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: FC5652

Sampling Date: 04/27/23

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: 32

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

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

AECOM, INC.

Job No: FC5652

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC5652-1	04/27/23	09:55	MYCW	04/28/23	AQ	Ground Water	AF-RHMW02-WGN01LF-2304W4
FC5652-2	04/27/23	11:25	MYCW	04/28/23	AQ	Ground Water	AF-RHMW03-WGN01LF-2304W4

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC5652

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 5/5/2023 5:38:42 PM

On 04/28/2023, 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 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5652 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:** OP96662

Sample(s) FC5685-3MS, FC5685-4DUP 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: FC5652
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/27/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC5652-1	**AF-RHMW02-WGN01LF-2304W4**					
Perfluoroheptanoic acid		0.56 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid		0.59 J	3.8	0.94	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		5.5 J	19	7.5	ng/l	EPA DRAFT 1633
FC5652-2	**AF-RHMW03-WGN01LF-2304W4**					
Perfluoropentanoic acid		2.7 J	7.5	1.9	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		1.5 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid		1.6 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid		0.50 J	3.8	0.94	ng/l	EPA DRAFT 1633
6:2 Fluorotelomer sulfonate		15.2 J	19	7.5	ng/l	EPA DRAFT 1633

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: AF-RHMW02-WGN01LF-2304W4
Lab Sample ID: FC5652-1
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 04/27/23
Date Received: 04/28/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q43901.D	1	05/03/23 14:47	NG	05/01/23 11:00	OP96662	S4Q634
Run #2							

	Initial Volume	Final Volume
Run #1	530 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.5	1.9	0.89	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
375-85-9	Perfluoroheptanoic acid	0.56	3.8	1.9	0.47	ng/l	J
335-67-1	Perfluorooctanoic acid	0.59	3.8	0.94	0.47	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	5.5	19	7.5	3.3	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	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-2304W4		
Lab Sample ID:	FC5652-1	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	38	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.0	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.94	ng/l	
919005-14-4	ADONA	3.8 U	7.5	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	7.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.5	3.8	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.5	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.5	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.74	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	19	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	94	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	94	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		20-150%
	13C5-PFPeA	80%		20-150%
	13C5-PFHxA	102%		20-150%
	13C4-PFHpA	108%		20-150%
	13C8-PFOA	108%		20-150%
	13C9-PFNA	106%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	97%		20-150%
	13C2-PFDoDA	89%		20-150%
	13C2-PFTeDA	55%		20-150%
	13C3-PFBS	99%		20-150%
	13C3-PFHxS	99%		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-RHMW02-WGN01LF-2304W4		
Lab Sample ID:	FC5652-1	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
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	56%		20-150%
	d3-MeFOSA	51%		20-150%
	d5-EtFOSA	53%		20-150%
	d3-MeFOSAA	97%		20-150%
	d5-EtFOSAA	99%		20-150%
	d7-MeFOSE	36%		20-150%
	d9-EtFOSE	41%		20-150%
	13C2-4:2FTS	124%		20-180%
	13C2-6:2FTS	100%		20-180%
	13C2-8:2FTS	91%		20-180%
	13C3-HFPO-DA	82%		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-2304W4
Lab Sample ID: FC5652-2
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 04/27/23
Date Received: 04/28/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q43902.D	1	05/03/23 15:01	NG	05/01/23 11:00	OP96662	S4Q634
Run #2							

	Initial Volume	Final Volume
Run #1	530 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.8 U	15	3.8	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	2.7	7.5	1.9	0.89	ng/l	J
307-24-4	Perfluorohexanoic acid	1.5	3.8	1.9	0.47	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.6	3.8	1.9	0.47	ng/l	J
335-67-1	Perfluorooctanoic acid	0.50	3.8	0.94	0.47	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.57	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.79	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.47	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.7	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.66	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.47	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.51	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.54	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.60	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.7	3.8	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	15.2	19	7.5	3.3	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.5 U	19	7.5	3.9	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.8	1.9	0.63	ng/l	
31506-32-8	MeFOSA	3.8 U	7.5	3.8	0.94	ng/l	
4151-50-2	EtFOSA	3.8 U	7.5	3.8	0.94	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW03-WGN01LF-2304W4		
Lab Sample ID:	FC5652-2	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
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	3.8 U	4.7	3.8	0.94	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.7	3.8	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	38	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.0	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.94	ng/l	
919005-14-4	ADONA	3.8 U	7.5	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.5	1.9	0.94	ng/l	
863090-89-5	PFMBA	3.8 U	7.5	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.5	3.8	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.5	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.5	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.5	1.9	0.74	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.4 U	19	9.4	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	94	19	8.2	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	94	19	7.4	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	81%		20-150%
	13C5-PFPeA	100%		20-150%
	13C5-PFHxA	105%		20-150%
	13C4-PFHpA	108%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	99%		20-150%
	13C7-PFUnDA	80%		20-150%
	13C2-PFDoDA	60%		20-150%
	13C2-PFTeDA	29%		20-150%
	13C3-PFBS	110%		20-150%
	13C3-PFHxS	99%		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-2304W4		
Lab Sample ID:	FC5652-2	**Date Sampled:**	04/27/23
Matrix:	AQ - Ground Water	**Date Received:**	04/28/23
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	92%		20-150%
	13C8-FOSA	44%		20-150%
	d3-MeFOSA	36%		20-150%
	d5-EtFOSA	35%		20-150%
	d3-MeFOSAA	96%		20-150%
	d5-EtFOSAA	98%		20-150%
	d7-MeFOSE	26%		20-150%
	d9-EtFOSE	26%		20-150%
	13C2-4:2FTS	113%		20-180%
	13C2-6:2FTS	95%		20-180%
	13C2-8:2FTS	85%		20-180%
	13C3-HFPO-DA	99%		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

