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: FC2799

Sampling Date: 02/16/23

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

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Sample Summary

AECOM, INC.

Job No: FC2799

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC2799-1	02/16/23	11:40	GA	02/17/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2302W2
FC2799-2	02/16/23	13:25	GA	02/17/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2302W2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC2799

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 2/27/2023 6:49:13 PM

On 02/17/2023, 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 3.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC2799 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:** OP95581

Sample(s) FC2799-1MS, FC2833-2DUP 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.

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: FC2799
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/16/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC2799-1	**AF-RHMW02-WGN01LF-2302W2**					
6:2 Fluorotelomer sulfonate		5.3 J	18	7.0	ng/l	EPA DRAFT 1633
FC2799-2	**AF-RHMW03-WGN01LF-2302W2**					
Perfluoropentanoic acid		3.4 J	8.8	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		2.7 J	4.4	0.88	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		1.3 J	4.4	0.88	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		16.3 J	18	7.0	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AF-RHMW02-WGN01LF-2302W2		
Lab Sample ID:	FC2799-1	**Date Sampled:**	02/16/23
Matrix:	AQ - Ground Water	**Date Received:**	02/17/23
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	6Q14345.D	1	02/24/23 22:20	MV	02/22/23 09:00	OP95581	S6Q218
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	5.3	18	7.0	3.0	ng/l	J
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-RHMW02-WGN01LF-2302W2		
Lab Sample ID:	FC2799-1	**Date Sampled:**	02/16/23
Matrix:	AQ - Ground Water	**Date Received:**	02/17/23
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	113%		20-150%
	13C5-PFPeA	104%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	114%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	86%		20-150%
	13C2-PFTeDA	67%		20-150%
	13C3-PFBS	108%		20-150%
	13C3-PFHxS	106%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
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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-2302W2		
Lab Sample ID:	FC2799-1	**Date Sampled:**	02/16/23
Matrix:	AQ - Ground Water	**Date Received:**	02/17/23
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	109%		20-150%
	13C8-FOSA	98%		20-150%
	d3-MeFOSA	79%		20-150%
	d5-EtFOSA	75%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	78%		20-150%
	d9-EtFOSE	77%		20-150%
	13C2-4:2FTS	117%		20-150%
	13C2-6:2FTS	99%		20-150%
	13C2-8:2FTS	95%		20-150%
	13C3-HFPO-DA	93%		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-2302W2
Lab Sample ID: FC2799-2 **Date Sampled:** 02/16/23
Matrix: AQ - Ground Water **Date Received:** 02/17/23
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	6Q14347.D	1	02/24/23 22:48	MV	02/22/23 09:00	OP95581	S6Q218
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	3.4	8.8	1.8	0.82	ng/l	J
307-24-4	Perfluorohexanoic acid	2.7	4.4	0.88	0.44	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.3	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	16.3	18	7.0	3.0	ng/l	J
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	

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Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2302W2		
Lab Sample ID:	FC2799-2	**Date Sampled:**	02/16/23
Matrix:	AQ - Ground Water	**Date Received:**	02/17/23
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	117%		20-150%
	13C5-PFPeA	112%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	115%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	105%		20-150%
	13C6-PFDA	120%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	78%		20-150%
	13C3-PFBS	121%		20-150%
	13C3-PFHxS	114%		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-2302W2		
Lab Sample ID:	FC2799-2	**Date Sampled:**	02/16/23
Matrix:	AQ - Ground Water	**Date Received:**	02/17/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	103%		20-150%
	13C8-FOSA	98%		20-150%
	d3-MeFOSA	89%		20-150%
	d5-EtFOSA	88%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	100%		20-150%
	d7-MeFOSE	89%		20-150%
	d9-EtFOSE	86%		20-150%
	13C2-4:2FTS	111%		20-150%
	13C2-6:2FTS	125%		20-150%
	13C2-8:2FTS	107%		20-150%
	13C3-HFPO-DA	121%		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

