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: FC9496

Sampling Date: 09/08/23

Report to:

AECOM, Inc
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Denver, CO 80237
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Total number of pages in report: 56

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: 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: FC9496

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC9496-1	09/08/23	09:20	CWTN	09/13/23	AQ	Ground Water	AF-RHMW04-WGN01LF-2309
FC9496-2	09/08/23	10:30	MGMU	09/13/23	AQ	Ground Water	AF-RHMW17S-WGN01LF-2309
FC9496-3	09/08/23	10:45	MGMU	09/13/23	AQ	Equipment Blank	AF-RHMW17S-WQEB01-2309
FC9496-4	09/08/23	11:50	MGMU	09/13/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2309
FC9496-4D	09/08/23	11:50	MGMU	09/13/23	AQ	Water Dup/MSD	AF-RHMW17D-WGN01LF-2309
FC9496-4S	09/08/23	11:50	MGMU	09/13/23	AQ	Water Matrix Spike	AF-RHMW17D-WGN01LF-2309
FC9496-5	09/08/23	11:20	MGMU	09/13/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2309
FC9496-6	09/08/23	12:10	CWTN	09/13/23	AQ	Ground Water	AF-RHMW06-WGN01LF-2309
FC9496-7	09/08/23	13:45	MG	09/13/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2309

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC9496

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 9/20/2023 10:59:08

On 09/13/2023, 5 Sample(s), 1 Equipment Blank, 1 Field Blank were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC9496 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:** OP99007

Sample(s) FC9496-1MS, FC9496-2DUP were used as the QC samples indicated.

RPD(s) for Duplicate for Perfluorooctanesulfonic acid, Perfluorooctanoic acid are outside control limits for sample OP99007-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FC9496-4 have surrogates outside control limits.

FC9496-4 for 13C4-PFBA: Outside control limits.

Matrix: AQ **Batch ID:** OP99024

Sample(s) FC9496-4MS, FC9496-4MSD 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: FC9496
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 09/08/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC9496-1	**AF-RHMW04-WGN01LF-2309**					
No hits reported in this sample.						
FC9496-2	**AF-RHMW17S-WGN01LF-2309**					
Perfluorobutanoic acid		9.6 J	15	3.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		0.97 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid		1.0 J	3.8	0.96	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid		0.50 J	3.8	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid		1.2 J	3.8	1.9	ng/l	EPA DRAFT 1633
FC9496-3	**AF-RHMW17S-WQEB01-2309**					
No hits reported in this sample.						
FC9496-4	**AF-RHMW17D-WGN01LF-2309**					
No hits reported in this sample.						
FC9496-5	**AF-RHMW17D-WQFB01-2309**					
No hits reported in this sample.						
FC9496-6	**AF-RHMW06-WGN01LF-2309**					
No hits reported in this sample.						
FC9496-7	**AF-RHMW17-WGN01LF-2309**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: AF-RHMW04-WGN01LF-2309
Lab Sample ID: FC9496-1
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 09/08/23
Date Received: 09/13/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24602.D	1	09/18/23 13:39	MV	09/14/23 10:00	OP99007	S6Q353
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.85	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	0.91 U	3.6	0.91	0.45	ng/l	
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	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	0.64	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	0.49	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	
PERFLUOROOCTANE 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

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2309		
Lab Sample ID:	FC9496-1	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE 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	119%		20-150%
	13C5-PFPeA	99%		20-150%
	13C5-PFHxA	111%		20-150%
	13C4-PFHpA	118%		20-150%
	13C8-PFOA	120%		20-150%
	13C9-PFNA	143%		20-150%
	13C6-PFDA	117%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	94%		20-150%
	13C3-PFBS	131%		20-150%
	13C3-PFHxS	119%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW04-WGN01LF-2309		
Lab Sample ID:	FC9496-1	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	111%		20-150%
	13C8-FOSA	86%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	90%		20-150%
	d3-MeFOSAA	105%		20-150%
	d5-EtFOSAA	91%		20-150%
	d7-MeFOSE	79%		20-150%
	d9-EtFOSE	86%		20-150%
	13C2-4:2FTS	119%		20-180%
	13C2-6:2FTS	115%		20-180%
	13C2-8:2FTS	107%		20-180%
	13C3-HFPO-DA	110%		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-RHMW17S-WGN01LF-2309
Lab Sample ID: FC9496-2 **Date Sampled:** 09/08/23
Matrix: AQ - Ground Water **Date Received:** 09/13/23
Method: EPA DRAFT 1633 EPA 1633 DRAFT **Percent Solids:** n/a
Project: N6274223F0104 RH Fire Suppression System

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24604.D	1	09/18/23 14:07	MV	09/14/23 10:00	OP99007	S6Q353
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	9.6	15	3.8	1.8	ng/l	J
2706-90-3	Perfluoropentanoic acid	1.9 U	7.7	1.9	0.90	ng/l	
307-24-4	Perfluorohexanoic acid	0.97	3.8	1.9	0.48	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.9 U	3.8	1.9	0.48	ng/l	
335-67-1	Perfluorooctanoic acid	1.0	3.8	0.96	0.48	ng/l	J
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	0.50	3.8	1.9	0.48	ng/l	J
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	1.2	3.8	1.9	0.52	ng/l	J
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	
PERFLUOROOCTANE 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

Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2309		
Lab Sample ID:	FC9496-2	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	
PERFLUOROOCTANE 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
	13C4-PFBA	54%		20-150%
	13C5-PFPeA	84%		20-150%
	13C5-PFHxA	94%		20-150%
	13C4-PFHpA	98%		20-150%
	13C8-PFOA	108%		20-150%
	13C9-PFNA	117%		20-150%
	13C6-PFDA	101%		20-150%
	13C7-PFUnDA	86%		20-150%
	13C2-PFDoDA	85%		20-150%
	13C2-PFTeDA	70%		20-150%
	13C3-PFBS	112%		20-150%
	13C3-PFHxS	103%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2309		
Lab Sample ID:	FC9496-2	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	85%		20-150%
	13C8-FOSA	73%		20-150%
	d3-MeFOSA	55%		20-150%
	d5-EtFOSA	58%		20-150%
	d3-MeFOSAA	88%		20-150%
	d5-EtFOSAA	75%		20-150%
	d7-MeFOSE	57%		20-150%
	d9-EtFOSE	62%		20-150%
	13C2-4:2FTS	96%		20-180%
	13C2-6:2FTS	92%		20-180%
	13C2-8:2FTS	87%		20-180%
	13C3-HFPO-DA	93%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2309		
Lab Sample ID:	FC9496-3	**Date Sampled:**	09/08/23
Matrix:	AQ - Equipment Blank	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24606.D	1	09/18/23 14:36	MV	09/14/23 10:00	OP99007	S6Q353
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.85	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	0.91 U	3.6	0.91	0.45	ng/l	
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	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	0.64	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	0.49	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	
PERFLUOROOCTANE 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	

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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-RHMW17S-WQEB01-2309		
Lab Sample ID:	FC9496-3	**Date Sampled:**	09/08/23
Matrix:	AQ - Equipment Blank	**Date Received:**	09/13/23
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	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE 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	93%		20-150%
	13C5-PFHxA	101%		20-150%
	13C4-PFHpA	107%		20-150%
	13C8-PFOA	115%		20-150%
	13C9-PFNA	133%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	88%		20-150%
	13C2-PFDoDA	90%		20-150%
	13C2-PFTeDA	88%		20-150%
	13C3-PFBS	117%		20-150%
	13C3-PFHxS	108%		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-RHMW17S-WQEB01-2309		
Lab Sample ID:	FC9496-3	**Date Sampled:**	09/08/23
Matrix:	AQ - Equipment Blank	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	109%		20-150%
	13C8-FOSA	83%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	77%		20-150%
	d3-MeFOSAA	97%		20-150%
	d5-EtFOSAA	82%		20-150%
	d7-MeFOSE	73%		20-150%
	d9-EtFOSE	76%		20-150%
	13C2-4:2FTS	109%		20-180%
	13C2-6:2FTS	105%		20-180%
	13C2-8:2FTS	100%		20-180%
	13C3-HFPO-DA	103%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2309		
Lab Sample ID:	FC9496-4	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24607.D	1	09/18/23 14:50	MV	09/14/23 10:00	OP99007	S6Q353
Run #2	4Q50750.D	1	09/18/23 19:22	AL	09/15/23 08:30	OP99024	S4Q742

	Initial Volume	Final Volume
Run #1	520 ml	5.0 ml
Run #2	65.0 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	31 U [a]	120	31	15	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	
PERFLUOROOCTANE 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	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
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Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2309		
Lab Sample ID:	FC9496-4	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	4.8	3.8	0.96	ng/l	
2991-50-6	EtFOSAA	3.8 U	4.8	3.8	1.3	ng/l	
PERFLUOROOCTANE 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
	13C4-PFBA	4% [b]	112%	20-150%
	13C5-PFPeA	26%	108%	20-150%
	13C5-PFHxA	96%	107%	20-150%
	13C4-PFHpA	121%	108%	20-150%
	13C8-PFOA	119%	103%	20-150%
	13C9-PFNA	133%	103%	20-150%
	13C6-PFDA	124%	104%	20-150%
	13C7-PFUnDA	104%	108%	20-150%
	13C2-PFDoDA	96%	96%	20-150%
	13C2-PFTeDA	69%	93%	20-150%
	13C3-PFBS	108%	107%	20-150%
	13C3-PFHxS	116%	106%	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-RHMW17D-WGN01LF-2309		
Lab Sample ID:	FC9496-4	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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%	93%	20-150%
	13C8-FOSA	78%	78%	20-150%
	d3-MeFOSA	73%	71%	20-150%
	d5-EtFOSA	79%	69%	20-150%
	d3-MeFOSAA	118%	100%	20-150%
	d5-EtFOSAA	114%	104%	20-150%
	d7-MeFOSE	69%	85%	20-150%
	d9-EtFOSE	72%	92%	20-150%
	13C2-4:2FTS	178%	108%	20-180%
	13C2-6:2FTS	108%	97%	20-180%
	13C2-8:2FTS	110%	84%	20-180%
	13C3-HFPO-DA	87%	110%	20-150%

(a) Result is from Run# 2

(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value

LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank

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

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2309		
Lab Sample ID:	FC9496-5	**Date Sampled:**	09/08/23
Matrix:	AQ - Field Blank Water	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24608.D	1	09/18/23 15:05	MV	09/14/23 10:00	OP99007	S6Q353
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