FC5652

COC #: 2304W4AFSG01

PAGE 1 OF 1

SGS North America Inc - Orlando
Chain of Custody

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

SGS - ORLANDO JOB # :

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: Matt Yim Sampler 2: Chris Yamasaki

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
1	AF-RHMW02-WGN01LF-2304W4	4/27/23	0955	M Y, CW	GW	3		X								X

M Y 4/27/23

M Y 4/27/23

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 AIME 0165-8714796552

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	Matt Yim AECOM	4/27/23 1235	2 Brittany Tominez / AECOM	3 Brittany Tominez / AECOM	4/27/23 1430	4 United Cargo
5	United Cargo	Date Time:	6 [signature] 04/28/23	7	Date Time:	8

Lab Use Only: Cooler Temperature (s) Celsius (corrected): 4.0 IR#1

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

PFAS_COCs_ALL.xls Rev 031318

FC5652: 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

FC5652 COC #: 2304W4AFSG02
SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
Project Contact: Katie Abbott Email: katie.abbott@aecom.com
Project Manager: Watson Tanji Email: watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: Matt Yim Sampler 2: Chris Womack

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	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW03-WGN01LF-2304W4	4/27/23	1125	MY,CW	GW	3		X								X	

MY 4/27/23

MY 4/27/23

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
[5] 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 Airl. 016-8747952

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	Matt Yim AECOM	4/27/23 1235	2 Brittany Tamirez / AECOM	3 Brittany Tamirez / AECOM	04/27/23 1430	4 United Cargo
5	United Cargo	Date Time:	6 04/28/23 1500	7	Date Time:	8

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

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

PFAS_COCs_ALL.xls Rev 031318

FC5652: Chain of Custody
Page 2 of 3

SGS Sample Receipt Summary

Job Number: FC5652 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 4/28/2023 3:00:00 PM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-87479652

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

Cooler Temps (Raw Measured) °C: Cooler 1: (4.1);

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

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 230320 pH 10-12 25BDH07 Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 4/28/2023 3:00:00 PM Reviewer: CD Date: 5/1/2023

FC5652: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FC5652
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 04/27/23

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 FC5652

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: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-IBLK	4Q43892.D	1	05/03/23	NG	n/a	n/a	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-IBLK	4Q43892.D	1	05/03/23	NG	n/a	n/a	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	102%	20-150%
	13C5-PFHxA	99%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	102%	20-150%
	13C9-PFNA	97%	20-150%
	13C6-PFDA	104%	20-150%
	13C7-PFUnDA	106%	20-150%
	13C2-PFDoDA	104%	20-150%
	13C2-PFTeDA	96%	20-150%
	13C3-PFBS	104%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	92%	20-150%
	d3-MeFOSA	91%	20-150%
	d5-EtFOSA	99%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	102%	20-150%
	d7-MeFOSE	80%	20-150%
	d9-EtFOSE	82%	20-150%
	13C2-4:2FTS	113%	20-180%
	13C2-6:2FTS	124%	20-180%
	13C2-8:2FTS	121%	20-180%
	13C3-HFPO-DA	102%	20-150%

