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## Technical Report for

**AECOM, INC.**

**N6274223F0104 RH Fire Suppression System**

**60697810**

**SGS Job Number: FC11715**

**Sampling Date: 12/05/23**



### Report to:

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**ATTN: Katie Abbott**

**Total number of pages in report: 40**



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 unless noted in the narrative, comments or footnotes.

**Norm Farmer**  
**Technical Director**

**Client Service contact: Terri McNulty-Patterson 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),  
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Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary</b> .....	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary</b> .....	<b>4</b>
<b>Section 3: Summary of Hits</b> .....	<b>5</b>
<b>Section 4: Sample Results</b> .....	<b>6</b>
<b>4.1:</b> FC11715-1: AF-RHMW225401-WGN01B-2312 .....	7
<b>4.2:</b> FC11715-2: AF-RHMW04-WGN01LF-2312 .....	10
<b>4.3:</b> FC11715-3: AF-RHMW06-WGN01LF-2312 .....	13
<b>4.4:</b> FC11715-4: AF-RHMW10-WGN01LF-2312 .....	16
<b>Section 5: Misc. Forms</b> .....	<b>19</b>
<b>5.1:</b> Chain of Custody .....	20
<b>5.2:</b> QC Evaluation: DOD QSM5.x Limits .....	25
<b>Section 6: MS Semi-volatiles - QC Data Summaries</b> .....	<b>26</b>
<b>6.1:</b> Method Blank Summary .....	27
<b>6.2:</b> Blank Spike Summary .....	33
<b>6.3:</b> Matrix Spike Summary .....	37
<b>6.4:</b> Duplicate Summary .....	39

1

2

3

4

5

6



### Sample Summary

AECOM, INC.

Job No: FC11715

N6274223F0104 RH Fire Suppression System  
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC11715-1	12/05/23	13:00	AYMY12/06/23	AQ	Ground Water	AF-RHMW225401-WGN01B-2312
FC11715-2	12/05/23	09:30	CL 12/06/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2312
FC11715-3	12/05/23	13:55	CLJVL12/06/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2312
FC11715-4	12/05/23	12:55	MN 12/06/23	AQ	Ground Water	AF-RHMW10-WGN01LF-2312

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** AECOM, INC.

**Job No:** FC11715

**Site:** N6274223F0104 RH Fire Suppression System

**Report Date:** 12/11/2023 4:58:17

On 12/06/2023, 4 Sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC11715 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:** OP495

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FC11715-2MS, FC11715-3DUP 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:

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Kim Benham, Client Services (*Signature on File*)

## Summary of Hits

**Job Number:** FC11715  
**Account:** AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System  
**Collected:** 12/05/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC11715-1      AF-RHMW225401-WGN01B-2312

Perfluoropentanoic acid	1.0 J	7.3	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	0.70 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	0.59 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	1.0 J	3.6	0.91	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid	0.63 J	3.6	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanesulfonic acid	1.2 J	3.6	1.8	ng/l	EPA DRAFT 1633

FC11715-2      AF-RHMW04-WGN01LF-2312

No hits reported in this sample.

FC11715-3      AF-RHMW06-WGN01LF-2312

No hits reported in this sample.

FC11715-4      AF-RHMW10-WGN01LF-2312

6:2 Fluorotelomer sulfonate	4.0 J	18	7.1	ng/l	EPA DRAFT 1633
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**Sample Results**

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**Report of Analysis**

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# Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2312		
Lab Sample ID:	FC11715-1	Date Sampled:	12/05/23
Matrix:	AQ - Ground Water	Date Received:	12/06/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q54887.D	1	12/08/23 20:20	AL	12/07/23 08:00	OP495	S4Q804
Run #2							

Run #	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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**PERFLUOROALKYL CARBOXYLIC ACIDS**

375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.0	7.3	1.8	0.85	ng/l	J
307-24-4	Perfluorohexanoic acid	0.70	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	0.59	3.6	1.8	0.45	ng/l	J
335-67-1	Perfluorooctanoic acid	1.0	3.6	0.91	0.45	ng/l	J
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	

**PERFLUOROALKYL SULFONIC ACIDS**

375-73-5	Perfluorobutanesulfonic acid	0.63	3.6	1.8	0.45	ng/l	J
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.2	3.6	1.8	0.64	ng/l	J
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	

**FLUOROTELOMER SULFONIC ACIDS**

757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	

**PERFLUOROOCCTANE SULFONAMIDES**

754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	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

4.1  
4

# Report of Analysis

Client Sample ID:	AF-RHMW225401-WGN01B-2312		
Lab Sample ID:	FC11715-1	Date Sampled:	12/05/23
Matrix:	AQ - Ground Water	Date Received:	12/06/23
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

**PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS**

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l

CAS No. ID Standard Recoveries Run# 1 Run# 2 Limits

13C4-PFBA	113%	20-150%
13C5-PFPeA	116%	20-150%
13C5-PFHxA	111%	20-150%
13C4-PFHpA	111%	20-150%
13C8-PFOA	112%	20-150%
13C9-PFNA	106%	20-150%
13C6-PFDA	104%	20-150%
13C7-PFUnDA	103%	20-150%
13C2-PFDoDA	89%	20-150%
13C2-PFTeDA	86%	20-150%
13C3-PFBS	117%	20-150%
13C3-PFHxS	124%	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