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Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2309		
Lab Sample ID:	FC9496-5	**Date Sampled:**	09/08/23
Matrix:	AQ - Field Blank Water	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l	
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	113%		20-150%
	13C5-PFPeA	97%		20-150%
	13C5-PFHxA	103%		20-150%
	13C4-PFHpA	116%		20-150%
	13C8-PFOA	111%		20-150%
	13C9-PFNA	117%		20-150%
	13C6-PFDA	118%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	93%		20-150%
	13C2-PFTeDA	79%		20-150%
	13C3-PFBS	125%		20-150%
	13C3-PFHxS	109%		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-RHMW17D-WQFB01-2309		
Lab Sample ID:	FC9496-5	**Date Sampled:**	09/08/23
Matrix:	AQ - Field Blank Water	**Date Received:**	09/13/23
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	97%		20-150%
	13C8-FOSA	80%		20-150%
	d3-MeFOSA	75%		20-150%
	d5-EtFOSA	83%		20-150%
	d3-MeFOSAA	97%		20-150%
	d5-EtFOSAA	85%		20-150%
	d7-MeFOSE	77%		20-150%
	d9-EtFOSE	76%		20-150%
	13C2-4:2FTS	115%		20-180%
	13C2-6:2FTS	109%		20-180%
	13C2-8:2FTS	100%		20-180%
	13C3-HFPO-DA	111%		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-RHMW06-WGN01LF-2309
Lab Sample ID: FC9496-6
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 09/08/23
Date Received: 09/13/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24611.D	1	09/18/23 15:48	MV	09/14/23 10:00	OP99007	S6Q353
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.85	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	0.91 U	3.6	0.91	0.45	ng/l	
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	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	0.64	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	0.49	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	
PERFLUOROOCTANE 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

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2309		
Lab Sample ID:	FC9496-6	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE 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	125%		20-150%
	13C5-PFPeA	117%		20-150%
	13C5-PFHxA	127%		20-150%
	13C4-PFHpA	132%		20-150%
	13C8-PFOA	126%		20-150%
	13C9-PFNA	146%		20-150%
	13C6-PFDA	123%		20-150%
	13C7-PFUnDA	98%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	92%		20-150%
	13C3-PFBS	138%		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

Report of Analysis

Client Sample ID:	AF-RHMW06-WGN01LF-2309		
Lab Sample ID:	FC9496-6	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	107%		20-150%
	13C8-FOSA	85%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	85%		20-150%
	d3-MeFOSAA	101%		20-150%
	d5-EtFOSAA	96%		20-150%
	d7-MeFOSE	75%		20-150%
	d9-EtFOSE	77%		20-150%
	13C2-4:2FTS	123%		20-180%
	13C2-6:2FTS	110%		20-180%
	13C2-8:2FTS	112%		20-180%
	13C3-HFPO-DA	132%		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-RHMW17-WGN01LF-2309		
Lab Sample ID:	FC9496-7	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q24612.D	1	09/18/23 16:02	MV	09/14/23 10:00	OP99007	S6Q353
Run #2							

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

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.5 U	14	3.5	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.0	1.8	0.82	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
335-67-1	Perfluorooctanoic acid	0.88 U	3.5	0.88	0.44	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.5	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.5	1.8	0.53	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.5	1.8	0.74	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.5	1.8	0.44	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.5 U	4.4	3.5	0.98	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.5	1.8	0.61	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.5	1.8	0.44	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.5	1.8	0.47	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.5	1.8	0.50	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.5	1.8	0.56	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.5 U	4.4	3.5	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.0 U	18	7.0	2.8	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.0 U	18	7.0	3.6	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.5	1.8	0.59	ng/l	
31506-32-8	MeFOSA	3.5 U	7.0	3.5	0.88	ng/l	
4151-50-2	EtFOSA	3.5 U	7.0	3.5	0.88	ng/l	

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

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2309		
Lab Sample ID:	FC9496-7	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	35	18	3.8	ng/l	
1691-99-2	EtFOSE	18 U	35	18	6.5	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.5	1.8	0.88	ng/l	
919005-14-4	ADONA	3.5 U	7.0	3.5	1.6	ng/l	
377-73-1	PFMPA	1.8 U	7.0	1.8	0.88	ng/l	
863090-89-5	PFMBA	3.5 U	7.0	3.5	1.0	ng/l	
151772-58-6	NFDHA	3.5 U	7.0	3.5	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.5 U	7.0	3.5	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.5 U	7.0	3.5	1.5	ng/l	
113507-82-7	PFEESA	1.8 U	7.0	1.8	0.68	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	8.8 U	18	8.8	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	88	18	7.7	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	88	18	6.9	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%		20-150%
	13C5-PFPeA	93%		20-150%
	13C5-PFHxA	100%		20-150%
	13C4-PFHpA	111%		20-150%
	13C8-PFOA	113%		20-150%
	13C9-PFNA	130%		20-150%
	13C6-PFDA	123%		20-150%
	13C7-PFUnDA	102%		20-150%
	13C2-PFDoDA	99%		20-150%
	13C2-PFTeDA	89%		20-150%
	13C3-PFBS	124%		20-150%
	13C3-PFHxS	111%		20-150%

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

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2309		
Lab Sample ID:	FC9496-7	**Date Sampled:**	09/08/23
Matrix:	AQ - Ground Water	**Date Received:**	09/13/23
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	108%		20-150%
	13C8-FOSA	79%		20-150%
	d3-MeFOSA	63%		20-150%
	d5-EtFOSA	74%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	81%		20-150%
	d7-MeFOSE	65%		20-150%
	d9-EtFOSE	67%		20-150%
	13C2-4:2FTS	115%		20-180%
	13C2-6:2FTS	109%		20-180%
	13C2-8:2FTS	102%		20-180%
	13C3-HFPO-DA	105%		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

FC9496

C0C #: 2309AFSG08

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: Chris Warneck **Sampler 2:** Tyler Nishikawa

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu **State** Hawaii
Project # CTO CVI23F0104
Fax #
Client Purchase Order # 151253

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	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW04-WGN01LF-2309	9/8/23	0920	CW/MM/TL	GW	3		X								X	

INITIAL ASSESSMENT L.D.
9/8/23
LABEL VERIFICATION

Turnaround Time (Business days)

10 Day (Business)
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Approved By: / Date:
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
United AWB: 016-48963456

