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: FC2078

Sampling Date: 01/19/23

Report to:

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

Total number of pages in report: 30

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

Sections: 1 2 3 4 5 6

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Sample Summary

AECOM, INC.

Job No: FC2078

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC2078-1	01/19/23	10:05	NT	01/20/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2301W3
FC2078-2	01/19/23	11:11	NT	01/20/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2301W3

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC2078

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 1/31/2023 11:38:17 AM

On 01/20/2023, 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 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2078 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:** OP95096

Sample(s) FC1815-11MS, FC1815-11MSD were used as the QC samples indicated.

Sample(s) FC2078-1 have surrogates outside control limits.

FC2078-1: Confirmation run.

OP95096-BS for 13C2-4:2FTS: Outside control limits.

OP95096-LLBS for 13C2-4:2FTS: Outside control limits.

OP95096-MB for 13C2-4:2FTS: Outside control limits.

FC2078-1 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits.

FC2078-1 for 13C2-4:2FTS: 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: FC2078
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/19/23

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC2078-1	**AF-RHMW04-WGN01LF-2301W3**					
No hits reported in this sample.						
FC2078-2	**AF-RHMW06-WGN01LF-2301W3**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: AF-RHMW04-WGN01LF-2301W3
Lab Sample ID: FC2078-1
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 01/19/23
Date Received: 01/20/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q39712.D	1	01/25/23 18:33	NG	01/23/23 11:00	OP95096	S4Q571
Run #2 [a]	4Q39797.D	10	01/26/23 15:44	NG	01/23/23 11:00	OP95096	S4Q572

	Initial Volume	Final Volume
Run #1	565 ml	5.0 ml
Run #2	565 ml	5.0 ml

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	0.88 U	4.4	0.88	0.44	ng/l	
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 [b]	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
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-RHMW04-WGN01LF-2301W3		
Lab Sample ID:	FC2078-1	**Date Sampled:**	01/19/23
Matrix:	AQ - Ground Water	**Date Received:**	01/20/23
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	121%	112%	20-150%
	13C5-PFPeA	122%	120%	20-150%
	13C5-PFHxA	126%	120%	20-150%
	13C4-PFHpA	116%	112%	20-150%
	13C8-PFOA	114%	114%	20-150%
	13C9-PFNA	113%	110%	20-150%
	13C6-PFDA	119%	102%	20-150%
	13C7-PFUnDA	123%	94%	20-150%
	13C2-PFDoDA	113%	103%	20-150%
	13C2-PFTeDA	112%	98%	20-150%
	13C3-PFBS	124%	88%	20-150%
	13C3-PFHxS	122%	107%	20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2301W3		
Lab Sample ID:	FC2078-1	**Date Sampled:**	01/19/23
Matrix:	AQ - Ground Water	**Date Received:**	01/20/23
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%	102%	20-150%
	13C8-FOSA	117%	113%	20-150%
	d3-MeFOSA	97%	108%	20-150%
	d5-EtFOSA	98%	114%	20-150%
	d3-MeFOSAA	115%	133%	20-150%
	d5-EtFOSAA	107%	112%	20-150%
	d7-MeFOSE	113%	114%	20-150%
	d9-EtFOSE	107%	111%	20-150%
	13C2-4:2FTS	158% [c]	189% [c]	20-150%
	13C2-6:2FTS	149%	143%	20-150%
	13C2-8:2FTS	127%	116%	20-150%
	13C3-HFPO-DA	122%	126%	20-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits.
(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-RHMW06-WGN01LF-2301W3		
Lab Sample ID:	FC2078-2	**Date Sampled:**	01/19/23
Matrix:	AQ - Ground Water	**Date Received:**	01/20/23
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	4Q39713.D	1	01/25/23 18:47	NG	01/23/23 11:00	OP95096	S4Q571
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	0.88 U	4.4	0.88	0.44	ng/l	
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	7.1 U	18	7.1	3.1	ng/l	
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	

