23	1325	GM,MW	GW	3		X								X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
United AWB 016-27706475

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 Andy Young / AECOM	3/30/23 1500	2	3	3/30/23 1545	4 SGS 0905 3/31/23 1600
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.0 IR#1

http://www.sgs.com/en/terms-and-conditions

PFAS_COCs_ALL.xls Rev 031318

SGS Sample Receipt Summary

Job Number: FC3853 **Client:** AECOM **Project:** : N6274223F0104 RH Fire Suppression System

Date / Time Received: 3/31/2023 4:00:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-27706475

Therm ID: IR 1; **Therm CF:** -0.1; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0);

Cooler Temps (Corrected) °C: Cooler 1: (2.9);

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 25BDH07 Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: TORYW Date: 3/31/2023 4:00:00 PM Reviewer: CD Date: 4/3/2023

FC3853: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FC3853
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 03/30/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits

No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC3853

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q239-IBLK	6Q16014.D	1	04/04/23	MV	n/a	n/a	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Instrument Blank

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q239-IBLK	6Q16014.D	1	04/04/23	MV	n/a	n/a	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	100%	20-150%
	13C5-PFHxA	104%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	105%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	99%	20-150%
	13C7-PFUnDA	102%	20-150%
	13C2-PFDoDA	93%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	105%	20-150%
	13C3-PFHxS	104%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	102%	20-150%
	d3-MeFOSA	97%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	97%	20-150%
	d7-MeFOSE	107%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	117%	20-150%
	13C2-6:2FTS	112%	20-150%
	13C2-8:2FTS	104%	20-150%
	13C3-HFPO-DA	96%	20-150%

Continuing Calibration Blank

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q239-ICCB	6Q16024.D	1	04/04/23	MV	n/a	n/a	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0020	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0020	0.0010	ug/l	
31506-32-8	MeFOSA	ND	0.0020	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0020	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0020	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.020	0.010	ug/l	
1691-99-2	EtFOSE	ND	0.020	0.010	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
377-73-1	PFMPA	ND	0.0040	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0040	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0040	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

Continuing Calibration Blank

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q239-ICCB	6Q16024.D	1	04/04/23	MV	n/a	n/a	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0040	0.0010	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.010	0.0050	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.050	0.010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	102%	20-150%
	13C5-PFHxA	104%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	92%	20-150%
	13C9-PFNA	93%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	98%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	99%	20-150%
	13C8-PFOS	94%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	96%	20-150%
	d5-EtFOSA	90%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	94%	20-150%
	d9-EtFOSE	96%	20-150%
	13C2-4:2FTS	107%	20-150%
	13C2-6:2FTS	111%	20-150%
	13C2-8:2FTS	111%	20-150%
	13C3-HFPO-DA	99%	20-150%

Method Blank Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-MB	6Q16027.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

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	
757124-72-4	4:2 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	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.020	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.020	0.0018	ug/l	

Method Blank Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-MB	6Q16027.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

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	
914637-49-3	5:3 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	108%	20-150%
	13C5-PFPeA	107%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	106%	20-150%
	13C6-PFDA	98%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	89%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	107%	20-150%
	13C8-PFOS	99%	20-150%
	13C8-FOSA	95%	20-150%
	d3-MeFOSA	89%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	110%	20-150%
	d7-MeFOSE	91%	20-150%
	d9-EtFOSE	99%	20-150%
	13C2-4:2FTS	117%	20-150%
	13C2-6:2FTS	127%	20-150%
	13C2-8:2FTS	117%	20-150%
	13C3-HFPO-DA	102%	20-150%