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	Tyler Nishikawa AECOM	9/9/23 1300	2 Ellie Shimatsu AECOM	3 Ellie Shimatsu/AECOM	09/11/23 0800	4 UC
5	UC		6 09/13/23 0800	7		8

PFAS_COCs_ALL_09052023.xls Rev 031318

4.6 FR#1

FC9496: Chain of Custody
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SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
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FC9496
SGS - ORLANDO JOB # :

COC #: 2309AFSG12
PAGE 1 OF 1

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information	Project Information
Company Name: AECOM	**Project Name:** N6274223F0104 RH Fire Suppression System
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 #** CTO CVI23F0104
Project Manager: Watson Tanji **Email:** watson.tanji@aecom.com	
Phone #: 303-796-4624 / 808-954-4512	**Fax #**
Sampler(s) Name(s) (Printed)	**Client Purchase Order #** 151253
Sampler 1: **Sampler 2:**	

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	NACH-ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
2	AF-RHMW17S-WGN01LF-2309	9/8/23	1030	ML,MU	GW	3		X								X	
3	AF-RHMW17S-WQEB01-2309	9/8/23	1045	ML,MU	WW	3		X								X	

EM 9/8/23

INITIAL ASSESSMENT

LABEL VERIFICATION

Turnaround Time (Business days)	Data Deliverable Information	Comments / Remarks
10 Day (Business) Approved By: / Date:	☐ COMMERCIAL "A" (RESULTS ONLY)	EDMS upload database: JBPHE
7 Day	☐ COMMERCIAL "B" (RESULTS PLUS QC)	EDMS Coverage: AFFF Assessment Sampling GW
☐ 5 Day	☐ REDT1 (EPA LEVEL 3)	United AWB: 016-48963456
3 Day *RUSH*	☒ FULLT1 (EPA LEVEL 4)	
2 Day *RUSH*	☒ EDD'S	
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
1		EM 9/8/23 1630	Eli Martin/AECOM	3 Eli Martin/AECOM	9/11/23 1000	4 UC
5	UC		6 09/13/23 0800	7		8

PFAS_COCs_ALL_09052023.xls Rev 031318

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

FC9496
SGS - ORLANDO JOB #:

COC #: 2309AFSG11
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: Mariah G. Sampler 2: Max Vilca

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # CTO CVI23F0104
Fax #
Client Purchase Order # 151253

Analytical Information

*PFAS EPA Draft 1633

MA 9/8/23

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	*PFAS EPA Draft 1633	LAB USE ONLY
4	AF-RHMW17D-WGN01LF-2309	9.8.23	1150	MA	GW	7		X								X	
5	AF-RHMW17D-WQFB01-2309	9.8.23	1120	MA	WW	3		X								X	

INITIAL ASSESSMENT 2D.

LABEL VERIFICATION

MA 9/8/23

Turnaround Time (Business days)

10 Day (Business)
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Approved By: / Date:
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
*Extra bottleware is to be used for an MS/MSD
United AWB: 016-4896 3456

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	Mariah Gascue AECOM	9/8/23 1540	2 Alex Edmonds	3 Alex Edmonds/AECOM	9/11/23 1000	4 UC
5	UC		6	7		8

Lab Use Only: Cooler Temperature (s) Celsius (corrected): 4.0 (4.1) IR#14

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

PFAS_COCs_ALL_09052023.xls Rev 031318

FC9496: Chain of Custody
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SGS North America Inc - Orlando
Chain of Custody

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

FC9496

SGS - ORLANDO JOB #:

COC #: 2309AFSG09

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: Chris Womack **Sampler 2:** Tyler Nishkian

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu **State** Hawaii
Project # CTO CVI23F0104
Fax #
Client Purchase Order # 151253

Analytical Information

PFAS EPA Draft 1633

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
6	AF-RHMW06-WGN01LF-2309	9/8/23	1210	CW, NW	GW	3		X								X	

INITIAL ASSESSMENT

LABEL VERIFICATION

9/8/23

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
UmHCV AWBi 016-4896345b

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	AECOM	9/8/23 1400	2 Ellie Shimatsu AECOM	3 Ellie Shimatsu AECOM	9/11/23 1000	4 UC
5	Relinquished by/Affiliation UC	Date Time:	6 09/13/23 0800	7	Date Time:	8

PFAS_COCs_ALL_09052023.xls Rev 031318

FC9496: Chain of Custody
Page 4 of 6

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

FC9496
SGS - ORLANDO JOB # :

COC #: 2309AFSG10
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: Sampler 2:

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # CTO CVI23F0104
Fax #
Client Purchase Order # 151253

Analytical Information

PFAS EPA Draft 1633

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
7	AF-RHMW17-WGN01LF-2309	9/8/23	1345	MG	GW	3		X								X	

EM 9/11/23
FINAL ASSESSMENT Z.D.
LEVEL VERIFICATION ZB

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
United AWB 016-48963456

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		9/8/23 1630	2 Alex Edmonds/AECOM	3 Alex Edmonds	9/11/23 1000	4 UC
5	Relinquished by/Affiliation UC	Date Time:	6 09/13/23 0800	7	Date Time:	8

PFAS_COCs_ALL_09052023.xls Rev 031318

FC9496: Chain of Custody
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SGS Sample Receipt Summary

Job Number: fc9496 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression Sys

Date / Time Received: 9/13/2023 8:00:00 AM **Delivery Method:** United Cargo/Airspace **Airbill #'s:** United Cargo AWB #: 016-48963456

Cooler Temps (Raw Measured) °C: Cooler 1: (4.6);

Cooler Temps (Corrected) °C: Cooler 1: (4.4);

