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

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC3042

Sampling Date: 02/27/23

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: 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

Table of Contents

SGS North America Inc.

Sample Summary

AECOM, INC.

Job No: FC3042

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC3042-1	02/27/23	12:35	OS	02/28/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2302W4
FC3042-2	02/27/23	10:45	OS	02/28/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2302W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC3042

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 3/6/2023 11:07:45 AM

On 02/28/2023, 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 4.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC3042 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:** OP95682

Sample(s) FC3034-2MS, FC3034-2MSD were used as the QC samples indicated.

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: FC3042
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/27/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC3042-1	**AF-RHMW06-WGN01LF-2302W4**					
Perfluoroheptanoic acid		0.65 J	4.4	0.88	ng/l	EPA DRAFT 1633
FC3042-2	**AF-RHMW04-WGN01LF-2302W4**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2302W4		
Lab Sample ID:	FC3042-1	**Date Sampled:**	02/27/23
Matrix:	AQ - Ground Water	**Date Received:**	02/28/23
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	4Q41597.D	1	03/02/23 17:53	MV	03/01/23 09:30	OP95682	S4Q595
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	0.88 U	4.4	0.88	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	0.65	4.4	0.88	0.44	ng/l	J
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	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.61	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	0.47	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	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
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-RHMW06-WGN01LF-2302W4		
Lab Sample ID:	FC3042-1	**Date Sampled:**	02/27/23
Matrix:	AQ - Ground Water	**Date Received:**	02/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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	3.8	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.5	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	0.68	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	110%		20-150%
	13C5-PFPeA	107%		20-150%
	13C5-PFHxA	113%		20-150%
	13C4-PFHpA	115%		20-150%
	13C8-PFOA	102%		20-150%
	13C9-PFNA	99%		20-150%
	13C6-PFDA	101%		20-150%
	13C7-PFUnDA	92%		20-150%
	13C2-PFDoDA	92%		20-150%
	13C2-PFTeDA	82%		20-150%
	13C3-PFBS	101%		20-150%
	13C3-PFHxS	103%		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-2302W4		
Lab Sample ID:	FC3042-1	**Date Sampled:**	02/27/23
Matrix:	AQ - Ground Water	**Date Received:**	02/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	96%		20-150%
	13C8-FOSA	97%		20-150%
	d3-MeFOSA	101%		20-150%
	d5-EtFOSA	103%		20-150%
	d3-MeFOSAA	99%		20-150%
	d5-EtFOSAA	93%		20-150%
	d7-MeFOSE	100%		20-150%
	d9-EtFOSE	105%		20-150%
	13C2-4:2FTS	100%		20-150%
	13C2-6:2FTS	107%		20-150%
	13C2-8:2FTS	105%		20-150%
	13C3-HFPO-DA	97%		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-2302W4		
Lab Sample ID:	FC3042-2	**Date Sampled:**	02/27/23
Matrix:	AQ - Ground Water	**Date Received:**	02/28/23
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	4Q41598.D	1	03/02/23 18:07	MV	03/01/23 09:30	OP95682	S4Q595
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	18	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	8.8	1.8	0.82	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	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	4.4	1.8	0.61	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	0.47	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	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
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-2302W4		
Lab Sample ID:	FC3042-2	**Date Sampled:**	02/27/23
Matrix:	AQ - Ground Water	**Date Received:**	02/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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	3.8	ng/l	
1691-99-2	EtFOSE	18 U	44	18	6.5	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	0.68	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	114%		20-150%
	13C5-PFPeA	113%		20-150%
	13C5-PFHxA	115%		20-150%
	13C4-PFHpA	119%		20-150%
	13C8-PFOA	107%		20-150%
	13C9-PFNA	105%		20-150%
	13C6-PFDA	114%		20-150%
	13C7-PFUnDA	104%		20-150%
	13C2-PFDoDA	99%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	104%		20-150%
	13C3-PFHxS	106%		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-2302W4		
Lab Sample ID:	FC3042-2	**Date Sampled:**	02/27/23
Matrix:	AQ - Ground Water	**Date Received:**	02/28/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	105%		20-150%
	13C8-FOSA	111%		20-150%
	d3-MeFOSA	106%		20-150%
	d5-EtFOSA	101%		20-150%
	d3-MeFOSAA	108%		20-150%
	d5-EtFOSAA	105%		20-150%
	d7-MeFOSE	105%		20-150%
	d9-EtFOSE	108%		20-150%
	13C2-4:2FTS	109%		20-150%
	13C2-6:2FTS	114%		20-150%
	13C2-8:2FTS	111%		20-150%
	13C3-HFPO-DA	100%		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