Blank Spike Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-LLBS	6Q16026.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0388	97	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0195	98	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0115	115	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0102	102	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0101	101	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0083	83	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0095	95	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0085	85	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0106	106	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0102	102	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0096	96	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0087	98	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0093	99	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0088	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0097	102	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0096	103	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0094	98	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0106	110	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0093	96	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0352	94	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0380	100	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0357	93	40-150
754-91-6	PFOSA	0.01	0.0099	99	40-150
31506-32-8	MeFOSA	0.01	0.0103	103	40-150
4151-50-2	EtFOSA	0.01	0.0096	96	40-150
2355-31-9	MeFOSAA	0.01	0.0101	101	40-150
2991-50-6	EtFOSAA	0.01	0.0098	98	40-150
24448-09-7	MeFOSE	0.1	0.105	105	40-150
1691-99-2	EtFOSE	0.1	0.0916	92	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0407	102	40-150
919005-14-4	ADONA	0.0378	0.0376	99	40-150
377-73-1	PFMPA	0.02	0.0197	99	40-150
863090-89-5	PFMBA	0.02	0.0197	99	40-150
151772-58-6	NFDHA	0.02	0.0207	104	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0364	97	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0370	98	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-LLBS	6Q16026.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0191	107	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0456	91	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.240	96	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.256	102	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	108%	20-150%
	13C5-PFPeA	109%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	110%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	112%	20-150%
	13C6-PFDA	121%	20-150%
	13C7-PFUnDA	126%	20-150%
	13C2-PFDoDA	106%	20-150%
	13C2-PFTeDA	105%	20-150%
	13C3-PFBS	103%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	90%	20-150%
	d3-MeFOSA	82%	20-150%
	d5-EtFOSA	87%	20-150%
	d3-MeFOSAA	104%	20-150%
	d5-EtFOSAA	108%	20-150%
	d7-MeFOSE	78%	20-150%
	d9-EtFOSE	89%	20-150%
	13C2-4:2FTS	120%	20-150%
	13C2-6:2FTS	120%	20-150%
	13C2-8:2FTS	124%	20-150%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-BS	6Q16025.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0939	94	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0479	96	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0226	90	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0255	102	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0231	92	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0251	100	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0233	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0243	97	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0247	99	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0250	100	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0246	98	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0218	98	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0213	91	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0211	92	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0217	91	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0230	99	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0228	95	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0225	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0211	87	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0881	94	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0962	101	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.103	107	40-150
754-91-6	PFOSA	0.025	0.0241	96	40-150
31506-32-8	MeFOSA	0.025	0.0233	93	40-150
4151-50-2	EtFOSA	0.025	0.0254	102	40-150
2355-31-9	MeFOSAA	0.025	0.0245	98	40-150
2991-50-6	EtFOSAA	0.025	0.0235	94	40-150
24448-09-7	MeFOSE	0.25	0.237	95	40-150
1691-99-2	EtFOSE	0.25	0.248	99	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0965	97	40-150
919005-14-4	ADONA	0.0945	0.0974	103	40-150
377-73-1	PFMPA	0.05	0.0391	78	40-150
863090-89-5	PFMBA	0.05	0.0483	97	40-150
151772-58-6	NFDHA	0.05	0.0488	98	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.0913	98	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.0914	97	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-BS	6Q16025.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0420	94	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0936	75	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.545	87	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.558	89	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	55%	20-150%
	13C5-PFPeA	115%	20-150%
	13C5-PFHxA	120%	20-150%
	13C4-PFHpA	113%	20-150%
	13C8-PFOA	121%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	121%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	111%	20-150%
	13C2-PFTeDA	106%	20-150%
	13C3-PFBS	107%	20-150%
	13C3-PFHxS	108%	20-150%
	13C8-PFOS	108%	20-150%
	13C8-FOSA	97%	20-150%
	d3-MeFOSA	95%	20-150%
	d5-EtFOSA	88%	20-150%
	d3-MeFOSAA	110%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	86%	20-150%
	13C2-4:2FTS	122%	20-150%
	13C2-6:2FTS	123%	20-150%
	13C2-8:2FTS	108%	20-150%
	13C3-HFPO-DA	111%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-MS	6Q16029.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239
FC3853-1	6Q16028.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	FC3853-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018	U	0.0885	0.122	138	40-150
2706-90-3	Perfluoropentanoic acid	0.0088	U	0.0442	0.0862	195*	40-150
307-24-4	Perfluorohexanoic acid	0.0013	J	0.0221	0.0247	106	40-150
375-85-9	Perfluoroheptanoic acid	0.0044	U	0.0221	0.0240	108	40-150
335-67-1	Perfluorooctanoic acid	0.0044	U	0.0221	0.0231	104	40-150
375-95-1	Perfluorononanoic acid	0.0044	U	0.0221	0.0189	85	40-150
335-76-2	Perfluorodecanoic acid	0.0044	U	0.0221	0.0233	105	40-150
2058-94-8	Perfluoroundecanoic acid	0.0044	U	0.0221	0.0235	106	40-150
307-55-1	Perfluorododecanoic acid	0.0044	U	0.0221	0.0250	113	40-150
72629-94-8	Perfluorotridecanoic acid	0.0044	U	0.0221	0.0236	107	40-150
376-06-7	Perfluorotetradecanoic acid	0.0044	U	0.0221	0.0222	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0044	U	0.0196	0.0196	100	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0208	0.0212	102	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0044	U	0.0202	0.0206	102	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0044	U	0.0211	0.0242	115	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0044	U	0.0205	0.0230	112	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0044	U	0.0213	0.0215	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0044	U	0.0213	0.0200	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.0215	0.0158	74	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.083	0.0958	115	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0061	J	0.0841	0.0862	95	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.085	0.0942	111	40-150
754-91-6	PFOSA	0.0044	U	0.0221	0.0221	100	40-150
31506-32-8	MeFOSA	0.0044	U	0.0221	0.0234	106	40-150
4151-50-2	EtFOSA	0.0044	U	0.0221	0.0262	118	40-150
2355-31-9	MeFOSAA	0.0044	U	0.0221	0.0223	101	40-150
2991-50-6	EtFOSAA	0.0044	U	0.0221	0.0255	115	40-150
24448-09-7	MeFOSE	0.044	U	0.221	0.230	104	40-150
1691-99-2	EtFOSE	0.044	U	0.221	0.230	104	40-150
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0885	0.0934	106	40-150
919005-14-4	ADONA	0.018	U	0.0836	0.108	129	40-150
377-73-1	PFMPA	0.0088	U	0.0442	0.0373	84	40-150
863090-89-5	PFMBA	0.0088	U	0.0442	0.0516	117	40-150
151772-58-6	NFDHA	0.0088	U	0.0442	0.0415	94	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.0827	0.103	124	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0836	0.0945	113	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-MS	6Q16029.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239
FC3853-1	6Q16028.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	FC3853-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0088	U	0.0394	0.0406	103	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	0.111	0.107	97	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.553	0.658	119	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.553	0.688	124	40-150