4.1  
4



## Report of Analysis

<b>Client Sample ID:</b>	AF-RHMW225401-WGN01B-2312		
<b>Lab Sample ID:</b>	FC11715-1	<b>Date Sampled:</b>	12/05/23
<b>Matrix:</b>	AQ - Ground Water	<b>Date Received:</b>	12/06/23
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT	<b>Percent Solids:</b>	n/a
<b>Project:</b>	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	98%		20-150%
	13C8-FOSA	71%		20-150%
	d3-MeFOSA	74%		20-150%
	d5-EtFOSA	84%		20-150%
	d3-MeFOSAA	100%		20-150%
	d5-EtFOSAA	94%		20-150%
	d7-MeFOSE	59%		20-150%
	d9-EtFOSE	77%		20-150%
	13C2-4:2FTS	102%		20-180%
	13C2-6:2FTS	112%		20-180%
	13C2-8:2FTS	118%		20-180%
	13C3-HFPO-DA	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-2312		
Lab Sample ID:	FC11715-2	Date Sampled:	12/05/23
Matrix:	AQ - Ground Water	Date Received:	12/06/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q54888.D	1	12/08/23 20:35	AL	12/07/23 08:00	OP495	S4Q804
Run #2							

Run #	Initial Volume	Final Volume
Run #1	520 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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**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	7.7	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	0.96 U	3.8	0.96	0.48	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.8	1.9	0.59	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.8	1.9	0.58	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.8	1.9	0.81	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.8	1.9	0.48	ng/l	

**PERFLUOROALKYL SULFONIC ACIDS**

375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.8 U	4.8	3.8	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.8	1.9	0.67	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.8	1.9	0.48	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.8	1.9	0.52	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.8	1.9	0.55	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.8	1.9	0.62	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.8 U	4.8	3.8	1.1	ng/l	

**FLUOROTELOMER SULFONIC ACIDS**

757124-72-4	4:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.1	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.7 U	19	7.7	3.3	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.7 U	19	7.7	4.0	ng/l	

**PERFLUOROOCCTANE SULFONAMIDES**

754-91-6	PFOSA	1.9 U	3.8	1.9	0.64	ng/l	
31506-32-8	MeFOSA	3.8 U	7.7	3.8	0.96	ng/l	
4151-50-2	EtFOSA	3.8 U	7.7	3.8	0.96	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

4.2  
4

# Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2312	
Lab Sample ID:	FC11715-2	Date Sampled: 12/05/23
Matrix:	AQ - Ground Water	Date Received: 12/06/23
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
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**PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS**

2355-31-9	MeFOSAA	3.8 U	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	19 U	38	19	4.2	ng/l	
1691-99-2	EtFOSE	19 U	38	19	7.1	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	1.9 U	3.8	1.9	0.96	ng/l	
919005-14-4	ADONA	3.8 U	7.7	3.8	1.8	ng/l	
377-73-1	PFMPA	1.9 U	7.7	1.9	0.96	ng/l	
863090-89-5	PFMBA	3.8 U	7.7	3.8	1.1	ng/l	
151772-58-6	NFDHA	3.8 U	7.7	3.8	1.2	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.8 U	7.7	3.8	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.8 U	7.7	3.8	1.7	ng/l	
113507-82-7	PFEESA	1.9 U	7.7	1.9	0.75	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.6 U	19	9.6	4.3	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	96	19	8.4	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	96	19	7.5	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	105%		20-150%
	13C5-PFPeA	104%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	106%		20-150%
	13C8-PFOA	101%		20-150%
	13C9-PFNA	96%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	98%		20-150%
	13C2-PFDoDA	91%		20-150%
	13C2-PFTeDA	86%		20-150%
	13C3-PFBS	99%		20-150%
	13C3-PFHxS	101%		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

<b>Client Sample ID:</b>	AF-RHMW04-WGN01LF-2312	
<b>Lab Sample ID:</b>	FC11715-2	<b>Date Sampled:</b> 12/05/23
<b>Matrix:</b>	AQ - Ground Water	<b>Date Received:</b> 12/06/23
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT	<b>Percent Solids:</b> n/a
<b>Project:</b>	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	92%		20-150%
	13C8-FOSA	76%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	89%		20-150%
	d3-MeFOSAA	100%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	63%		20-150%
	d9-EtFOSE	84%		20-150%
	13C2-4:2FTS	95%		20-180%
	13C2-6:2FTS	101%		20-180%
	13C2-8:2FTS	102%		20-180%
	13C3-HFPO-DA	96%		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-2312		
Lab Sample ID:	FC11715-3	Date Sampled:	12/05/23
Matrix:	AQ - Ground Water	Date Received:	12/06/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q54890.D	1	12/08/23 21:04	AL	12/07/23 08:00	OP495	S4Q804
Run #2							

Run #	Initial Volume	Final Volume
Run #1	510 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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**PERFLUOROALKYL CARBOXYLIC ACIDS**

375-22-4	Perfluorobutanoic acid	3.9 U	16	3.9	1.9	ng/l	
2706-90-3	Perfluoropentanoic acid	2.0 U	7.8	2.0	0.92	ng/l	
307-24-4	Perfluorohexanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
375-85-9	Perfluoroheptanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
335-67-1	Perfluorooctanoic acid	0.98 U	3.9	0.98	0.49	ng/l	
375-95-1	Perfluorononanoic acid	2.0 U	3.9	2.0	0.60	ng/l	
335-76-2	Perfluorodecanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
2058-94-8	Perfluoroundecanoic acid	2.0 U	3.9	2.0	0.59	ng/l	
307-55-1	Perfluorododecanoic acid	2.0 U	3.9	2.0	0.59	ng/l	
72629-94-8	Perfluorotridecanoic acid	2.0 U	3.9	2.0	0.82	ng/l	
376-06-7	Perfluorotetradecanoic acid	2.0 U	3.9	2.0	0.49	ng/l	