FC2799
SGS - ORLANDO JOB # :

COC #: 2302W2AFSG01
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SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information | **Project Information** | **Analytical Information** | **Matrix Codes**

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: GABRIEL ALLEN Sampler 2: MATT YIM

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

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:	CONTAINER INFORMATION 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-2302W2	2.16.23	1140	GA	GW	3		X								X	

2.16.23

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
United AWB 016-17993662

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 GABRIEL ALLEN / AECOM	2.16.23 1445	2 AECOM	3 AECOM	2/16/23 1530	4 2/17/23 1400
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): 3.0/3.0

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

PFAS_COCs_ALL.xls Rev 031318

FC2799: Chain of Custody
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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

FC2799
SGS - ORLANDO JOB # :

COC #: 2302W2AFSG02
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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: [illegible] ALLEN 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:	CONTAINER INFORMATION 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-2302W2	2-16-23	1325	GA	GW	3		X								X	

2-16-23

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 -17993 4662

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	Gabriel Allen / AECOM	2-16-23 1945	2 AECOM	3 AECOM	2/16/23	4 2/17/23
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):

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

PFAS_COCs_ALL.xls Rev 031318

FC2799: Chain of Custody
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SGS Sample Receipt Summary

Job Number: FC2799 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 2/17/2023 2:00:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-17993662

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

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

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

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

	W	S	N/A
3. Type Of TB Received	☐	☐	☑

Sample Information	Y	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: 2/17/2023 2:00:00 PM Reviewer: CD Date: 2/21/2023

FC2799: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FC2799
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 02/16/23

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 FC2799

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

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

Instrument Blank

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q218-IBLK	6Q14339.D	1	02/24/23	MV	n/a	n/a	S6Q218

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

FC2799-1, FC2799-2

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	0.0037	0.0050	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0036	0.0050	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	0.0236	0.050	0.0044	ug/l	J
1691-99-2	EtFOSE	0.0326	0.050	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.020	0.0010	ug/l	
919005-14-4	ADONA	ND	0.020	0.0019	ug/l	
377-73-1	PFMPA	ND	0.010	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.010	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.010	0.0012	ug/l	
756426-58-1	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: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q218-IBLK	6Q14339.D	1	02/24/23	MV	n/a	n/a	S6Q218

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

FC2799-1, FC2799-2

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	103%	20-150%
	13C5-PFPeA	99%	20-150%
	13C5-PFHxA	96%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	98%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	98%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	99%	20-150%
	13C2-PFTeDA	96%	20-150%
	13C3-PFBS	106%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	104%	20-150%
	13C8-FOSA	96%	20-150%
	d3-MeFOSA	90%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	97%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	96%	20-150%
	d9-EtFOSE	94%	20-150%
	13C2-4:2FTS	115%	20-150%
	13C2-6:2FTS	108%	20-150%
	13C2-8:2FTS	118%	20-150%
	13C3-HFPO-DA	102%	20-150%

Method Blank Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MB	6Q14344.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

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: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MB	6Q14344.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

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	112%	20-150%
	13C5-PFPeA	106%	20-150%
	13C5-PFHxA	108%	20-150%
	13C4-PFHpA	112%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	113%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	90%	20-150%
	13C2-PFTeDA	72%	20-150%
	13C3-PFBS	119%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	86%	20-150%
	d3-MeFOSA	78%	20-150%
	d5-EtFOSA	74%	20-150%
	d3-MeFOSAA	94%	20-150%
	d5-EtFOSAA	88%	20-150%
	d7-MeFOSE	76%	20-150%
	d9-EtFOSE	76%	20-150%
	13C2-4:2FTS	130%	20-150%
	13C2-6:2FTS	127%	20-150%
	13C2-8:2FTS	117%	20-150%
	13C3-HFPO-DA	115%	20-150%