FC3042

SGS - ORLANDO JOB # :

COC #: 2302W4AFSG09

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: Miranda Ozaraga Sampler 2: Olivia Shively

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	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW06-WGN01LF-2302W4	2/27/23	1235	MY, OS, MD	GW	3		X								X	

INITIAL ASSESSMENT

LABEL VERIFICATION

2/27/23

Turnaround Time (Business days)

10 Day (Business)
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Approved By: / Date:
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 016-51279682

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	Olivia Shively/AECOM	2/27/23 1330	2 AECOM	3 AECOM	2/27/23 1400	4 2/28/23
	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): 4.0 ZA

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

PFAS_COCs_ALL.xls Rev 031318

FC3042: Chain of Custody
Page 1 of 3

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

FC3042
SGS - ORLANDO JOB # :

COC #: 2302W4AFSG08
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: Miranda Degraini Sampler 2: Olivia Shively

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	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
2	AF-RHMW04-WGN01LF-2302W4	2/27/23	1045	MM/DD/YY	GW	3		X								X	

INITIAL ASSESSMENT
LABEL VERIFICATION
2/27/23

Turnaround Time (Business days)

10 Day (Business)
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Approved By: / Date:
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 016-51279082

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	Olivia Shively/AECOM	2/27/23 1330	2 AECOM	3 AECOM	2/27/23 1410	4
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5			6	7		8 2/28/23 1230

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

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

PFAS_COCs_ALL.xls Rev 031318

FC3042: Chain of Custody
Page 2 of 3

SGS Sample Receipt Summary

Job Number: FC3042 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/28/2023 12:30:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-51279082

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

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (4.2);

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: 2/28/2023 12:30:00 P Reviewer: CD Date: 3/1/2023

QC Evaluation: DOD QSM5.x Limits

Job Number: FC3042
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/27/23

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 FC3042

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: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q595-IBLK	4Q41588.D	1	03/02/23	MV	n/a	n/a	S4Q595

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

FC3042-1, FC3042-2

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	0.00058	0.0050	0.00050	ug/l	J
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: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q595-IBLK	4Q41588.D	1	03/02/23	MV	n/a	n/a	S4Q595

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

FC3042-1, FC3042-2

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	97%	20-150%
	13C5-PFPeA	104%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	104%	20-150%
	13C9-PFNA	103%	20-150%
	13C6-PFDA	98%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	89%	20-150%
	13C3-PFBS	106%	20-150%
	13C3-PFHxS	100%	20-150%
	13C8-PFOS	97%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSA	107%	20-150%
	d5-EtFOSA	109%	20-150%
	d3-MeFOSAA	88%	20-150%
	d5-EtFOSAA	97%	20-150%
	d7-MeFOSE	110%	20-150%
	d9-EtFOSE	110%	20-150%
	13C2-4:2FTS	100%	20-150%
	13C2-6:2FTS	97%	20-150%
	13C2-8:2FTS	97%	20-150%
	13C3-HFPO-DA	92%	20-150%

Method Blank Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-MB	4Q41596.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

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: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-MB	4Q41596.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

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	111%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	111%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	104%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	88%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	112%	20-150%
	13C8-PFOS	101%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	98%	20-150%
	d5-EtFOSA	94%	20-150%
	d3-MeFOSAA	102%	20-150%
	d5-EtFOSAA	96%	20-150%
	d7-MeFOSE	101%	20-150%
	d9-EtFOSE	108%	20-150%
	13C2-4:2FTS	110%	20-150%
	13C2-6:2FTS	111%	20-150%
	13C2-8:2FTS	117%	20-150%
	13C3-HFPO-DA	99%	20-150%