**PERFLUOROALKYL SULFONIC ACIDS**

375-73-5	Perfluorobutanesulfonic acid	2.0 U	3.9	2.0	0.49	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.9 U	4.9	3.9	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	2.0 U	3.9	2.0	0.69	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	2.0 U	3.9	2.0	0.49	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.0 U	3.9	2.0	0.53	ng/l	
68259-12-1	Perfluorononanesulfonic acid	2.0 U	3.9	2.0	0.56	ng/l	
335-77-3	Perfluorodecanesulfonic acid	2.0 U	3.9	2.0	0.63	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.9 U	4.9	3.9	1.1	ng/l	

**FLUOROTELOMER SULFONIC ACIDS**

757124-72-4	4:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.2	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.4	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.8 U	20	7.8	4.0	ng/l	

**PERFLUOROOCCTANE SULFONAMIDES**

754-91-6	PFOSA	2.0 U	3.9	2.0	0.66	ng/l	
31506-32-8	MeFOSA	3.9 U	7.8	3.9	0.98	ng/l	
4151-50-2	EtFOSA	3.9 U	7.8	3.9	0.98	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-2312	
Lab Sample ID:	FC11715-3	Date Sampled: 12/05/23
Matrix:	AQ - Ground Water	Date Received: 12/06/23
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
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**PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS**

2355-31-9	MeFOSAA	3.9 U	4.9	3.9	0.98	ng/l	
2991-50-6	EtFOSAA	3.9 U	4.9	3.9	1.3	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	20 U	39	20	4.3	ng/l	
1691-99-2	EtFOSE	20 U	39	20	7.3	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	2.0 U	3.9	2.0	0.98	ng/l	
919005-14-4	ADONA	3.9 U	7.8	3.9	1.8	ng/l	
377-73-1	PFMPA	2.0 U	7.8	2.0	0.98	ng/l	
863090-89-5	PFMBA	3.9 U	7.8	3.9	1.1	ng/l	
151772-58-6	NFDHA	3.9 U	7.8	3.9	1.2	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.9 U	7.8	3.9	1.4	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.9 U	7.8	3.9	1.7	ng/l	
113507-82-7	PFEESA	2.0 U	7.8	2.0	0.76	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.8 U	20	9.8	4.4	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	20 U	98	20	8.6	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	20 U	98	20	7.7	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	111%		20-150%
	13C5-PFPeA	109%		20-150%
	13C5-PFHxA	107%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	106%		20-150%
	13C9-PFNA	103%		20-150%
	13C6-PFDA	99%		20-150%
	13C7-PFUnDA	100%		20-150%
	13C2-PFDoDA	86%		20-150%
	13C2-PFTeDA	85%		20-150%
	13C3-PFBS	104%		20-150%
	13C3-PFHxS	107%		20-150%

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

## Report of Analysis

<b>Client Sample ID:</b>	AF-RHMW06-WGN01LF-2312		
<b>Lab Sample ID:</b>	FC11715-3	<b>Date Sampled:</b>	12/05/23
<b>Matrix:</b>	AQ - Ground Water	<b>Date Received:</b>	12/06/23
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT	<b>Percent Solids:</b>	n/a
<b>Project:</b>	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	94%		20-150%
	13C8-FOSA	79%		20-150%
	d3-MeFOSA	82%		20-150%
	d5-EtFOSA	90%		20-150%
	d3-MeFOSAA	95%		20-150%
	d5-EtFOSAA	90%		20-150%
	d7-MeFOSE	65%		20-150%
	d9-EtFOSE	85%		20-150%
	13C2-4:2FTS	86%		20-180%
	13C2-6:2FTS	111%		20-180%
	13C2-8:2FTS	109%		20-180%
	13C3-HFPO-DA	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-RHMW10-WGN01LF-2312		
Lab Sample ID:	FC11715-4	Date Sampled:	12/05/23
Matrix:	AQ - Ground Water	Date Received:	12/06/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	Percent Solids:	n/a
Project:	N6274223F0104 RH Fire Suppression System		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q54892.D	1	12/08/23 21:34	AL	12/07/23 08:00	OP495	S4Q804
Run #2							

Run #	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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**PERFLUOROALKYL CARBOXYLIC ACIDS**

375-22-4	Perfluorobutanoic acid	3.6 U	14	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.1	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	

**PERFLUOROALKYL SULFONIC ACIDS**

375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	

**FLUOROTELOMER SULFONIC ACIDS**

757124-72-4	4:2 Fluorotelomer sulfonate	7.1 U	18	7.1	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	4.0	18	7.1	3.1	ng/l	J
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	

**PERFLUOROOCCTANE SULFONAMIDES**

754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	0.89	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-RHMW10-WGN01LF-2312		
Lab Sample ID:	FC11715-4	Date Sampled:	12/05/23
Matrix:	AQ - Ground Water	Date Received:	12/06/23
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
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**PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS**

2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.89	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	113%		20-150%
	13C5-PFPeA	115%		20-150%
	13C5-PFHxA	113%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	109%		20-150%
	13C9-PFNA	112%		20-150%
	13C6-PFDA	111%		20-150%
	13C7-PFUnDA	97%		20-150%
	13C2-PFDoDA	89%		20-150%
	13C2-PFTeDA	86%		20-150%
	13C3-PFBS	114%		20-150%
	13C3-PFHxS	118%		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