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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-RHMW06-WGN01LF-2301W3		
Lab Sample ID:	FC2078-2	**Date Sampled:**	01/19/23
Matrix:	AQ - Ground Water	**Date Received:**	01/20/23
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	108%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	113%		20-150%
	13C4-PFHpA	102%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	97%		20-150%
	13C2-PFDoDA	90%		20-150%
	13C2-PFTeDA	97%		20-150%
	13C3-PFBS	107%		20-150%
	13C3-PFHxS	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-RHMW06-WGN01LF-2301W3		
Lab Sample ID:	FC2078-2	**Date Sampled:**	01/19/23
Matrix:	AQ - Ground Water	**Date Received:**	01/20/23
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	100%		20-150%
	13C8-FOSA	108%		20-150%
	d3-MeFOSA	88%		20-150%
	d5-EtFOSA	84%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	105%		20-150%
	d7-MeFOSE	98%		20-150%
	d9-EtFOSE	97%		20-150%
	13C2-4:2FTS	141%		20-150%
	13C2-6:2FTS	123%		20-150%
	13C2-8:2FTS	117%		20-150%
	13C3-HFPO-DA	111%		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

FC2078
SGS - ORLANDO JOB # :

COC #: 2301W3AFSG08
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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: NOAH TURNER Sampler 2:

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	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	MeOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW04-WGN01LF-2301W3	01-19-23	1005	(W/TN/MT	GW	3		X								X	

NJT 01-19-2023

INITIAL ASSESSMENT

LABEL VERIFICATION

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
016-73334026

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	/AECOM	01-19-23 1250	2 AECOM	3 AECOM	01/19/23 1455	4
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):

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

PFAS_COCs_ALL.xls Rev 031318

FC2078: Chain of Custody
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FC2078

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

COC #: 2301W3AFSG09
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SGS - ORLANDO JOB # :

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: NOAH TURNER Sampler 2:

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 60697810
Fax #
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	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
2	AF-RHMW06-WGN01LF-2301W3	01-19-23	1111	CW/TH/NT	GW	3		X								X	

NT 01-19-2023

INITIAL ASSESSMENT

LABEL VERIFICATION

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
016-73334026

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	AECOM	01-19-23 1250	2 AECOM	3 AECOM	01/19/23 1455	4
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):

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

PFAS_COCs_ALL.xls Rev 031318

FC2078: Chain of Custody
Page 2 of 3

SGS Sample Receipt Summary

Job Number: FC2078 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 1/20/2023 4:00:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-73334026

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

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (3.0);

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

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

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

Misc. Information

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

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

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS Date: 1/20/2023 4:00:00 PM Reviewer: CD Date: 1/23/2023

FC2078: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2078
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 01/19/23

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 FC2078

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: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-IBLK	4Q39699.D	1	01/25/23	NG	n/a	n/a	S4Q571

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

FC2078-1, FC2078-2

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	

Instrument Blank

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-IBLK	4Q39699.D	1	01/25/23	NG	n/a	n/a	S4Q571

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

FC2078-1, FC2078-2

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	101%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	105%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	95%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	107%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	105%	20-150%
	13C3-PFBS	96%	20-150%
	13C3-PFHxS	95%	20-150%
	13C8-PFOS	94%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	94%	20-150%
	d5-EtFOSA	100%	20-150%
	d3-MeFOSAA	106%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	102%	20-150%
	13C2-4:2FTS	125%	20-150%
	13C2-6:2FTS	106%	20-150%
	13C2-8:2FTS	108%	20-150%
	13C3-HFPO-DA	100%	20-150%

Method Blank Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MB	4Q39711.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

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

FC2078-1, FC2078-2

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	0.00074	0.0050	0.00054	ug/l	J
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: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MB	4Q39711.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

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

FC2078-1, FC2078-2

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	118%	20-150%
	13C5-PFPeA	119%	20-150%
	13C5-PFHxA	118%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	111%	20-150%
	13C9-PFNA	114%	20-150%
	13C6-PFDA	121%	20-150%
	13C7-PFUnDA	115%	20-150%
	13C2-PFDoDA	98%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	115%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	105%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSA	85%	20-150%
	d5-EtFOSA	83%	20-150%
	d3-MeFOSAA	118%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	95%	20-150%
	d9-EtFOSE	95%	20-150%
	13C2-4:2FTS	158%* [a]	20-150%
	13C2-6:2FTS	139%	20-150%
	13C2-8:2FTS	121%	20-150%
	13C3-HFPO-DA	121%	20-150%

(a) Outside control limits.