Cooler Informatio	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. Suffiient volume/containers recv'd for analysi	☑		☐	
4. Condition of sample:	Intact			
5. Sample recv'd within HT	☑		☐	
6. Dates/Times/IDs on COC match sample labe	☑		☐	
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

Test Strip Lot #s: pH 0-3: _____ pH 10-12: _____

Residual Chlorine Test Strip Lot _____

Number of Lab Filtered Metals

Other: (Specify) _____ _____

Comments

SM001
Rev. Date 05/04/17

Technician: SHAYLAP Date: 9/13/2023 9:36:36 AM Reviewer: ZB Date: 09/13/23

FC9496: Chain of Custody
Page 6 of 6

QC Evaluation: DOD QSM5.x Limits

Job Number: FC9496
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 09/08/23

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 FC9496

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: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q353-IBLK	6Q24596.D	1	09/18/23	MV	n/a	n/a	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

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: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q353-IBLK	6Q24596.D	1	09/18/23	MV	n/a	n/a	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

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	102%	20-150%
	13C5-PFPeA	87%	20-150%
	13C5-PFHxA	91%	20-150%
	13C4-PFHpA	99%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	111%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	98%	20-150%
	13C2-PFDoDA	99%	20-150%
	13C2-PFTeDA	108%	20-150%
	13C3-PFBS	108%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	90%	20-150%
	d3-MeFOSAA	88%	20-150%
	d5-EtFOSAA	81%	20-150%
	13C2-4:2FTS	106%	20-180%
	13C2-6:2FTS	86%	20-180%
	13C2-8:2FTS	81%	20-180%

Instrument Blank

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q742-IBLK	4Q50729.D	1	09/18/23	AL	n/a	n/a	S4Q742

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

FC9496-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	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	104%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	106%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	104%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	113%	20-150%
	13C3-PFBS	95%	20-150%
	13C3-PFHxS	97%	20-150%
	13C8-PFOS	108%	20-150%
	13C8-FOSA	104%	20-150%
	d3-MeFOSAA	94%	20-150%
	d5-EtFOSAA	98%	20-150%
	13C2-4:2FTS	92%	20-180%
	13C2-6:2FTS	91%	20-180%
	13C2-8:2FTS	96%	20-180%

Continuing Calibration Blank

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q353-ICCB	6Q24610.D	1	09/18/23	MV	n/a	n/a	S6Q353

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

FC9496-6, FC9496-7

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: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q353-ICCB	6Q24610.D	1	09/18/23	MV	n/a	n/a	S6Q353

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

FC9496-6, FC9496-7

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	79%	20-150%
	13C5-PFHxA	90%	20-150%
	13C4-PFHpA	98%	20-150%
	13C8-PFOA	104%	20-150%
	13C9-PFNA	121%	20-150%
	13C6-PFDA	116%	20-150%
	13C7-PFUnDA	94%	20-150%
	13C2-PFDoDA	94%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	107%	20-150%
	13C3-PFHxS	96%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	100%	20-150%
	d3-MeFOSAA	98%	20-150%
	d5-EtFOSAA	97%	20-150%
	13C2-4:2FTS	100%	20-180%
	13C2-6:2FTS	101%	20-180%
	13C2-8:2FTS	89%	20-180%

Continuing Calibration Blank

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q742-ICCB	4Q50745.D	1	09/18/23	AL	n/a	n/a	S4Q742

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

FC9496-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	98%	20-150%
	13C5-PFHxA	101%	20-150%
	13C4-PFHpA	101%	20-150%
	13C8-PFOA	97%	20-150%
	13C9-PFNA	102%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	104%	20-150%
	13C2-PFDoDA	100%	20-150%
	13C2-PFTeDA	111%	20-150%
	13C3-PFBS	95%	20-150%
	13C3-PFHxS	96%	20-150%
	13C8-PFOS	103%	20-150%
	13C8-FOSA	103%	20-150%
	d3-MeFOSAA	102%	20-150%
	d5-EtFOSAA	101%	20-150%
	13C2-4:2FTS	102%	20-180%
	13C2-6:2FTS	86%	20-180%
	13C2-8:2FTS	89%	20-180%

Method Blank Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-MB	6Q24601.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

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: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-MB	6Q24601.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

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	111%	20-150%
	13C5-PFPeA	94%	20-150%
	13C5-PFHxA	99%	20-150%
	13C4-PFHpA	107%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	125%	20-150%
	13C6-PFDA	132%	20-150%
	13C7-PFUnDA	106%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	120%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	65%	20-150%
	d3-MeFOSA	60%	20-150%
	d5-EtFOSA	71%	20-150%
	d3-MeFOSAA	96%	20-150%
	d5-EtFOSAA	93%	20-150%
	d7-MeFOSE	59%	20-150%
	d9-EtFOSE	67%	20-150%
	13C2-4:2FTS	119%	20-180%
	13C2-6:2FTS	101%	20-180%
	13C2-8:2FTS	111%	20-180%
	13C3-HFPO-DA	107%	20-150%

Method Blank Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99024-MB	4Q50748.D	1	09/18/23	AL	09/15/23	OP99024	S4Q742

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

FC9496-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	145%	20-150%
	13C5-PFPeA	142%	20-150%
	13C5-PFHxA	141%	20-150%
	13C4-PFHpA	139%	20-150%
	13C8-PFOA	137%	20-150%
	13C9-PFNA	144%	20-150%
	13C6-PFDA	137%	20-150%
	13C7-PFUnDA	137%	20-150%
	13C2-PFDoDA	125%	20-150%
	13C2-PFTeDA	121%	20-150%
	13C3-PFBS	140%	20-150%
	13C3-PFHxS	132%	20-150%
	13C8-PFOS	148%	20-150%
	13C8-FOSA	101%	20-150%
	d3-MeFOSA	94%	20-150%
	d5-EtFOSA	99%	20-150%
	d3-MeFOSAA	133%	20-150%
	d5-EtFOSAA	133%	20-150%
	d7-MeFOSE	109%	20-150%
	d9-EtFOSE	119%	20-150%
	13C2-4:2FTS	135%	20-180%
	13C2-6:2FTS	138%	20-180%
	13C2-8:2FTS	125%	20-180%
	13C3-HFPO-DA	144%	20-150%