4.4  
4

## Report of Analysis

<b>Client Sample ID:</b>	AF-RHMW10-WGN01LF-2312	
<b>Lab Sample ID:</b>	FC11715-4	<b>Date Sampled:</b> 12/05/23
<b>Matrix:</b>	AQ - Ground Water	<b>Date Received:</b> 12/06/23
<b>Method:</b>	EPA DRAFT 1633 EPA 1633 DRAFT	<b>Percent Solids:</b> n/a
<b>Project:</b>	N6274223F0104 RH Fire Suppression System	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	91%		20-150%
	13C8-FOSA	86%		20-150%
	d3-MeFOSA	84%		20-150%
	d5-EtFOSA	91%		20-150%
	d3-MeFOSAA	109%		20-150%
	d5-EtFOSAA	103%		20-150%
	d7-MeFOSE	66%		20-150%
	d9-EtFOSE	85%		20-150%
	13C2-4:2FTS	109%		20-180%
	13C2-6:2FTS	120%		20-180%
	13C2-8:2FTS	112%		20-180%
	13C3-HFPO-DA	107%		20-150%

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Misc. Forms**

**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811  
TEL: 407-425-6700 FAX: 407-425-0707  
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SKIFF #

FC11715

Client / Reporting Information			Project Information			Analytical Information											Matrix Codes				
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			<div style="position: absolute; top: 10px; right: 10px; font-size: 2em; opacity: 0.5;"> </div>											DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe				
Address: 1001 Bishop St. ste 1600			Street																		
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii																		
Project Contact: Katie Abbott Email: katie.abbott@aecom.com			Project # 23F0104 - 60697810																		
Project Manager: Watson Tani Email: watson.tani@aecom.com			Fax #																		
Phone #: 303-796-4624 / 808-954-4512			Client Purchase Order # 151253			PFAS EPA Draft 1683 X															
Sampler(s) Name(s) (Printed) Sampler 1: <i>Andy Young</i> Sampler 2: <i>Math Yun</i>			COLLECTION			CONTAINER INFORMATION											LAB USE ONLY				
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	ICI	MECH	PHOS	PHOS	PBSCA	PBSCA	PBSCA	PBSCA	DI WATER	MECH	PFAS EPA Draft 1683	X	
1	AF-RHMW225401-WGN01B-2312	12/5/23	1300	AT, MY	GW	3		X													
											INITIAL ASSESSMENT <i>ZB</i> LABEL VERIFICATION <i>[Signature]</i>										
Turnaround Time ( Business days)				Data Deliverable Information								Comments / Remarks									
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other				<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S								EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AFB: 012-97503974									
Rush T/A Data Available VIA Email or Lablink				Sample Custody must be documented below each time samples change possession, including courier delivery.																	
Relinquished by Sampler/Affiliation <i>1 Andy Young / AECOM</i>	Date Time: <i>12/5/23 1520</i>	Received By/Affiliation <i>2 Brittany Tomez / AECOM</i>	Relinquished By/Affiliation <i>3 Brittany Tomez / AECOM</i>	Date Time: <i>12/5/23 1530</i>	Received By/Affiliation <i>4 ZB / 1715</i>												<i>12/6/23</i>				
Relinquished by/Affiliation <i>5</i>	Date Time: <i>6</i>	Received By/Affiliation <i>7</i>	Relinquished By/Affiliation <i>8</i>	Date Time: <i>8</i>	Received By/Affiliation																
Lab Use Only: Cooler Temperature (s) Celsius (corrected): <i>2.6 IRI</i>					<a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>																



### SGS North America Inc - Orlando

### Chain of Custody

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PAGE 1 OF 1

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**FC11715**

Client / Reporting Information		Project Information		Analytical Information										Matrix Codes				
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System		<div style="display: flex; justify-content: space-between;"> <span>PPFAS EPA Draft 1653</span> <span>12/17/23</span> </div>										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				
Address: 1001 Bishop St. ste 1600		Street																
City: Honolulu State: HI Zip: 96813		City: Honolulu State: Hawaii																
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 23F0104 - 60697810																
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Fax #																
Phone #: 303-796-4624 / 808-954-4512		Client Purchase Order # 151253																
Sampler(s) Name(s) (Printed)		Sampler 1: <i>Clarissa Watson</i> Sampler 2: <i>Clarissa Watson</i>																
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION										LAB USE ONLY			
		DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	FO	NOH	PNGB	HSC04	MSDS/ZWAS	DI WATER		MICH		
2	AF-RHMW04-WGN01LF-2312	12/19/23	0930	CL	GW	3	X											
Turnaround Time ( Business days)		Data Deliverable Information		Comments / Remarks														
10 Day (Business) Approved By: / Date: 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S		EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW Unlabeled AWW: 916 - 91503976														
Rush T/A Data Available VIA Email or Lablink												Sample Custody must be documented below each time samples change possession, including courier delivery.						
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Date Time:		Relinquished By/Affiliation		Date Time:		Received By/Affiliation						
1 <i>Clarissa Watson / AECOM</i>		12/15/23 1435		2 <i>Brittany Tominez / AECOM</i>		12/15/23 1454		3 <i>Brittany Tominez / AECOM</i>		12/15/23 1454		4 <i>38h / 12/16/23</i>						
5				6				7				8						
Lab Use Only: Cooler Temperature (s) Celsius (corrected):												<a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>						

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FC11715: Chain of Custody

Page 2 of 5





SGS North America Inc - Orlando  
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811  
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WWW.SGS.COM