Blank Spike Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-LLBS	6Q14343.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.04	0.0463	116	40-150
2706-90-3	Perfluoropentanoic acid	0.02	0.0229	115	40-150
307-24-4	Perfluorohexanoic acid	0.01	0.0114	114	40-150
375-85-9	Perfluoroheptanoic acid	0.01	0.0114	114	40-150
335-67-1	Perfluorooctanoic acid	0.01	0.0117	117	40-150
375-95-1	Perfluorononanoic acid	0.01	0.0119	119	40-150
335-76-2	Perfluorodecanoic acid	0.01	0.0125	125	40-150
2058-94-8	Perfluoroundecanoic acid	0.01	0.0125	125	40-150
307-55-1	Perfluorododecanoic acid	0.01	0.0105	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.01	0.0101	101	40-150
376-06-7	Perfluorotetradecanoic acid	0.01	0.0112	112	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00887	0.0109	123	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00941	0.0104	111	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00914	0.0112	123	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00953	0.0108	113	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00928	0.0118	127	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00962	0.0117	122	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00965	0.0115	119	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0097	0.0117	121	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0375	0.0435	116	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.038	0.0472	124	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0384	0.0441	115	40-150
754-91-6	PFOSA	0.01	0.0113	113	40-150
31506-32-8	MeFOSA	0.01	0.0111	111	40-150
4151-50-2	EtFOSA	0.01	0.0095	95	40-150
2355-31-9	MeFOSAA	0.01	0.0121	121	40-150
2991-50-6	EtFOSAA	0.01	0.0103	103	40-150
24448-09-7	MeFOSE	0.1	0.106	106	40-150
1691-99-2	EtFOSE	0.1	0.104	104	40-150
13252-13-6	HFPO-DA (GenX)	0.04	0.0436	109	40-150
919005-14-4	ADONA	0.0378	0.0421	111	40-150
377-73-1	PFMPA	0.02	0.0237	119	40-150
863090-89-5	PFMBA	0.02	0.0243	122	40-150
151772-58-6	NFDHA	0.02	0.0238	119	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0374	0.0381	102	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0378	0.0357	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-LLBS	6Q14343.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0178	0.0201	113	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.05	0.0430	86	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.25	0.273	109	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.25	0.290	116	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	116%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	119%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	111%	20-150%
	13C9-PFNA	105%	20-150%
	13C6-PFDA	114%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	118%	20-150%
	13C3-PFHxS	122%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	99%	20-150%
	d3-MeFOSA	87%	20-150%
	d5-EtFOSA	85%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	81%	20-150%
	13C2-4:2FTS	130%	20-150%
	13C2-6:2FTS	122%	20-150%
	13C2-8:2FTS	126%	20-150%
	13C3-HFPO-DA	127%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-BS	6Q14342.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.121	121	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0591	118	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0296	118	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0320	128	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0296	118	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0280	112	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0302	121	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0319	128	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0275	110	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0285	114	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0318	127	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0274	124	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0284	121	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0281	123	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0286	120	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0287	124	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0275	114	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0277	115	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0279	115	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.117	125	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.125	132	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.124	129	40-150
754-91-6	PFOSA	0.025	0.0285	114	40-150
31506-32-8	MeFOSA	0.025	0.0282	113	40-150
4151-50-2	EtFOSA	0.025	0.0257	103	40-150
2355-31-9	MeFOSAA	0.025	0.0290	116	40-150
2991-50-6	EtFOSAA	0.025	0.0309	124	40-150
24448-09-7	MeFOSE	0.25	0.261	104	40-150
1691-99-2	EtFOSE	0.25	0.266	106	40-150
13252-13-6	HFPO-DA (GenX)	0.1	0.115	115	40-150
919005-14-4	ADONA	0.0945	0.111	117	40-150
377-73-1	PFMPA	0.05	0.0598	120	40-150
863090-89-5	PFMBA	0.05	0.0602	120	40-150
151772-58-6	NFDHA	0.05	0.0666	133	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0935	0.100	107	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0945	0.100	106	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-BS	6Q14342.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0564	127	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.117	94	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.734	117	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.719	115	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	108%	20-150%
	13C5-PFPeA	103%	20-150%
	13C5-PFHxA	104%	20-150%
	13C4-PFHpA	101%	20-150%
	13C8-PFOA	99%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	101%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	101%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	108%	20-150%
	d3-MeFOSA	97%	20-150%
	d5-EtFOSA	95%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	83%	20-150%
	d9-EtFOSE	85%	20-150%
	13C2-4:2FTS	111%	20-150%
	13C2-6:2FTS	101%	20-150%
	13C2-8:2FTS	99%	20-150%
	13C3-HFPO-DA	113%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MS	6Q14346.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2799-1	6Q14345.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	FC2799-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.018	U	0.0909	0.0705	78	40-150
2706-90-3	Perfluoropentanoic acid	0.0088	U	0.0455	0.120	264*	40-150
307-24-4	Perfluorohexanoic acid	0.0044	U	0.0227	0.0271	119	40-150
375-85-9	Perfluoroheptanoic acid	0.0044	U	0.0227	0.0273	120	40-150
335-67-1	Perfluorooctanoic acid	0.0044	U	0.0227	0.0260	114	40-150
375-95-1	Perfluorononanoic acid	0.0044	U	0.0227	0.0278	122	40-150
335-76-2	Perfluorodecanoic acid	0.0044	U	0.0227	0.0270	119	40-150
2058-94-8	Perfluoroundecanoic acid	0.0044	U	0.0227	0.0287	126	40-150
307-55-1	Perfluorododecanoic acid	0.0044	U	0.0227	0.0270	119	40-150
72629-94-8	Perfluorotridecanoic acid	0.0044	U	0.0227	0.0249	110	40-150
376-06-7	Perfluorotetradecanoic acid	0.0044	U	0.0227	0.0279	123	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0044	U	0.0202	0.0233	116	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0044	U	0.0214	0.0250	117	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0044	U	0.0208	0.0244	117	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0044	U	0.0217	0.0273	126	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0044	U	0.0211	0.0246	117	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0044	U	0.0219	0.0247	113	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0044	U	0.0219	0.0211	96	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0044	U	0.022	0.0126	57	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0852	0.101	119	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0053	J	0.0864	0.102	112	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0873	0.126	144	40-150
754-91-6	PFOSA	0.0044	U	0.0227	0.0290	128	40-150
31506-32-8	MeFOSA	0.0044	U	0.0227	0.0269	118	40-150
4151-50-2	EtFOSA	0.0044	U	0.0227	0.0261	115	40-150
2355-31-9	MeFOSAA	0.0044	U	0.0227	0.0272	120	40-150
2991-50-6	EtFOSAA	0.0044	U	0.0227	0.0276	121	40-150
24448-09-7	MeFOSE	0.044	U	0.227	0.249	110	40-150
1691-99-2	EtFOSE	0.044	U	0.227	0.252	111	40-150
13252-13-6	HFPO-DA (GenX)	0.018	U	0.0909	0.0989	109	40-150
919005-14-4	ADONA	0.018	U	0.0859	0.106	123	40-150
377-73-1	PFMPA	0.0088	U	0.0455	0.0460	101	40-150
863090-89-5	PFMBA	0.0088	U	0.0455	0.0568	125	40-150
151772-58-6	NFDHA	0.0088	U	0.0455	0.0523	115	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018	U	0.085	0.0862	101	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018	U	0.0859	0.0651	76	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-MS	6Q14346.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2799-1	6Q14345.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	FC2799-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0088	U	0.0405	0.0490	121	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	0.114	0.127	112	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	0.568	0.779	137	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	0.568	0.744	131	40-150