Blank Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-LLBS	6Q24600.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0331	110	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0162	108	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0074	99	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0077	103	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0066	88	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0068	91	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0078	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0077	103	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0074	99	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0066	88	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0073	97	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0069	104	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0074	105	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0081	118	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0071	99	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0067	96	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0070	97	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0065	90	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0056	77	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0297	106	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0305	107	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0284	99	40-150
754-91-6	PFOSA	0.0075	0.0073	97	40-150
31506-32-8	MeFOSA	0.015	0.0172	115	40-150
4151-50-2	EtFOSA	0.015	0.0138	92	40-150
2355-31-9	MeFOSAA	0.0075	0.0081	108	40-150
2991-50-6	EtFOSAA	0.0075	0.0096	128	40-150
24448-09-7	MeFOSE	0.0375	0.0376	100	40-150
1691-99-2	EtFOSE	0.0375	0.0378	101	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0171	114	40-150
919005-14-4	ADONA	0.0142	0.0158	111	40-150
377-73-1	PFMPA	0.015	0.0177	118	40-150
863090-89-5	PFMBA	0.015	0.0172	115	40-150
151772-58-6	NFDHA	0.015	0.0157	105	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0147	105	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0134	95	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-LLBS	6Q24600.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0146	109	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0320	85	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.197	105	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.199	106	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	105%	20-150%
	13C5-PFPeA	88%	20-150%
	13C5-PFHxA	95%	20-150%
	13C4-PFHpA	105%	20-150%
	13C8-PFOA	101%	20-150%
	13C9-PFNA	124%	20-150%
	13C6-PFDA	111%	20-150%
	13C7-PFUnDA	92%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	100%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	73%	20-150%
	d3-MeFOSA	60%	20-150%
	d5-EtFOSA	71%	20-150%
	d3-MeFOSAA	96%	20-150%
	d5-EtFOSAA	82%	20-150%
	d7-MeFOSE	62%	20-150%
	d9-EtFOSE	67%	20-150%
	13C2-4:2FTS	107%	20-180%
	13C2-6:2FTS	101%	20-180%
	13C2-8:2FTS	93%	20-180%
	13C3-HFPO-DA	98%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99024-LLBS	4Q50747.D	1	09/18/23	AL	09/15/23	OP99024	S4Q742

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

FC9496-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0268	89	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	125%	20-150%
	13C5-PFPeA	121%	20-150%
	13C5-PFHxA	123%	20-150%
	13C4-PFHpA	120%	20-150%
	13C8-PFOA	119%	20-150%
	13C9-PFNA	127%	20-150%
	13C6-PFDA	129%	20-150%
	13C7-PFUnDA	129%	20-150%
	13C2-PFDoDA	113%	20-150%
	13C2-PFTeDA	114%	20-150%
	13C3-PFBS	118%	20-150%
	13C3-PFHxS	109%	20-150%
	13C8-PFOS	112%	20-150%
	13C8-FOSA	97%	20-150%
	d3-MeFOSA	85%	20-150%
	d5-EtFOSA	87%	20-150%
	d3-MeFOSAA	104%	20-150%
	d5-EtFOSAA	112%	20-150%
	d7-MeFOSE	102%	20-150%
	d9-EtFOSE	104%	20-150%
	13C2-4:2FTS	112%	20-180%
	13C2-6:2FTS	116%	20-180%
	13C2-8:2FTS	115%	20-180%
	13C3-HFPO-DA	122%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-BS	6Q24599.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.102	102	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0503	101	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0230	92	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0239	96	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0210	84	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0195	78	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0251	100	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0227	91	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0233	93	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0205	82	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0233	93	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0197	89	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0242	103	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0230	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0249	105	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0220	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0263	109	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0229	95	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0196	81	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0958	102	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.101	106	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0927	97	40-150
754-91-6	PFOSA	0.025	0.0219	88	40-150
31506-32-8	MeFOSA	0.05	0.0499	100	40-150
4151-50-2	EtFOSA	0.05	0.0460	92	40-150
2355-31-9	MeFOSAA	0.025	0.0238	95	40-150
2991-50-6	EtFOSAA	0.025	0.0277	111	40-150
24448-09-7	MeFOSE	0.125	0.115	92	40-150
1691-99-2	EtFOSE	0.125	0.114	91	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0526	105	40-150
919005-14-4	ADONA	0.0473	0.0522	110	40-150
377-73-1	PFMPA	0.05	0.0485	97	40-150
863090-89-5	PFMBA	0.05	0.0546	109	40-150
151772-58-6	NFDHA	0.05	0.0472	94	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0460	98	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0440	93	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-BS	6Q24599.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0462	104	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.146	117	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.615	98	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.621	99	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	63%	20-150%
	13C5-PFPeA	90%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	107%	20-150%
	13C8-PFOA	110%	20-150%
	13C9-PFNA	130%	20-150%
	13C6-PFDA	115%	20-150%
	13C7-PFUnDA	106%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	98%	20-150%
	13C3-PFBS	125%	20-150%
	13C3-PFHxS	106%	20-150%
	13C8-PFOS	95%	20-150%
	13C8-FOSA	77%	20-150%
	d3-MeFOSA	68%	20-150%
	d5-EtFOSA	71%	20-150%
	d3-MeFOSAA	99%	20-150%
	d5-EtFOSAA	81%	20-150%
	d7-MeFOSE	63%	20-150%
	d9-EtFOSE	67%	20-150%
	13C2-4:2FTS	107%	20-180%
	13C2-6:2FTS	99%	20-180%
	13C2-8:2FTS	100%	20-180%
	13C3-HFPO-DA	97%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99024-BS	4Q50746.D	1	09/18/23	AL	09/15/23	OP99024	S4Q742