COC #: 2312AFSG09

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PAGE 1 OF 1

FC11715

SGS - ORLANDO Quote # SKIFF #

Client / Reporting Information		Project Information				Analytical Information											Matrix Codes										
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System				<div style="position: relative; height: 100px;"> <span style="position: absolute; top: 0; left: 0; transform: rotate(-45deg); font-size: 2em;">13</span> <span style="position: absolute; top: 0; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">12-09-23</span> </div>											DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe										
Address: 1001 Bishop St. ste 1600		Street																									
City: Honolulu	State: HI	Zip: 96813	City Honolulu		State Hawaii																						
Project Contact: Katie Abbott Email: katie.abbott@aecom.com		Project # 23F0104 - 60697810		Fax #																							
Project Manager: Watson Tanji Email: watson.tanji@aecom.com		Client Purchase Order # 151253																									
Phone #: 303-798-4624 / 808-954-4512																											
Sampler(s) Name(s) (Printed)																											
Sampler 1: LAINE SAKAI Sampler 2: CLARA LIN																											
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION											PFAS EPA Draft 1883	LAB USE ONLY										
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	ICI	NIOSH	INCS	HEPCA	MSDS/MSDS	D. WATER	MECH												
3	AF-RHMW06-WGN01LF-2312	12-09-23	1335	CLARA LIN	GW	3	X											X									
<div style="position: relative; height: 100px;"> <span style="position: absolute; top: 0; left: 0; transform: rotate(-45deg); font-size: 2em;">14</span> <span style="position: absolute; top: 0; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">12-09-23</span> </div>																											
Turnaround Time ( Business days)		Data Deliverable Information					Comments / Remarks																				
10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other		Approved By: / Date:  <input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS OC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S					EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United ANB: 016 - 97503976																				
Rush T/A Data Available VIA Email or Lablink																											
Sample Custody must be documented below each time samples change possession, including courier delivery.																											
Relinquished by Sampler/Affiliation 1 LAINE SAKAI / AECOM		Date Time: 12/09/23		Received By/Affiliation 2 Brittany Tommez / AECOM		Relinquished By/Affiliation 3 Brittany Tommez / AECOM		Date Time: 12/09/23		Received By/Affiliation 4 [Signature] / 1715		Date Time: 12/09/23		Received By/Affiliation 5 [Signature] / 12/09/23		Date Time: 12/09/23		Received By/Affiliation 6 [Signature] / 12/09/23		Date Time: 12/09/23		Received By/Affiliation 7 [Signature] / 12/09/23		Date Time: 12/09/23		Received By/Affiliation 8 [Signature] / 12/09/23	
Lab Use Only : Cooler Temperature (s) Celsius (corrected):												<a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>															



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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

COC #: 2312AFSG03

SGS - ORLANDO JOB # :

PAGE 1 OF 1

**FC11715**

SGS - ORLANDO Quote #

SKIFF #

Client / Reporting Information			Project Information													Analytical Information													Matrix Codes	
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System													<i>12/5/23</i>													DW - Drinking Water	
Address: 1001 Bishop St. ste 1600			Street																										GW - Ground Water	
City: Honolulu State: HI Zip: 96813			City Honolulu State Hawaii																										WW - Water	
Project Contact: Katie Abbott Email: katie.abbott@aecom.com			Project # 23F0104 - 60697810																										SW - Surface Water	
Project Manager: Watson Tanji Email: watson.tanji@aecom.com			Fax #																										SO - Soil	
Phone #: 303-796-4624 / 808-954-4512			Client Purchase Order # 151253																										SL - Sludge	
Sampler(s) Name(s) (Printed) <i>Mohanna W. (M)</i>																													OI - Oil	
Sampler 1: <i>MICHAEL N...</i>																													LIQ - Other Liquid	
Sampler 2: <i>CHRIS W. (CW)</i>																													AIR - Air	
SGS Orlando Sample #			COLLECTION			CONTAINER INFORMATION										PFAS EPA Draft 1683													SOL - Other Solid	
Field ID / Point of Collection			DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	ICI	MCH	INC3	H3024	MCH2/MAC	P. WATER	MECH	LAB USE ONLY													WP - Wipe
4 AF-RHMW10-WGN01L-F-2312			12/5/23	1255	MN	GW	3																							
						<i>12/5/23</i>																								
Turnaround Time ( Business days)						Data Deliverable Information						Comments / Remarks																		
10 Day (Business)			Approved By: / Date:			<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S						EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United AWB : 016-97503976																		
7 Day																														
5 Day																														
3 Day RUSH																														
2 Day RUSH																														
1 Day RUSH																														
Other																														
Rush T/A Data Available VIA Email or Lablink						Sample Custody must be documented below each time samples change possession, including courier delivery.																								
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation				Relinquished By/Affiliation		Date Time:		Received By/Affiliation				Relinquished By/Affiliation		Date Time:		Received By/Affiliation										
1 MN / AECOM		12/5/23 1435		2 <i>Brittany Tominez / AECOM</i>				3 <i>Brittany Tominez / AECOM</i>		12/5/23 1454		4 <i>[Signature]</i> 1715				5 <i>[Signature]</i> 1715		6 <i>[Signature]</i>												
Relinquished by/Affiliation		Date Time:		Received By/Affiliation				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):																		<a href="http://www.sgs.com/en/terms-and-conditions">http://www.sgs.com/en/terms-and-conditions</a>												

PFAS\_COCs\_ALL\_12042023.xls Rev 031318

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**FC11715: Chain of Custody**  
Page 4 of 5



## SGS - Orlando Sample Receipt Summary

Job Number: fc11715

Client: AECOM

Project: N6274223F0104 RH FIRE SUPPRESSION

Date / Time Received: 12/6/2023 5:15:00 PM

Delivery Method: UNITED CARGO

Airbill #'s: UNITED AWB: 016-97503976

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);

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

**Cooler Information**

Y or N

- 1. Custody Seals Present:
- 2. Custody Seals Intact:
- 3. Temp criteria achieved:
- 4. Cooler temp verification: IR Gun
- 5. Cooler media: Ice (Bag)

**Trip Blank Information**

Y or N N/A

- 1. Trip Blank present / cooler:
- 2. Trip Blank listed on COC:

W or S N/A

- 3. Type of TB Received

**Sample Information**

Y or N N/A

- 1. Sample labels present on bottles:
- 2. Samples presented properly:
- 3. Sufficient volume/containers recv'd for analysis:
- 4. Condition of sample: Intact
- 5. Sample recv'd 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 Lab Filtered Metals:

Test Strip Lot #s: pH 0-3: 226422

pH 10-12: \_\_\_\_\_ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot # \_\_\_\_\_

Comments

Sample Receipt Summary 112723 EK Technician: ZANEB

Date: 12/6/2023 6:26:19 PM

Reviewer: \_\_\_\_\_

Date: \_\_\_\_\_

**FC11715: Chain of Custody**

Page 5 of 5

5.1  
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# QC Evaluation: DOD QSM5.x Limits

**Job Number:** FC11715  
**Account:** AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System  
**Collected:** 12/05/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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No DOD QSM5.x Limits found for methods in this job.

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\* Sample used for QC is not from job FC11715

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## MS Semi-volatiles

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### QC Data Summaries

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#### Includes the following where applicable:

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

# Instrument Blank

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-IBLK	4Q54860.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

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	
757124-72-44:2	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	0.0022	0.0080	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0028	0.0080	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	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	0.0075	0.040	0.0074	ug/l	J
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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

# Instrument Blank

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-IBLK	4Q54860.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

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	
914637-49-35:3	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	101% 20-150%
	13C5-PFHxA	96% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	98% 20-150%
	13C9-PFNA	100% 20-150%
	13C6-PFDA	105% 20-150%
	13C7-PFUnDA	108% 20-150%
	13C2-PFDoDA	102% 20-150%
	13C2-PFTeDA	101% 20-150%
	13C3-PFBS	99% 20-150%
	13C3-PFHxS	100% 20-150%
	13C8-PFOS	92% 20-150%
	13C8-FOSA	97% 20-150%
	d3-MeFOSAA	100% 20-150%
	d5-EtFOSAA	100% 20-150%
	13C2-4:2FTS	102% 20-180%
	13C2-6:2FTS	105% 20-180%
	13C2-8:2FTS	102% 20-180%

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# Continuing Calibration Blank

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-ICCB	4Q54882.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

# Continuing Calibration Blank

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-ICCB	4Q54882.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

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	
914637-49-35:3	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	102% 20-150%
	13C4-PFHpA	106% 20-150%
	13C8-PFOA	100% 20-150%
	13C9-PFNA	101% 20-150%
	13C6-PFDA	102% 20-150%
	13C7-PFUnDA	105% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	97% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	95% 20-150%
	13C8-FOSA	102% 20-150%
	d3-MeFOSAA	97% 20-150%
	d5-EtFOSAA	98% 20-150%
	13C2-4:2FTS	108% 20-180%
	13C2-6:2FTS	102% 20-180%
	13C2-8:2FTS	98% 20-180%

# Method Blank Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MB	4Q54885.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

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	
757124-72-44:2	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	
756426-58-19	Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-91	Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

# Method Blank Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MB	4Q54885.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

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	
914637-49-35:3	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	119% 20-150%
	13C5-PFPeA	122% 20-150%
	13C5-PFHxA	120% 20-150%
	13C4-PFHpA	126% 20-150%
	13C8-PFOA	112% 20-150%
	13C9-PFNA	112% 20-150%
	13C6-PFDA	118% 20-150%
	13C7-PFUnDA	109% 20-150%
	13C2-PFDoDA	103% 20-150%
	13C2-PFTeDA	94% 20-150%
	13C3-PFBS	106% 20-150%
	13C3-PFHxS	110% 20-150%
	13C8-PFOS	115% 20-150%
	13C8-FOSA	73% 20-150%
	d3-MeFOSA	79% 20-150%
	d5-EtFOSA	88% 20-150%
	d3-MeFOSAA	114% 20-150%
	d5-EtFOSAA	109% 20-150%
	d7-MeFOSE	57% 20-150%
	d9-EtFOSE	76% 20-150%
	13C2-4:2FTS	112% 20-180%
	13C2-6:2FTS	106% 20-180%
	13C2-8:2FTS	105% 20-180%
	13C3-HFPO-DA	117% 20-150%



# Blank Spike Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-LLBS	4Q54884.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0304	101	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0148	99	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0073	97	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0076	101	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0073	97	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0073	97	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0078	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0081	108	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0081	108	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0081	108	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0074	99	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0068	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0068	96	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0073	106	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0080	112	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0076	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0083	115	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0075	104	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0067	92	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0295	105	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0294	103	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0328	114	40-150
754-91-6	PFOSA	0.0075	0.0075	100	40-150
31506-32-8	MeFOSA	0.015	0.0135	90	40-150
4151-50-2	EtFOSA	0.015	0.0152	101	40-150
2355-31-9	MeFOSAA	0.0075	0.0085	113	40-150
2991-50-6	EtFOSAA	0.0075	0.0076	101	40-150
24448-09-7	MeFOSE	0.0375	0.0373	99	40-150
1691-99-2	EtFOSE	0.0375	0.0391	104	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0157	105	40-150
919005-14-4	ADONA	0.0142	0.0157	111	40-150
377-73-1	PFMPA	0.015	0.0162	108	40-150
863090-89-5	PFMBA	0.015	0.0156	104	40-150
151772-58-6	NFDHA	0.015	0.0155	103	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0150	107	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0152	107	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-LLBS	4Q54884.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0140	105	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0323	86	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.190	101	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.205	109	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	111%	20-150%
	13C5-PFHxA	108%	20-150%
	13C4-PFHpA	113%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	105%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	111%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	80%	20-150%
	d3-MeFOSA	76%	20-150%
	d5-EtFOSA	78%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	101%	20-150%
	d7-MeFOSE	56%	20-150%
	d9-EtFOSE	69%	20-150%
	13C2-4:2FTS	103%	20-180%
	13C2-6:2FTS	107%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	108%	20-150%