Continuing Calibration Blank

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q595-ICCB	4Q41601.D	1	03/02/23	MV	n/a	n/a	S4Q595

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

OP95682-MS, OP95682-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: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q595-ICCB	4Q41601.D	1	03/02/23	MV	n/a	n/a	S4Q595

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

OP95682-MS, OP95682-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	101%	20-150%
	13C5-PFPeA	97%	20-150%
	13C5-PFHxA	101%	20-150%
	13C4-PFHpA	104%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	98%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	106%	20-150%
	13C2-PFTeDA	100%	20-150%
	13C3-PFBS	100%	20-150%
	13C3-PFHxS	99%	20-150%
	13C8-PFOS	97%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSA	105%	20-150%
	d5-EtFOSA	106%	20-150%
	d3-MeFOSAA	97%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	109%	20-150%
	d9-EtFOSE	108%	20-150%
	13C2-4:2FTS	100%	20-150%
	13C2-6:2FTS	113%	20-150%
	13C2-8:2FTS	107%	20-150%
	13C3-HFPO-DA	84%	20-150%

Blank Spike Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-LLBS	4Q41595.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0411	103	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0210	105	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0101	101	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0105	105	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0107	107	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0105	105	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0098	98	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0109	109	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0106	106	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0114	114	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0113	113	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0091	103	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0107	114	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0086	94	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0098	103	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0092	99	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0077	80	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0083	86	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0079	81	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0439	117	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0405	107	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0440	115	40-150
754-91-6	PFOSA	0.01	0.0103	103	40-150
31506-32-8	MeFOSA	0.01	0.0095	95	40-150
4151-50-2	EtFOSA	0.01	0.0101	101	40-150
2355-31-9	MeFOSAA	0.01	0.0109	109	40-150
2991-50-6	EtFOSAA	0.01	0.0120	120	40-150
24448-09-7	MeFOSE	0.1	0.108	108	40-150
1691-99-2	EtFOSE	0.1	0.103	103	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0422	106	40-150
919005-14-4	ADONA	0.0378	0.0479	127	40-150
377-73-1	PFMPA	0.02	0.0200	100	40-150
863090-89-5	PFMBA	0.02	0.0206	103	40-150
151772-58-6	NFDHA	0.02	0.0195	98	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0387	103	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0351	93	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-LLBS	4Q41595.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0182	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0464	93	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.284	114	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.262	105	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	114%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	115%	20-150%
	13C4-PFHpA	120%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	99%	20-150%
	13C7-PFUnDA	84%	20-150%
	13C2-PFDoDA	76%	20-150%
	13C2-PFTeDA	72%	20-150%
	13C3-PFBS	111%	20-150%
	13C3-PFHxS	111%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	104%	20-150%
	d3-MeFOSA	96%	20-150%
	d5-EtFOSA	93%	20-150%
	d3-MeFOSAA	92%	20-150%
	d5-EtFOSAA	88%	20-150%
	d7-MeFOSE	94%	20-150%
	d9-EtFOSE	98%	20-150%
	13C2-4:2FTS	114%	20-150%
	13C2-6:2FTS	112%	20-150%
	13C2-8:2FTS	99%	20-150%
	13C3-HFPO-DA	101%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-BS	4Q41594.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.108	108	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0553	111	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0261	104	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0290	116	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0273	109	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0295	118	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0271	108	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0290	116	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0280	112	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0294	118	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0275	110	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0236	106	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0270	115	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0242	106	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0274	115	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0244	105	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0250	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0261	108	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0250	103	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.102	109	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.111	117	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.115	120	40-150
754-91-6	PFOSA	0.025	0.0276	110	40-150
31506-32-8	MeFOSA	0.025	0.0246	98	40-150
4151-50-2	EtFOSA	0.025	0.0251	100	40-150
2355-31-9	MeFOSAA	0.025	0.0260	104	40-150
2991-50-6	EtFOSAA	0.025	0.0309	124	40-150
24448-09-7	MeFOSE	0.25	0.283	113	40-150
1691-99-2	EtFOSE	0.25	0.271	108	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.112	112	40-150
919005-14-4	ADONA	0.0945	0.120	127	40-150
377-73-1	PFMPA	0.05	0.0526	105	40-150
863090-89-5	PFMBA	0.05	0.0550	110	40-150
151772-58-6	NFDHA	0.05	0.0577	115	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.117	125	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.121	128	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-BS	4Q41594.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0498	112	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.130	104	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.763	122	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.737	118	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	108%	20-150%
	13C5-PFPeA	107%	20-150%
	13C5-PFHxA	106%	20-150%
	13C4-PFHpA	113%	20-150%
	13C8-PFOA	106%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	103%	20-150%
	13C2-PFDoDA	107%	20-150%
	13C2-PFTeDA	93%	20-150%
	13C3-PFBS	99%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	93%	20-150%
	13C8-FOSA	96%	20-150%
	d3-MeFOSA	104%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	95%	20-150%
	d5-EtFOSAA	95%	20-150%
	d7-MeFOSE	92%	20-150%
	d9-EtFOSE	98%	20-150%
	13C2-4:2FTS	103%	20-150%
	13C2-6:2FTS	98%	20-150%
	13C2-8:2FTS	96%	20-150%
	13C3-HFPO-DA	99%	20-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-MS	4Q41603.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595
OP95682-MSD	4Q41604.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595
FC3034-2	4Q41602.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