CAS No.	ID Standard Recoveries	MS	FC2799-1	Limits
	13C4-PFBA	112%	113%	20-150%
	13C5-PFPeA	102%	104%	20-150%
	13C5-PFHxA	105%	103%	20-150%
	13C4-PFHpA	110%	114%	20-150%
	13C8-PFOA	109%	110%	20-150%
	13C9-PFNA	104%	101%	20-150%
	13C6-PFDA	109%	102%	20-150%
	13C7-PFUnDA	91%	100%	20-150%
	13C2-PFDoDA	81%	86%	20-150%
	13C2-PFTeDA	69%	67%	20-150%
	13C3-PFBS	113%	108%	20-150%
	13C3-PFHxS	106%	106%	20-150%
	13C8-PFOS	101%	109%	20-150%
	13C8-FOSA	101%	98%	20-150%
	d3-MeFOSA	86%	79%	20-150%
	d5-EtFOSA	83%	75%	20-150%
	d3-MeFOSAA	107%	102%	20-150%
	d5-EtFOSAA	104%	96%	20-150%
	d7-MeFOSE	86%	78%	20-150%
	d9-EtFOSE	83%	77%	20-150%
	13C2-4:2FTS	124%	117%	20-150%
	13C2-6:2FTS	109%	99%	20-150%
	13C2-8:2FTS	88%	95%	20-150%
	13C3-HFPO-DA	106%	93%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-DUP	6Q14351.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2833-2	6Q14349.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	FC2833-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.018 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0089 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0045 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0045 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0045 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0045 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0045 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0045 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0045 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0045 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0045 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0045 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0045 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0045 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0045 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0053	J	0.0067	J	23	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
754-91-6	PFOSA	0.0045 U		ND		nc	30
31506-32-8	MeFOSA	0.0045 U		ND		nc	30
4151-50-2	EtFOSA	0.0045 U		ND		nc	30
2355-31-9	MeFOSAA	0.0045 U		ND		nc	30
2991-50-6	EtFOSAA	0.0045 U		ND		nc	30
24448-09-7	MeFOSE	0.045 U		ND		nc	30
1691-99-2	EtFOSE	0.045 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.018 U		ND		nc	30
919005-14-4	ADONA	0.018 U		ND		nc	30
377-73-1	PFMPA	0.0089 U		ND		nc	30
863090-89-5	PFMBA	0.0089 U		ND		nc	30
151772-58-6	NFDHA	0.0089 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.018 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.018 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC2799
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP95581-DUP	6Q14351.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218
FC2833-2	6Q14349.D	1	02/24/23	MV	02/22/23	OP95581	S6Q218