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

FC9496-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0866	87	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	47%	20-150%
	13C5-PFPeA	112%	20-150%
	13C5-PFHxA	114%	20-150%
	13C4-PFHpA	113%	20-150%
	13C8-PFOA	108%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	115%	20-150%
	13C7-PFUnDA	119%	20-150%
	13C2-PFDoDA	110%	20-150%
	13C2-PFTeDA	106%	20-150%
	13C3-PFBS	121%	20-150%
	13C3-PFHxS	114%	20-150%
	13C8-PFOS	104%	20-150%
	13C8-FOSA	86%	20-150%
	d3-MeFOSA	82%	20-150%
	d5-EtFOSA	81%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	103%	20-150%
	d7-MeFOSE	97%	20-150%
	d9-EtFOSE	101%	20-150%
	13C2-4:2FTS	108%	20-180%
	13C2-6:2FTS	118%	20-180%
	13C2-8:2FTS	118%	20-180%
	13C3-HFPO-DA	113%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-MS	6Q24603.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353
FC9496-1	6Q24602.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	FC9496-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015	U	0.0909	0.0929	102	40-150
2706-90-3	Perfluoropentanoic acid	0.0073	U	0.0455	0.0444	98	40-150
307-24-4	Perfluorohexanoic acid	0.0036	U	0.0227	0.0204	90	40-150
375-85-9	Perfluoroheptanoic acid	0.0036	U	0.0227	0.0193	85	40-150
335-67-1	Perfluorooctanoic acid	0.0036	U	0.0227	0.0189	83	40-150
375-95-1	Perfluorononanoic acid	0.0036	U	0.0227	0.0192	84	40-150
335-76-2	Perfluorodecanoic acid	0.0036	U	0.0227	0.0227	100	40-150
2058-94-8	Perfluoroundecanoic acid	0.0036	U	0.0227	0.0217	95	40-150
307-55-1	Perfluorododecanoic acid	0.0036	U	0.0227	0.0205	90	40-150
72629-94-8	Perfluorotridecanoic acid	0.0036	U	0.0227	0.0193	85	40-150
376-06-7	Perfluorotetradecanoic acid	0.0036	U	0.0227	0.0200	88	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0036	U	0.0202	0.0187	93	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0045	U	0.0214	0.0197	92	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0036	U	0.0208	0.0196	94	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0036	U	0.0217	0.0236	109	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0036	U	0.0211	0.0214	101	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0036	U	0.0219	0.0227	104	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0036	U	0.0219	0.0203	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045	U	0.022	0.0172	78	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.018	U	0.0852	0.0821	96	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018	U	0.0864	0.0873	101	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018	U	0.0873	0.0815	93	40-150
754-91-6	PFOSA	0.0036	U	0.0227	0.0196	86	40-150
31506-32-8	MeFOSA	0.0073	U	0.0455	0.0478	105	40-150
4151-50-2	EtFOSA	0.0073	U	0.0455	0.0408	90	40-150
2355-31-9	MeFOSAA	0.0045	U	0.0227	0.0224	99	40-150
2991-50-6	EtFOSAA	0.0045	U	0.0227	0.0260	114	40-150
24448-09-7	MeFOSE	0.036	U	0.114	0.107	94	40-150
1691-99-2	EtFOSE	0.036	U	0.114	0.105	92	40-150
13252-13-6	HFPO-DA (GenX)	0.0036	U	0.0455	0.0440	97	40-150
919005-14-4	ADONA	0.0073	U	0.043	0.0431	100	40-150
377-73-1	PFMPA	0.0073	U	0.0455	0.0490	108	40-150
863090-89-5	PFMBA	0.0073	U	0.0455	0.0479	105	40-150
151772-58-6	NFDHA	0.0073	U	0.0455	0.0421	93	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0073	U	0.0425	0.0362	85	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0073	U	0.043	0.0331	77	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-MS	6Q24603.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353
FC9496-1	6Q24602.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	FC9496-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0073	U	0.0405	0.0414	102	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018	U	0.114	0.0894	79	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.091	U	0.568	0.543	96	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.091	U	0.568	0.540	95	40-150

CAS No.	ID Standard Recoveries	MS	FC9496-1	Limits
	13C4-PFBA	106%	119%	20-150%
	13C5-PFPeA	91%	99%	20-150%
	13C5-PFHxA	100%	111%	20-150%
	13C4-PFHpA	113%	118%	20-150%
	13C8-PFOA	101%	120%	20-150%
	13C9-PFNA	124%	143%	20-150%
	13C6-PFDA	110%	117%	20-150%
	13C7-PFUnDA	93%	99%	20-150%
	13C2-PFDoDA	93%	96%	20-150%
	13C2-PFTeDA	90%	94%	20-150%
	13C3-PFBS	113%	131%	20-150%
	13C3-PFHxS	106%	119%	20-150%
	13C8-PFOS	97%	111%	20-150%
	13C8-FOSA	82%	86%	20-150%
	d3-MeFOSA	75%	76%	20-150%
	d5-EtFOSA	80%	90%	20-150%
	d3-MeFOSAA	99%	105%	20-150%
	d5-EtFOSAA	83%	91%	20-150%
	d7-MeFOSE	71%	79%	20-150%
	d9-EtFOSE	78%	86%	20-150%
	13C2-4:2FTS	101%	119%	20-180%
	13C2-6:2FTS	96%	115%	20-180%
	13C2-8:2FTS	92%	107%	20-180%
	13C3-HFPO-DA	104%	110%	20-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99024-MS	4Q50751.D	1	09/18/23	AL	09/15/23	OP99024	S4Q742
OP99024-MSD	4Q50752.D	1	09/18/23	AL	09/15/23	OP99024	S4Q742
FC9496-4	4Q50750.D	1	09/18/23	AL	09/15/23	OP99024	S4Q742