Method Blank Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MB	4Q43900.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MB	4Q43900.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	110%	20-150%
	13C5-PFPeA	115%	20-150%
	13C5-PFHxA	113%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	118%	20-150%
	13C6-PFDA	99%	20-150%
	13C7-PFUnDA	102%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	72%	20-150%
	13C3-PFBS	106%	20-150%
	13C3-PFHxS	103%	20-150%
	13C8-PFOS	110%	20-150%
	13C8-FOSA	44%	20-150%
	d3-MeFOSA	34%	20-150%
	d5-EtFOSA	38%	20-150%
	d3-MeFOSAA	105%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	25%	20-150%
	d9-EtFOSE	28%	20-150%
	13C2-4:2FTS	121%	20-180%
	13C2-6:2FTS	115%	20-180%
	13C2-8:2FTS	125%	20-180%
	13C3-HFPO-DA	110%	20-150%

Continuing Calibration Blank

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-ICCB	4Q43908.D	1	05/03/23	NG	n/a	n/a	S4Q634

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

OP96662-DUP

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	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	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	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	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q634-ICCB	4Q43908.D	1	05/03/23	NG	n/a	n/a	S4Q634

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

OP96662-DUP

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	102%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	99%	20-150%
	13C8-PFOA	103%	20-150%
	13C9-PFNA	103%	20-150%
	13C6-PFDA	94%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	99%	20-150%
	13C2-PFTeDA	87%	20-150%
	13C3-PFBS	98%	20-150%
	13C3-PFHxS	99%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	96%	20-150%
	d3-MeFOSA	100%	20-150%
	d5-EtFOSA	98%	20-150%
	d3-MeFOSAA	112%	20-150%
	d5-EtFOSAA	107%	20-150%
	d7-MeFOSE	84%	20-150%
	d9-EtFOSE	81%	20-150%
	13C2-4:2FTS	110%	20-180%
	13C2-6:2FTS	128%	20-180%
	13C2-8:2FTS	126%	20-180%
	13C3-HFPO-DA	94%	20-150%