Continuing Calibration Blank

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-ICCB	4Q39752.D	1	01/26/23	NG	n/a	n/a	S4Q571

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

OP95096-MS, OP95096-MSD

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	

Continuing Calibration Blank

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q571-ICCB	4Q39752.D	1	01/26/23	NG	n/a	n/a	S4Q571

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

OP95096-MS, OP95096-MSD

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	98%	20-150%
	13C5-PFPeA	100%	20-150%
	13C5-PFHxA	102%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	95%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	112%	20-150%
	13C2-PFDoDA	114%	20-150%
	13C2-PFTeDA	124%	20-150%
	13C3-PFBS	109%	20-150%
	13C3-PFHxS	105%	20-150%
	13C8-PFOS	104%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	101%	20-150%
	d5-EtFOSA	101%	20-150%
	d3-MeFOSAA	123%	20-150%
	d5-EtFOSAA	115%	20-150%
	d7-MeFOSE	100%	20-150%
	d9-EtFOSE	106%	20-150%
	13C2-4:2FTS	136%	20-150%
	13C2-6:2FTS	123%	20-150%
	13C2-8:2FTS	125%	20-150%
	13C3-HFPO-DA	101%	20-150%

Blank Spike Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-LLBS	4Q39710.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

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

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0327	82	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0177	89	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0090	90	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0086	86	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0088	88	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0089	89	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0082	82	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0085	85	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0085	85	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0086	86	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0085	85	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0080	90	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0078	83	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0079	86	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0086	90	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0078	84	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0081	84	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0075	78	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0074	76	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0308	82	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0325	86	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0328	85	40-150
754-91-6	PFOSA	0.01	0.0089	89	40-150
31506-32-8	MeFOSA	0.01	0.0082	82	40-150
4151-50-2	EtFOSA	0.01	0.0075	75	40-150
2355-31-9	MeFOSAA	0.01	0.0082	82	40-150
2991-50-6	EtFOSAA	0.01	0.0082	82	40-150
24448-09-7	MeFOSE	0.1	0.0894	89	40-150
1691-99-2	EtFOSE	0.1	0.0913	91	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0326	82	40-150
919005-14-4	ADONA	0.0378	0.0336	89	40-150
377-73-1	PFMPA	0.02	0.0174	87	40-150
863090-89-5	PFMBA	0.02	0.0176	88	40-150
151772-58-6	NFDHA	0.02	0.0156	78	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0310	83	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0320	85	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-LLBS	4Q39710.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

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

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0157	88	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0438	88	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.217	87	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.211	84	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	119%	20-150%
	13C5-PFPeA	118%	20-150%
	13C5-PFHxA	118%	20-150%
	13C4-PFHpA	109%	20-150%
	13C8-PFOA	113%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	119%	20-150%
	13C7-PFUnDA	120%	20-150%
	13C2-PFDoDA	112%	20-150%
	13C2-PFTeDA	102%	20-150%
	13C3-PFBS	110%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	111%	20-150%
	13C8-FOSA	109%	20-150%
	d3-MeFOSA	95%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	112%	20-150%
	d7-MeFOSE	104%	20-150%
	d9-EtFOSE	101%	20-150%
	13C2-4:2FTS	166%* [a]	20-150%
	13C2-6:2FTS	131%	20-150%
	13C2-8:2FTS	122%	20-150%
	13C3-HFPO-DA	119%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-BS	4Q39709.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

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

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0936	94	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0516	103	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0260	104	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0263	105	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0265	106	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0243	97	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0263	105	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0235	94	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0263	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0266	106	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0263	105	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0227	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0209	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0216	95	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0241	101	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0242	104	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0244	101	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0243	101	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0237	98	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0906	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.106	112	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0986	103	40-150
754-91-6	PFOSA	0.025	0.0244	98	40-150
31506-32-8	MeFOSA	0.025	0.0223	89	40-150
4151-50-2	EtFOSA	0.025	0.0227	91	40-150
2355-31-9	MeFOSAA	0.025	0.0251	100	40-150
2991-50-6	EtFOSAA	0.025	0.0229	92	40-150
24448-09-7	MeFOSE	0.25	0.256	102	40-150
1691-99-2	EtFOSE	0.25	0.255	102	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.0972	97	40-150
919005-14-4	ADONA	0.0945	0.0962	102	40-150
377-73-1	PFMPA	0.05	0.0493	99	40-150
863090-89-5	PFMBA	0.05	0.0518	104	40-150
151772-58-6	NFDHA	0.05	0.0538	108	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.0916	98	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.0951	101	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-BS	4Q39709.D	1	01/25/23	NG	01/23/23	OP95096	S4Q571