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

FC9496-4

CAS No.	Compound	FC9496-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.12	U	0.769	0.631	82	0.769	0.672	87	6	40-150/30

CAS No.	ID Standard Recoveries	MS	MSD	FC9496-4	Limits
	13C4-PFBA	105%	100%	112%	20-150%
	13C5-PFPeA	105%	98%	108%	20-150%
	13C5-PFHxA	102%	97%	107%	20-150%
	13C4-PFHpA	104%	96%	108%	20-150%
	13C8-PFOA	104%	95%	103%	20-150%
	13C9-PFNA	106%	91%	103%	20-150%
	13C6-PFDA	89%	92%	104%	20-150%
	13C7-PFUnDA	99%	88%	108%	20-150%
	13C2-PFDoDA	82%	78%	96%	20-150%
	13C2-PFTeDA	84%	75%	93%	20-150%
	13C3-PFBS	97%	90%	107%	20-150%
	13C3-PFHxS	98%	87%	106%	20-150%
	13C8-PFOS	88%	83%	93%	20-150%
	13C8-FOSA	81%	70%	78%	20-150%
	d3-MeFOSA	76%	73%	71%	20-150%
	d5-EtFOSA	72%	75%	69%	20-150%
	d3-MeFOSAA	93%	87%	100%	20-150%
	d5-EtFOSAA	99%	95%	104%	20-150%
	d7-MeFOSE	83%	76%	85%	20-150%
	d9-EtFOSE	90%	83%	92%	20-150%
	13C2-4:2FTS	95%	88%	108%	20-180%
	13C2-6:2FTS	88%	82%	97%	20-180%
	13C2-8:2FTS	68%	72%	84%	20-180%
	13C3-HFPO-DA	102%	98%	110%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-DUP	6Q24605.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353
FC9496-2	6Q24604.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	FC9496-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0096	J	0.0102	J	6	30
2706-90-3	Perfluoropentanoic acid	0.0077 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.00097	J	0.00086	J	12	30
375-85-9	Perfluoroheptanoic acid	0.0038 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0010	J	0.00073	J	31*	30
375-95-1	Perfluorononanoic acid	0.0038 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0038 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0038 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0038 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0038 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0038 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.00050	J	0.00046	J	8	30
2706-91-4	Perfluoropentanesulfonic acid	0.0048 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0038 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0012	J	0.00079	J	41*	30
68259-12-1	Perfluorononanesulfonic acid	0.0038 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0038 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0048 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.019 U		ND		nc	30
754-91-6	PFOSA	0.0038 U		ND		nc	30
31506-32-8	MeFOSA	0.0077 U		ND		nc	30
4151-50-2	EtFOSA	0.0077 U		ND		nc	30
2355-31-9	MeFOSAA	0.0048 U		ND		nc	30
2991-50-6	EtFOSAA	0.0048 U		ND		nc	30
24448-09-7	MeFOSE	0.038 U		ND		nc	30
1691-99-2	EtFOSE	0.038 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0038 U		ND		nc	30
919005-14-4	ADONA	0.0077 U		ND		nc	30
377-73-1	PFMPA	0.0077 U		ND		nc	30
863090-89-5	PFMBA	0.0077 U		ND		nc	30
151772-58-6	NFDHA	0.0077 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0077 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0077 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC9496
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP99007-DUP	6Q24605.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353
FC9496-2	6Q24604.D	1	09/18/23	MV	09/14/23	OP99007	S6Q353

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

FC9496-1, FC9496-2, FC9496-3, FC9496-4, FC9496-5, FC9496-6, FC9496-7

CAS No.	Compound	FC9496-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0077	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.019	U	ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.096	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.096	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC9496-2	Limits
	13C4-PFBA	57%	54%	20-150%
	13C5-PFPeA	90%	84%	20-150%
	13C5-PFHxA	108%	94%	20-150%
	13C4-PFHpA	108%	98%	20-150%
	13C8-PFOA	117%	108%	20-150%
	13C9-PFNA	127%	117%	20-150%
	13C6-PFDA	115%	101%	20-150%
	13C7-PFUnDA	101%	86%	20-150%
	13C2-PFDoDA	91%	85%	20-150%
	13C2-PFTeDA	81%	70%	20-150%
	13C3-PFBS	126%	112%	20-150%
	13C3-PFHxS	111%	103%	20-150%
	13C8-PFOS	106%	85%	20-150%
	13C8-FOSA	84%	73%	20-150%
	d3-MeFOSA	67%	55%	20-150%
	d5-EtFOSA	68%	58%	20-150%
	d3-MeFOSAA	93%	88%	20-150%
	d5-EtFOSAA	77%	75%	20-150%
	d7-MeFOSE	64%	57%	20-150%
	d9-EtFOSE	68%	62%	20-150%
	13C2-4:2FTS	106%	96%	20-180%
	13C2-6:2FTS	95%	92%	20-180%
	13C2-8:2FTS	101%	87%	20-180%
	13C3-HFPO-DA	101%	93%	20-150%

* = Outside of Control Limits.