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-B5	4Q54883.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.101	101	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0492	98	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0243	97	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0242	97	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0245	98	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0248	99	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0233	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0247	99	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0262	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0260	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0242	97	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0214	97	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0238	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0231	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0238	100	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0231	100	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0282	117	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0248	103	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0226	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.104	111	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0974	103	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0948	99	40-150
754-91-6	PFOSA	0.025	0.0247	99	40-150
31506-32-8	MeFOSA	0.05	0.0463	93	40-150
4151-50-2	EtFOSA	0.05	0.0523	105	40-150
2355-31-9	MeFOSAA	0.025	0.0282	113	40-150
2991-50-6	EtFOSAA	0.025	0.0229	92	40-150
24448-09-7	MeFOSE	0.125	0.117	94	40-150
1691-99-2	EtFOSE	0.125	0.117	94	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0515	103	40-150
919005-14-4	ADONA	0.0473	0.0531	112	40-150
377-73-1	PFMPA	0.05	0.0501	100	40-150
863090-89-5	PFMBA	0.05	0.0510	102	40-150
151772-58-6	NFDHA	0.05	0.0492	98	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0512	110	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0505	107	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-BS	4Q54883.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0459	103	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.123	98	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.634	101	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.641	103	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	76%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	110%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	111%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	75%	20-150%
	d3-MeFOSA	80%	20-150%
	d5-EtFOSA	78%	20-150%
	d3-MeFOSAA	96%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	54%	20-150%
	d9-EtFOSE	69%	20-150%
	13C2-4:2FTS	91%	20-180%
	13C2-6:2FTS	108%	20-180%
	13C2-8:2FTS	119%	20-180%
	13C3-HFPO-DA	107%	20-150%

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MS	4Q54889.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-2	4Q54888.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	FC11715-2 ug/l	Spike Q	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015 U	0.0909	0.0908	100	40-150
2706-90-3	Perfluoropentanoic acid	0.0077 U	0.0455	0.0437	96	40-150
307-24-4	Perfluorohexanoic acid	0.0038 U	0.0227	0.0220	97	40-150
375-85-9	Perfluoroheptanoic acid	0.0038 U	0.0227	0.0223	98	40-150
335-67-1	Perfluorooctanoic acid	0.0038 U	0.0227	0.0214	94	40-150
375-95-1	Perfluorononanoic acid	0.0038 U	0.0227	0.0226	99	40-150
335-76-2	Perfluorodecanoic acid	0.0038 U	0.0227	0.0222	98	40-150
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0227	0.0237	104	40-150
307-55-1	Perfluorododecanoic acid	0.0038 U	0.0227	0.0234	103	40-150
72629-94-8	Perfluorotridecanoic acid	0.0038 U	0.0227	0.0243	107	40-150
376-06-7	Perfluorotetradecanoic acid	0.0038 U	0.0227	0.0224	99	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0038 U	0.0202	0.0207	103	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0048 U	0.0214	0.0214	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0038 U	0.0208	0.0206	99	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U	0.0217	0.0239	110	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0038 U	0.0211	0.0214	101	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0038 U	0.0219	0.0257	118	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0038 U	0.0219	0.0212	97	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0048 U	0.022	0.0217	98	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.019 U	0.0852	0.0906	106	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U	0.0864	0.0876	101	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U	0.0873	0.0951	109	40-150
754-91-6	PFOSA	0.0038 U	0.0227	0.0227	100	40-150
31506-32-8	MeFOSA	0.0077 U	0.0455	0.0403	89	40-150
4151-50-2	EtFOSA	0.0077 U	0.0455	0.0461	101	40-150
2355-31-9	MeFOSAA	0.0048 U	0.0227	0.0235	103	40-150
2991-50-6	EtFOSAA	0.0048 U	0.0227	0.0207	91	40-150
24448-09-7	MeFOSE	0.038 U	0.114	0.0906	80	40-150
1691-99-2	EtFOSE	0.038 U	0.114	0.106	93	40-150
13252-13-6	HFPO-DA (GenX)	0.0038 U	0.0455	0.0456	100	40-150
919005-14-4	ADONA	0.0077 U	0.043	0.0481	112	40-150
377-73-1	PFMPA	0.0077 U	0.0455	0.0472	104	40-150
863090-89-5	PFMBA	0.0077 U	0.0455	0.0463	102	40-150
151772-58-6	NFDHA	0.0077 U	0.0455	0.0453	100	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0077 U	0.0425	0.0436	103	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0077 U	0.043	0.0404	94	40-150

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MS	4Q54889.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-2	4Q54888.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	FC11715-2 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0077 U	0.0405	0.0430	106	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019 U	0.114	0.0975	86	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.096 U	0.568	0.578	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.096 U	0.568	0.582	102	40-150