CAS No.	ID Standard Recoveries	MS	FC3853-1	Limits
	13C4-PFBA	78%	70%	20-150%
	13C5-PFPeA	90%	71%	20-150%
	13C5-PFHxA	101%	83%	20-150%
	13C4-PFHpA	106%	89%	20-150%
	13C8-PFOA	95%	88%	20-150%
	13C9-PFNA	105%	78%	20-150%
	13C6-PFDA	101%	90%	20-150%
	13C7-PFUnDA	95%	87%	20-150%
	13C2-PFDoDA	82%	78%	20-150%
	13C2-PFTeDA	72%	64%	20-150%
	13C3-PFBS	98%	81%	20-150%
	13C3-PFHxS	98%	77%	20-150%
	13C8-PFOS	93%	92%	20-150%
	13C8-FOSA	88%	82%	20-150%
	d3-MeFOSA	77%	75%	20-150%
	d5-EtFOSA	69%	68%	20-150%
	d3-MeFOSAA	105%	91%	20-150%
	d5-EtFOSAA	96%	89%	20-150%
	d7-MeFOSE	71%	68%	20-150%
	d9-EtFOSE	75%	74%	20-150%
	13C2-4:2FTS	96%	81%	20-150%
	13C2-6:2FTS	106%	74%	20-150%
	13C2-8:2FTS	80%	68%	20-150%
	13C3-HFPO-DA	85%	67%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-DUP	6Q16031.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239
FC3853-2	6Q16030.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	FC3853-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.019 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0026	J	0.0017	J	42*	30
307-24-4	Perfluorohexanoic acid	0.0012	J	ND		200*	30
375-85-9	Perfluoroheptanoic acid	0.0011	J	0.0010	J	10	30
335-67-1	Perfluorooctanoic acid	0.0047 U		0.00065	J	200*	30
375-95-1	Perfluorononanoic acid	0.0047 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0047 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0047 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0047 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0047 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0047 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0047 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0047 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0047 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0047 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0047 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0047 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0047 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0047 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0104	J	0.0096	J	8	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
754-91-6	PFOSA	0.0047 U		ND		nc	30
31506-32-8	MeFOSA	0.0047 U		ND		nc	30
4151-50-2	EtFOSA	0.0047 U		ND		nc	30
2355-31-9	MeFOSAA	0.0047 U		ND		nc	30
2991-50-6	EtFOSAA	0.0047 U		ND		nc	30
24448-09-7	MeFOSE	0.047 U		ND		nc	30
1691-99-2	EtFOSE	0.047 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	0.0093 U		ND		nc	30
863090-89-5	PFMBA	0.0093 U		ND		nc	30
151772-58-6	NFDHA	0.0093 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.019 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.019 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC3853
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96209-DUP	6Q16031.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239
FC3853-2	6Q16030.D	1	04/04/23	MV	04/03/23	OP96209	S6Q239

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC3853-1, FC3853-2

CAS No.	Compound	FC3853-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0093	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.023	U	ND		nc	30
914637-49-3	5:3 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	FC3853-2	Limits
	13C4-PFBA	92%	92%	20-150%
	13C5-PFPeA	101%	95%	20-150%
	13C5-PFHxA	102%	99%	20-150%
	13C4-PFHpA	105%	100%	20-150%
	13C8-PFOA	99%	100%	20-150%
	13C9-PFNA	104%	97%	20-150%
	13C6-PFDA	103%	100%	20-150%
	13C7-PFUnDA	94%	100%	20-150%
	13C2-PFDoDA	83%	89%	20-150%
	13C2-PFTeDA	70%	76%	20-150%
	13C3-PFBS	99%	96%	20-150%
	13C3-PFHxS	95%	92%	20-150%
	13C8-PFOS	85%	98%	20-150%
	13C8-FOSA	82%	88%	20-150%
	d3-MeFOSA	68%	84%	20-150%
	d5-EtFOSA	66%	78%	20-150%
	d3-MeFOSAA	96%	113%	20-150%
	d5-EtFOSAA	100%	109%	20-150%
	d7-MeFOSE	64%	77%	20-150%
	d9-EtFOSE	67%	84%	20-150%
	13C2-4:2FTS	88%	85%	20-150%
	13C2-6:2FTS	101%	82%	20-150%
	13C2-8:2FTS	91%	89%	20-150%
	13C3-HFPO-DA	94%	87%	20-150%

* = Outside of Control Limits.