Blank Spike Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-LLBS	4Q43899.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0261	87	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0131	87	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0070	93	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0063	84	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0065	87	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0065	87	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0070	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0064	85	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0063	84	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0055	73	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0066	88	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0058	87	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0063	89	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0063	92	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0065	91	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0056	80	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0062	86	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0057	79	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0059	81	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0245	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0265	93	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0275	95	40-150
754-91-6	PFOSA	0.0075	0.0074	99	40-150
31506-32-8	MeFOSA	0.015	0.0130	87	40-150
4151-50-2	EtFOSA	0.015	0.0128	85	40-150
2355-31-9	MeFOSAA	0.0075	0.0058	77	40-150
2991-50-6	EtFOSAA	0.0075	0.0067	89	40-150
24448-09-7	MeFOSE	0.0375	0.0345	92	40-150
1691-99-2	EtFOSE	0.0375	0.0267	71	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0140	93	40-150
919005-14-4	ADONA	0.0142	0.0127	90	40-150
377-73-1	PFMPA	0.015	0.0135	90	40-150
863090-89-5	PFMBA	0.015	0.0132	88	40-150
151772-58-6	NFDHA	0.015	0.0144	96	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0120	86	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0118	83	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-LLBS	4Q43899.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0120	90	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0284	76	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.137	73	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.133	71	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	109%	20-150%
	13C5-PFPeA	114%	20-150%
	13C5-PFHxA	111%	20-150%
	13C4-PFHpA	115%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	109%	20-150%
	13C7-PFUnDA	110%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	83%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	106%	20-150%
	13C8-PFOS	106%	20-150%
	13C8-FOSA	39%	20-150%
	d3-MeFOSA	34%	20-150%
	d5-EtFOSA	34%	20-150%
	d3-MeFOSAA	108%	20-150%
	d5-EtFOSAA	94%	20-150%
	d7-MeFOSE	22%	20-150%
	d9-EtFOSE	25%	20-150%
	13C2-4:2FTS	127%	20-180%
	13C2-6:2FTS	126%	20-180%
	13C2-8:2FTS	113%	20-180%
	13C3-HFPO-DA	111%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-BS	4Q43898.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0918	92	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0453	91	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0224	90	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0232	93	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0225	90	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0228	91	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0229	92	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0219	88	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0232	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0218	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0248	99	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0204	92	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0224	95	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0215	94	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0222	93	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0224	97	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0219	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0205	85	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0206	85	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0819	87	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0875	92	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0943	98	40-150
754-91-6	PFOSA	0.025	0.0250	100	40-150
31506-32-8	MeFOSA	0.05	0.0515	103	40-150
4151-50-2	EtFOSA	0.05	0.0454	91	40-150
2355-31-9	MeFOSAA	0.025	0.0245	98	40-150
2991-50-6	EtFOSAA	0.025	0.0216	86	40-150
24448-09-7	MeFOSE	0.125	0.113	90	40-150
1691-99-2	EtFOSE	0.125	0.101	81	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0485	97	40-150
919005-14-4	ADONA	0.0473	0.0463	98	40-150
377-73-1	PFMPA	0.05	0.0463	93	40-150
863090-89-5	PFMBA	0.05	0.0453	91	40-150
151772-58-6	NFDHA	0.05	0.0472	94	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0445	95	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0442	94	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-BS	4Q43898.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0410	92	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0976	78	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.484	77	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.483	77	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	107%	20-150%
	13C5-PFPeA	111%	20-150%
	13C5-PFHxA	109%	20-150%
	13C4-PFHpA	108%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	107%	20-150%
	13C6-PFDA	110%	20-150%
	13C7-PFUnDA	112%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	84%	20-150%
	13C3-PFBS	114%	20-150%
	13C3-PFHxS	105%	20-150%
	13C8-PFOS	106%	20-150%
	13C8-FOSA	45%	20-150%
	d3-MeFOSA	32%	20-150%
	d5-EtFOSA	37%	20-150%
	d3-MeFOSAA	109%	20-150%
	d5-EtFOSAA	106%	20-150%
	d7-MeFOSE	27%	20-150%
	d9-EtFOSE	29%	20-150%
	13C2-4:2FTS	133%	20-180%
	13C2-6:2FTS	122%	20-180%
	13C2-8:2FTS	118%	20-180%
	13C3-HFPO-DA	104%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MS	4Q43906.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-3	4Q43905.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	FC5685-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0025	J	0.0962	0.0944	96	40-150
2706-90-3	Perfluoropentanoic acid	0.0024	J	0.0481	0.0469	93	40-150
307-24-4	Perfluorohexanoic acid	0.0017	J	0.024	0.0237	92	40-150
375-85-9	Perfluoroheptanoic acid	0.00053	J	0.024	0.0226	92	40-150
335-67-1	Perfluorooctanoic acid	0.0036	U	0.024	0.0224	93	40-150
375-95-1	Perfluorononanoic acid	0.0036	U	0.024	0.0223	93	40-150
335-76-2	Perfluorodecanoic acid	0.0036	U	0.024	0.0242	101	40-150
2058-94-8	Perfluoroundecanoic acid	0.0036	U	0.024	0.0226	94	40-150
307-55-1	Perfluorododecanoic acid	0.0036	U	0.024	0.0229	95	40-150
72629-94-8	Perfluorotridecanoic acid	0.0036	U	0.024	0.0209	87	40-150
376-06-7	Perfluorotetradecanoic acid	0.0036	U	0.024	0.0241	100	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0036	U	0.0213	0.0201	94	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045	U	0.0226	0.0215	95	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0036	U	0.022	0.0212	96	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0036	U	0.0229	0.0230	100	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0036	U	0.0223	0.0200	90	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0036	U	0.0231	0.0200	86	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0036	U	0.0232	0.0186	80	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045	U	0.0233	0.0152	65	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0901	0.0874	97	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0042	J	0.0913	0.0897	94	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0923	0.0938	102	40-150
754-91-6	PFOSA	0.0036	U	0.024	0.0240	100	40-150
31506-32-8	MeFOSA	0.0071	U	0.0481	0.0468	97	40-150
4151-50-2	EtFOSA	0.0071	U	0.0481	0.0446	93	40-150
2355-31-9	MeFOSAA	0.0045	U	0.024	0.0245	102	40-150
2991-50-6	EtFOSAA	0.0045	U	0.024	0.0232	97	40-150
24448-09-7	MeFOSE	0.036	U	0.12	0.107	89	40-150
1691-99-2	EtFOSE	0.036	U	0.12	0.108	90	40-150
13252-13-6	HFPO-DA (GenX)	0.0036	U	0.0481	0.0472	98	40-150
919005-14-4	ADONA	0.0071	U	0.0454	0.0468	103	40-150
377-73-1	PFMPA	0.0071	U	0.0481	0.0436	91	40-150
863090-89-5	PFMBA	0.0071	U	0.0481	0.0449	93	40-150
151772-58-6	NFDHA	0.0071	U	0.0481	0.0453	94	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0071	U	0.045	0.0386	86	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0071	U	0.0454	0.0336	74	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-MS	4Q43906.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-3	4Q43905.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634

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

FC5652-1, FC5652-2

CAS No.	Compound	FC5685-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0071	U	0.0428	0.0408	95	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018	U	0.12	0.0847	70	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.089	U	0.601	0.479	80	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.089	U	0.601	0.498	83	40-150