CAS No.	ID Standard Recoveries	MS	FC11715-2	Limits
	13C4-PFBA	106%	105%	20-150%
	13C5-PFPeA	107%	104%	20-150%
	13C5-PFHxA	103%	103%	20-150%
	13C4-PFHpA	105%	106%	20-150%
	13C8-PFOA	108%	101%	20-150%
	13C9-PFNA	101%	96%	20-150%
	13C6-PFDA	102%	106%	20-150%
	13C7-PFUnDA	101%	98%	20-150%
	13C2-PFDoDA	90%	91%	20-150%
	13C2-PFTeDA	89%	86%	20-150%
	13C3-PFBS	105%	99%	20-150%
	13C3-PFHxS	104%	101%	20-150%
	13C8-PFOS	94%	92%	20-150%
	13C8-FOSA	86%	76%	20-150%
	d3-MeFOSA	93%	76%	20-150%
	d5-EtFOSA	91%	89%	20-150%
	d3-MeFOSAA	103%	100%	20-150%
	d5-EtFOSAA	104%	96%	20-150%
	d7-MeFOSE	73%	63%	20-150%
	d9-EtFOSE	92%	84%	20-150%
	13C2-4:2FTS	97%	95%	20-180%
	13C2-6:2FTS	108%	101%	20-180%
	13C2-8:2FTS	103%	102%	20-180%
	13C3-HFPO-DA	102%	96%	20-150%

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-DUP	4Q54891.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-3	4Q54890.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	FC11715-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.016 U	ND		nc		30
2706-90-3	Perfluoropentanoic acid	0.0078 U	ND		nc		30
307-24-4	Perfluorohexanoic acid	0.0039 U	ND		nc		30
375-85-9	Perfluoroheptanoic acid	0.0039 U	ND		nc		30
335-67-1	Perfluorooctanoic acid	0.0039 U	ND		nc		30
375-95-1	Perfluorononanoic acid	0.0039 U	ND		nc		30
335-76-2	Perfluorodecanoic acid	0.0039 U	ND		nc		30
2058-94-8	Perfluoroundecanoic acid	0.0039 U	ND		nc		30
307-55-1	Perfluorododecanoic acid	0.0039 U	ND		nc		30
72629-94-8	Perfluorotridecanoic acid	0.0039 U	ND		nc		30
376-06-7	Perfluorotetradecanoic acid	0.0039 U	ND		nc		30
375-73-5	Perfluorobutanesulfonic acid	0.0039 U	ND		nc		30
2706-91-4	Perfluoropentanesulfonic acid	0.0049 U	ND		nc		30
355-46-4	Perfluorohexanesulfonic acid	0.0039 U	ND		nc		30
375-92-8	Perfluoroheptanesulfonic acid	0.0039 U	ND		nc		30
1763-23-1	Perfluorooctanesulfonic acid	0.0039 U	ND		nc		30
68259-12-1	Perfluorononanesulfonic acid	0.0039 U	ND		nc		30
335-77-3	Perfluorodecanesulfonic acid	0.0039 U	ND		nc		30
79780-39-5	Perfluorododecanesulfonic aci	0.0049 U	ND		nc		30
757124-72-44:2	Fluorotelomer sulfonate	0.020 U	ND		nc		30
27619-97-2	6:2 Fluorotelomer sulfonate	0.020 U	ND		nc		30
39108-34-4	8:2 Fluorotelomer sulfonate	0.020 U	ND		nc		30
754-91-6	PFOSA	0.0039 U	ND		nc		30
31506-32-8	MeFOSA	0.0078 U	ND		nc		30
4151-50-2	EtFOSA	0.0078 U	ND		nc		30
2355-31-9	MeFOSAA	0.0049 U	ND		nc		30
2991-50-6	EtFOSAA	0.0049 U	ND		nc		30
24448-09-7	MeFOSE	0.039 U	ND		nc		30
1691-99-2	EtFOSE	0.039 U	ND		nc		30
13252-13-6	HFPO-DA (GenX)	0.0039 U	ND		nc		30
919005-14-4	ADONA	0.0078 U	ND		nc		30
377-73-1	PFMPA	0.0078 U	ND		nc		30
863090-89-5	PFMBA	0.0078 U	ND		nc		30
151772-58-6	NFDHA	0.0078 U	ND		nc		30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0078 U	ND		nc		30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0078 U	ND		nc		30

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: FC11715  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-DUP	4Q54891.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-3	4Q54890.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC11715-1, FC11715-2, FC11715-3, FC11715-4

CAS No.	Compound	FC11715-3 ug/l	DUP Q ug/l	Q RPD	Limits
113507-82-7	PFEESA	0.0078 U	ND	nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.020 U	ND	nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.098 U	ND	nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.098 U	ND	nc	30

CAS No.	ID Standard Recoveries	DUP	FC11715-3	Limits
	13C4-PFBA	110%	111%	20-150%
	13C5-PFPeA	106%	109%	20-150%
	13C5-PFHxA	108%	107%	20-150%
	13C4-PFHpA	107%	110%	20-150%
	13C8-PFOA	106%	106%	20-150%
	13C9-PFNA	102%	103%	20-150%
	13C6-PFDA	97%	99%	20-150%
	13C7-PFUnDA	99%	100%	20-150%
	13C2-PFDoDA	84%	86%	20-150%
	13C2-PFTeDA	83%	85%	20-150%
	13C3-PFBS	107%	104%	20-150%
	13C3-PFHxS	114%	107%	20-150%
	13C8-PFOS	108%	94%	20-150%
	13C8-FOSA	75%	79%	20-150%
	d3-MeFOSA	83%	82%	20-150%
	d5-EtFOSA	91%	90%	20-150%
	d3-MeFOSAA	100%	95%	20-150%
	d5-EtFOSAA	97%	90%	20-150%
	d7-MeFOSE	62%	65%	20-150%
	d9-EtFOSE	83%	85%	20-150%
	13C2-4:2FTS	100%	86%	20-180%
	13C2-6:2FTS	111%	111%	20-180%
	13C2-8:2FTS	106%	109%	20-180%
	13C3-HFPO-DA	101%	106%	20-150%

\* = Outside of Control Limits.