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

FC2799-1, FC2799-2

CAS No.	Compound	FC2833-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0089	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.022	U	ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.11	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.11	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC2833-2	Limits
	13C4-PFBA	118%	115%	20-150%
	13C5-PFPeA	110%	106%	20-150%
	13C5-PFHxA	112%	110%	20-150%
	13C4-PFHpA	113%	109%	20-150%
	13C8-PFOA	110%	108%	20-150%
	13C9-PFNA	115%	108%	20-150%
	13C6-PFDA	116%	109%	20-150%
	13C7-PFUnDA	99%	99%	20-150%
	13C2-PFDoDA	90%	88%	20-150%
	13C2-PFTeDA	69%	71%	20-150%
	13C3-PFBS	118%	112%	20-150%
	13C3-PFHxS	119%	114%	20-150%
	13C8-PFOS	108%	95%	20-150%
	13C8-FOSA	121%	115%	20-150%
	d3-MeFOSA	114%	115%	20-150%
	d5-EtFOSA	112%	105%	20-150%
	d3-MeFOSAA	133%	142%	20-150%
	d5-EtFOSAA	154%* [a]	144%	20-150%
	d7-MeFOSE	105%	100%	20-150%
	d9-EtFOSE	108%	107%	20-150%
	13C2-4:2FTS	160%* [a]	136%	20-150%
	13C2-6:2FTS	115%	109%	20-150%
	13C2-8:2FTS	116%	99%	20-150%
	13C3-HFPO-DA	117%	115%	20-150%

(a) Outside control limits.

* = Outside of Control Limits.