CAS No.	ID Standard Recoveries	MS	FC5685-3	Limits
	13C4-PFBA	93%	95%	20-150%
	13C5-PFPeA	109%	110%	20-150%
	13C5-PFHxA	107%	109%	20-150%
	13C4-PFHpA	111%	110%	20-150%
	13C8-PFOA	106%	105%	20-150%
	13C9-PFNA	100%	100%	20-150%
	13C6-PFDA	85%	101%	20-150%
	13C7-PFUnDA	81%	100%	20-150%
	13C2-PFDoDA	70%	81%	20-150%
	13C2-PFTeDA	55%	63%	20-150%
	13C3-PFBS	99%	103%	20-150%
	13C3-PFHxS	97%	101%	20-150%
	13C8-PFOS	93%	101%	20-150%
	13C8-FOSA	53%	61%	20-150%
	d3-MeFOSA	41%	53%	20-150%
	d5-EtFOSA	46%	59%	20-150%
	d3-MeFOSAA	92%	107%	20-150%
	d5-EtFOSAA	88%	102%	20-150%
	d7-MeFOSE	30%	37%	20-150%
	d9-EtFOSE	31%	42%	20-150%
	13C2-4:2FTS	105%	122%	20-180%
	13C2-6:2FTS	114%	107%	20-180%
	13C2-8:2FTS	103%	124%	20-180%
	13C3-HFPO-DA	102%	103%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-DUP	4Q43910.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4	4Q43909.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4 [a]	4Q43980.D	5	05/04/23	NG	05/01/23	OP96662	S4Q635

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

FC5652-1, FC5652-2

CAS No.	Compound	FC5685-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.070 U [b]		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0070 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0035 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0035 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0035 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0035 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0035 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0035 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0035 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0035 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0035 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0035 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0044 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0035 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0035 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0035 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0035 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0035 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0044 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		ND		nc	30
754-91-6	PFOSA	0.0035 U		ND		nc	30
31506-32-8	MeFOSA	0.0070 U		ND		nc	30
4151-50-2	EtFOSA	0.0070 U		ND		nc	30
2355-31-9	MeFOSAA	0.022 U [b]		ND		nc	30
2991-50-6	EtFOSAA	0.022 U [b]		ND		nc	30
24448-09-7	MeFOSE	0.035 U		ND		nc	30
1691-99-2	EtFOSE	0.035 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0035 U		ND		nc	30
919005-14-4	ADONA	0.0070 U		ND		nc	30
377-73-1	PFMPA	0.0070 U		ND		nc	30
863090-89-5	PFMBA	0.0070 U		ND		nc	30
151772-58-6	NFDHA	0.0070 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0070 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0070 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC5652
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96662-DUP	4Q43910.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4	4Q43909.D	1	05/03/23	NG	05/01/23	OP96662	S4Q634
FC5685-4 [a]	4Q43980.D	5	05/04/23	NG	05/01/23	OP96662	S4Q635

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

FC5652-1, FC5652-2

CAS No.	Compound	FC5685-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0070 U		ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U		ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.088 U		ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.088 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC5685-4	FC5685-4	Limits
	13C4-PFBA	10%* [c]	11%* [c]	12%* [c]	20-150%
	13C5-PFPeA	27%	30%	29%	20-150%
	13C5-PFHxA	53%	57%	58%	20-150%
	13C4-PFHpA	78%	87%	84%	20-150%
	13C8-PFOA	88%	96%	102%	20-150%
	13C9-PFNA	96%	101%	105%	20-150%
	13C6-PFDA	92%	107%	89%	20-150%
	13C7-PFUnDA	90%	98%	84%	20-150%
	13C2-PFDoDA	78%	86%	83%	20-150%
	13C2-PFTeDA	45%	56%	60%	20-150%
	13C3-PFBS	65%	69%	72%	20-150%
	13C3-PFHxS	86%	101%	106%	20-150%
	13C8-PFOS	97%	101%	77%	20-150%
	13C8-FOSA	67%	57%	39%	20-150%
	d3-MeFOSA	61%	53%	38%	20-150%
	d5-EtFOSA	59%	58%	39%	20-150%
	d3-MeFOSAA	156%* [c]	157%* [c]	100%	20-150%
	d5-EtFOSAA	165%* [c]	161%* [c]	120%	20-150%
	d7-MeFOSE	32%	29%	21%	20-150%
	d9-EtFOSE	32%	33%	22%	20-150%
	13C2-4:2FTS	61%	69%	48%	20-180%
	13C2-6:2FTS	75%	93%	108%	20-180%
	13C2-8:2FTS	94%	108%	119%	20-180%
	13C3-HFPO-DA	45%	48%	50%	20-150%

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

* = Outside of Control Limits.