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

FC2078-1, FC2078-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0465	104	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.125	100	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.627	100	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.632	101	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	67%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	111%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	113%	20-150%
	13C6-PFDA	114%	20-150%
	13C7-PFUnDA	123%	20-150%
	13C2-PFDoDA	110%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	113%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	110%	20-150%
	d3-MeFOSA	100%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	117%	20-150%
	d7-MeFOSE	101%	20-150%
	d9-EtFOSE	100%	20-150%
	13C2-4:2FTS	152%* [a]	20-150%
	13C2-6:2FTS	117%	20-150%
	13C2-8:2FTS	117%	20-150%
	13C3-HFPO-DA	113%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MS	4Q39761.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
OP95096-MSD	4Q39762.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11	4Q39760.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11 [a]	4Q39824.D	10	01/26/23	NG	01/23/23	OP95096	S4Q572

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

FC2078-1, FC2078-2

CAS No.	Compound	FC1815-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0167	J	0.0885	0.102	96	0.0885	0.104	99	2	40-150/30
2706-90-3	Perfluoropentanoic acid	0.0016	J	0.0442	0.0479	105	0.0442	0.0478	104	0	40-150/30
307-24-4	Perfluorohexanoic acid	0.0044	U	0.0221	0.0230	104	0.0221	0.0223	101	3	40-150/30
375-85-9	Perfluoroheptanoic acid	0.0044	U	0.0221	0.0225	102	0.0221	0.0221	100	2	40-150/30
335-67-1	Perfluorooctanoic acid	0.0044	U	0.0221	0.0223	101	0.0221	0.0227	103	2	40-150/30
375-95-1	Perfluorononanoic acid	0.0044	U	0.0221	0.0213	96	0.0221	0.0216	98	1	40-150/30
335-76-2	Perfluorodecanoic acid	0.0044	U	0.0221	0.0212	96	0.0221	0.0219	99	3	40-150/30
2058-94-8	Perfluoroundecanoic acid	0.0044	U	0.0221	0.0238	108	0.0221	0.0226	102	5	40-150/30
307-55-1	Perfluorododecanoic acid	0.0044	U	0.0221	0.0235	106	0.0221	0.0214	97	9	40-150/30
72629-94-8	Perfluorotridecanoic acid	0.0044	U	0.0221	0.0224	101	0.0221	0.0225	102	0	40-150/30
376-06-7	Perfluorotetradecanoic acid	0.0044	U	0.0221	0.0220	99	0.0221	0.0216	98	2	40-150/30
375-73-5	Perfluorobutanesulfonic acid	0.0044	U	0.0196	0.0189	96	0.0196	0.0200	102	6	40-150/30
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0208	0.0194	93	0.0208	0.0201	97	4	40-150/30
355-46-4	Perfluorohexanesulfonic acid	0.0044	U	0.0202	0.0184	91	0.0202	0.0208	103	12	40-150/30
375-92-8	Perfluoroheptanesulfonic acid	0.0044	U	0.0211	0.0205	97	0.0211	0.0206	98	0	40-150/30
1763-23-1	Perfluorooctanesulfonic acid	0.0044	U	0.0205	0.0192	94	0.0205	0.0208	101	8	40-150/30
68259-12-1	Perfluorononanesulfonic acid	0.0044	U	0.0213	0.0189	89	0.0213	0.0201	94	6	40-150/30
335-77-3	Perfluorodecanesulfonic acid	0.0044	U	0.0213	0.0215	101	0.0213	0.0203	95	6	40-150/30
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.0215	0.0201	94	0.0215	0.0214	100	6	40-150/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.083	0.0771	93	0.083	0.0838	101	8	40-150/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0841	0.0950	113	0.0841	0.0968	115	2	40-150/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.085	0.0942	111	0.085	0.0920	108	2	40-150/30
754-91-6	PFOSA	0.0044	U	0.0221	0.0221	100	0.0221	0.0228	103	3	40-150/30
31506-32-8	MeFOSA	0.0044	U	0.0221	0.0203	92	0.0221	0.0199	90	2	40-150/30
4151-50-2	EtFOSA	0.0044	U	0.0221	0.0196	89	0.0221	0.0199	90	2	40-150/30
2355-31-9	MeFOSAA	0.0044	U	0.0221	0.0238	108	0.0221	0.0253	114	6	40-150/30
2991-50-6	EtFOSAA	0.0044	U	0.0221	0.0229	104	0.0221	0.0208	94	10	40-150/30
24448-09-7	MeFOSE	0.044	U	0.221	0.241	109	0.221	0.228	103	6	40-150/30
1691-99-2	EtFOSE	0.044	U	0.221	0.227	103	0.221	0.224	101	1	40-150/30
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0885	0.0888	100	0.0885	0.0893	101	1	40-150/30
919005-14-4	ADONA	0.018	U	0.0836	0.0866	104	0.0836	0.0850	102	2	40-150/30
377-73-1	PFMPA	0.0088	U	0.0442	0.0419	95	0.0442	0.0425	96	1	40-150/30
863090-89-5	PFMBA	0.0088	U	0.0442	0.0448	101	0.0442	0.0438	99	2	40-150/30
151772-58-6	NFDHA	0.0088	U	0.0442	0.0448	101	0.0442	0.0427	97	5	40-150/30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.0827	0.0738	89	0.0827	0.0751	91	2	40-150/30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0836	0.0878	105	0.0836	0.0845	101	4	40-150/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC2078
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95096-MS	4Q39761.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
OP95096-MSD	4Q39762.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11	4Q39760.D	1	01/26/23	NG	01/23/23	OP95096	S4Q571
FC1815-11 [a]	4Q39824.D	10	01/26/23	NG	01/23/23	OP95096	S4Q572