CAS No.	Compound	FC3034-2 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	0.0173	J	0.0877	0.109	105	0.0877	0.112	108	3	40-150/30
2706-90-3	Perfluoropentanoic acid	0.0029	J	0.0439	0.0515	111	0.0439	0.0538	116	4	40-150/30
307-24-4	Perfluorohexanoic acid	0.0045	U	0.0219	0.0220	100	0.0219	0.0231	105	5	40-150/30
375-85-9	Perfluoroheptanoic acid	0.0045	U	0.0219	0.0243	111	0.0219	0.0248	113	2	40-150/30
335-67-1	Perfluorooctanoic acid	0.0045	U	0.0219	0.0230	105	0.0219	0.0250	114	8	40-150/30
375-95-1	Perfluorononanoic acid	0.0045	U	0.0219	0.0240	109	0.0219	0.0247	113	3	40-150/30
335-76-2	Perfluorodecanoic acid	0.0045	U	0.0219	0.0244	111	0.0219	0.0224	102	9	40-150/30
2058-94-8	Perfluoroundecanoic acid	0.0045	U	0.0219	0.0245	112	0.0219	0.0247	113	1	40-150/30
307-55-1	Perfluorododecanoic acid	0.0045	U	0.0219	0.0254	116	0.0219	0.0245	112	4	40-150/30
72629-94-8	Perfluorotridecanoic acid	0.0045	U	0.0219	0.0257	117	0.0219	0.0252	115	2	40-150/30
376-06-7	Perfluorotetradecanoic acid	0.0045	U	0.0219	0.0244	111	0.0219	0.0255	116	4	40-150/30
375-73-5	Perfluorobutanesulfonic acid	0.0045	U	0.0195	0.0209	107	0.0195	0.0213	110	2	40-150/30
2706-91-4	Perfluoropentanesulfonic acid	0.0045	U	0.0206	0.0229	111	0.0206	0.0238	115	4	40-150/30
355-46-4	Perfluorohexanesulfonic acid	0.0045	U	0.02	0.0206	103	0.02	0.0217	108	5	40-150/30
375-92-8	Perfluoroheptanesulfonic acid	0.0045	U	0.0209	0.0216	103	0.0209	0.0225	108	4	40-150/30
1763-23-1	Perfluorooctanesulfonic acid	0.0045	U	0.0204	0.0201	99	0.0204	0.0200	98	0	40-150/30
68259-12-1	Perfluorononanesulfonic acid	0.0045	U	0.0211	0.0216	102	0.0211	0.0207	98	4	40-150/30
335-77-3	Perfluorodecanesulfonic acid	0.0045	U	0.0212	0.0224	106	0.0212	0.0219	103	2	40-150/30
79780-39-5	Perfluorododecanesulfonic aci	0.0045	U	0.0213	0.0210	99	0.0213	0.0212	100	1	40-150/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0822	0.0954	116	0.0822	0.102	124	7	40-150/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0833	0.0885	106	0.0833	0.0948	114	7	40-150/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0842	0.103	122	0.0842	0.0924	110	11	40-150/30
754-91-6	PFOSA	0.00063	J	0.0219	0.0223	99	0.0219	0.0238	106	7	40-150/30
31506-32-8	MeFOSA	0.0045	U	0.0219	0.0208	95	0.0219	0.0240	109	14	40-150/30
4151-50-2	EtFOSA	0.0045	U	0.0219	0.0216	98	0.0219	0.0224	102	4	40-150/30
2355-31-9	MeFOSAA	0.0045	U	0.0219	0.0241	110	0.0219	0.0229	104	5	40-150/30
2991-50-6	EtFOSAA	0.0045	U	0.0219	0.0254	116	0.0219	0.0273	124	7	40-150/30
24448-09-7	MeFOSE	0.045	U	0.219	0.232	106	0.219	0.249	114	7	40-150/30
1691-99-2	EtFOSE	0.045	U	0.219	0.241	110	0.219	0.245	112	2	40-150/30
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0877	0.0962	110	0.0877	0.104	119	8	40-150/30
919005-14-4	ADONA	0.018	U	0.0829	0.109	131	0.0829	0.116	140	6	40-150/30
377-73-1	PFMPA	0.0091	U	0.0439	0.0477	109	0.0439	0.0496	113	4	40-150/30
863090-89-5	PFMBA	0.0091	U	0.0439	0.0481	110	0.0439	0.0500	114	4	40-150/30
151772-58-6	NFDHA	0.0091	U	0.0439	0.0510	116	0.0439	0.0520	119	2	40-150/30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.082	0.102	124	0.082	0.101	123	1	40-150/30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0829	0.103	124	0.0829	0.103	124	0	40-150/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC3042
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95682-MS	4Q41603.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595
OP95682-MSD	4Q41604.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595
FC3034-2	4Q41602.D	1	03/02/23	MV	03/01/23	OP95682	S4Q595