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

FC2078-1, FC2078-2

CAS No.	Compound	FC1815-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
113507-82-7	PFEESA	0.0088	U	0.0394	0.0404	103	0.0394	0.0399	101	1	40-150/30
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	0.111	0.106	96	0.111	0.106	96	0	40-150/30
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.553	0.539	97	0.553	0.530	96	2	40-150/30
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.553	0.588	106	0.553	0.525	95	11	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC1815-11	FC1815-11	Limits
	13C4-PFBA	66%	67%	76%	75%	20-150%
	13C5-PFPeA	113%	111%	115%	106%	20-150%
	13C5-PFHxA	112%	112%	117%	116%	20-150%
	13C4-PFHpA	117%	113%	117%	110%	20-150%
	13C8-PFOA	109%	104%	105%	117%	20-150%
	13C9-PFNA	109%	107%	114%	105%	20-150%
	13C6-PFDA	116%	106%	110%	113%	20-150%
	13C7-PFUnDA	104%	106%	104%	109%	20-150%
	13C2-PFDoDA	112%	111%	97%	105%	20-150%
	13C2-PFTeDA	117%	111%	107%	115%	20-150%
	13C3-PFBS	112%	111%	113%	99%	20-150%
	13C3-PFHxS	115%	106%	112%	108%	20-150%
	13C8-PFOS	102%	97%	95%	77%	20-150%
	13C8-FOSA	108%	105%	106%	83%	20-150%
	d3-MeFOSA	95%	94%			20-150%
	d5-EtFOSA	91%	95%			20-150%
	d3-MeFOSAA	119%	118%	112%	97%	20-150%
	d5-EtFOSAA	115%	112%	112%	87%	20-150%
	d7-MeFOSE	94%	96%			20-150%
	d9-EtFOSE	96%	97%			20-150%
	13C2-4:2FTS	154%* [b]	149%	187%* [b]	182%* [b]	20-150%
	13C2-6:2FTS	127%	120%	138%	119%	20-150%
	13C2-8:2FTS	121%	120%	112%	135%	20-150%
	13C3-HFPO-DA	115%	112%			20-150%

(a) Confirmation run.
(b) Outside control limits.

* = Outside of Control Limits.