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

FC3042-1, FC3042-2

CAS No.	Compound	FC3034-2 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	0.0091	U	0.039	0.0426	109	0.039	0.0429	110	1	40-150/30
356-02-5	3:3 Fluorotelomer carboxylate	0.023	U	0.11	0.107	98	0.11	0.111	101	4	40-150/30
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.548	0.645	118	0.548	0.666	121	3	40-150/30
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.548	0.633	115	0.548	0.654	119	3	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC3034-2	Limits
	13C4-PFBA	113%	113%	112%	20-150%
	13C5-PFPeA	107%	109%	109%	20-150%
	13C5-PFHxA	110%	113%	112%	20-150%
	13C4-PFHpA	116%	122%	118%	20-150%
	13C8-PFOA	110%	109%	110%	20-150%
	13C9-PFNA	109%	102%	100%	20-150%
	13C6-PFDA	103%	111%	105%	20-150%
	13C7-PFUnDA	103%	105%	90%	20-150%
	13C2-PFDoDA	93%	100%	87%	20-150%
	13C2-PFTeDA	90%	89%	80%	20-150%
	13C3-PFBS	102%	103%	109%	20-150%
	13C3-PFHxS	104%	103%	108%	20-150%
	13C8-PFOS	97%	102%	96%	20-150%
	13C8-FOSA	105%	103%	104%	20-150%
	d3-MeFOSA	101%	101%		20-150%
	d5-EtFOSA	89%	98%		20-150%
	d3-MeFOSAA	99%	105%	93%	20-150%
	d5-EtFOSAA	99%	97%	92%	20-150%
	d7-MeFOSE	100%	100%		20-150%
	d9-EtFOSE	102%	104%		20-150%
	13C2-4:2FTS	105%	99%	112%	20-150%
	13C2-6:2FTS	113%	103%	108%	20-150%
	13C2-8:2FTS	98%	111%	105%	20-150%
	13C3-HFPO-DA	98%	99%		20-150%

* = Outside of Control Limits.