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## Technical Report for

**AECOM, INC.**

**N6274223F0104 RH Fire Suppression System**

**60697810**

**SGS Job Number: FC5482**

**Sampling Date: 04/20/23**



### Report to:

**AECOM, Inc**  
**7595 Technology Way**  
**Denver, CO 80237**  
**katie.abbott@aecom.com; mark.kromis@aecom.com;**  
**watson.tanji@aecom.com; kristin.rutherford@aecom.com**  
**ATTN: Katie Abbott**

**Total number of pages in report: 45**



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

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

**Client Service contact: Elvin Kumar 407-425-6700**

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)  
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),  
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Test results relate only to samples analyzed.



May 02, 2023

Katie Abbott  
AECOM, Inc.  
7595 Technology Way  
Denver, CO 80237

RE: SGS North America Inc. - Orlando job FC5482 Reissue

Dear Katie,

The revised chain of custody with the correct collection time for sample AF-RHMW17-WGN01LF-2304W3 was included and the changes are incorporated in the revised report for sample delivery group FC5482

SGS North America Inc. - Orlando apologizes for any inconvenience this may have caused. Please feel free to contact us if we can be of further assistance.

Sincerely,

SGS North America, Inc. - Orlando

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### Sample Summary

AECOM, INC.

Job No: FC5482

N6274223F0104 RH Fire Suppression System  
Project No: 60697810

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FC5482-1	04/20/23	09:45	MDS 04/21/23	AQ	Ground Water	AF-RHMW17S-WGN01LF-2304W3
FC5482-2	04/20/23	07:55	MDS 04/21/23	AQ	Equipment Blank	AF-RHMW17S-WQEB01-2304W3
FC5482-3	04/20/23	11:55	MDS 04/21/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2304W3
FC5482-4	04/20/23	15:25	MDS 04/21/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2304W3
FC5482-5	04/20/23	13:15	MDS 04/21/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2304W3

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** AECOM, INC.

**Job No:** FC5482

**Site:** N6274223F0104 RH Fire Suppression System

**Report Date:** 4/27/2023 5:37:24 PM

On 04/21/2023, 4 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.7 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC5482 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:** OP96548

Sample(s) FC5482-3MS, FC5482-4DUP were used as the QC samples indicated.

Sample(s) FC5482-4 have surrogates outside control limits.

FC5482-1 for Perfluorodecanoic acid: Associated Low Level CCV outside of control limits.

FC5482-2 for Perfluorodecanoic acid: Associated Low Level CCV outside of control limits.

FC5482-3 for Perfluorodecanoic acid: Associated Low Level CCV outside of control limits.

FC5482-4 for Perfluorodecanoic acid: Associated Low Level CCV outside of control limits.

FC5482-4 for 13C4-PFBA: Outside control limits. Confirmed by batch QC.

FC5482-4 for d5-EtFOSAA: Outside control limits. Confirmed by batch QC.

FC5482-5 for Perfluorodecanoic acid: Associated Low Level CCV outside of control limits.

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: FC5482  
Account: AECOM, INC.  
Project: N6274223F0104 RH Fire Suppression System  
Collected: 04/20/23



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FC5482-1 AF-RHMW17S-WGN01LF-2304W3

Perfluorohexanoic acid	1.5 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluoroheptanoic acid	1.0 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanoic acid	1.2 J	3.7	0.93	ng/l	EPA DRAFT 1633
Perfluorobutanesulfonic acid	0.63 J	3.7	1.9	ng/l	EPA DRAFT 1633
Perfluorooctanesulfonic acid	1.3 J	3.7	1.9	ng/l	EPA DRAFT 1633

FC5482-2 AF-RHMW17S-WQEB01-2304W3

No hits reported in this sample.

FC5482-3 AF-RHMW17-WGN01LF-2304W3

Perfluoropentanoic acid	2.0 J	7.3	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid	1.0 J	3.6	1.8	ng/l	EPA DRAFT 1633

FC5482-4 AF-RHMW17D-WGN01LF-2304W3

No hits reported in this sample.

FC5482-5 AF-RHMW17D-WQFB01-2304W3

No hits reported in this sample.

**Sample Results**

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**Report of Analysis**

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# Report of Analysis

Client Sample ID:	AF-RHMW17S-WGN01LF-2304W3		
Lab Sample ID:	FC5482-1	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	4Q43707.D	1	04/26/23 18:42	MV	04/24/23 11:00	OP96548	S4Q631
Run #2							

Run #	Initial Volume	Final Volume
Run #1	540 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	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9 U	7.4	1.9	0.87	ng/l	
307-24-4	Perfluorohexanoic acid	1.5	3.7	1.9	0.46	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.0	3.7	1.9	0.46	ng/l	J
335-67-1	Perfluorooctanoic acid	1.2	3.7	0.93	0.46	ng/l	J
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid <sup>a</sup>	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	

**PERFLUOROALKYL SULFONIC ACIDS**

375-73-5	Perfluorobutanesulfonic acid	0.63	3.7	1.9	0.46	ng/l	J
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.3	3.7	1.9	0.50	ng/l	J
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	

**FLUOROTELOMER SULFONIC ACIDS**

757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	

**PERFLUOROOCCTANE SULFONAMIDES**

754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	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-RHMW17S-WGN01LF-2304W3		
Lab Sample ID:	FC5482-1	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	

**PERFLUOROOCCTANE SULFONAMIDO ETHANOLS**

24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	

**PER and POLYFLUOROETHER CARBOXYLIC ACIDS**

13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	

**PER and POLYFLUOROETHER SULFONIC ACIDS**

756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	

**FLUOROTELOMER CARBOXYLIC ACIDS**

356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
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	13C4-PFBA	31%		20-150%
	13C5-PFPeA	90%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	106%		20-150%
	13C8-PFOA	104%		20-150%
	13C9-PFNA	100%		20-150%
	13C6-PFDA	104%		20-150%
	13C7-PFUnDA	97%		20-150%
	13C2-PFDoDA	82%		20-150%
	13C2-PFTeDA	56%		20-150%
	13C3-PFBS	115%		20-150%
	13C3-PFHxS	115%		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-2304W3	
Lab Sample ID:	FC5482-1	Date Sampled: 04/20/23
Matrix:	AQ - Ground Water	Date Received: 04/21/23
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	94%		20-150%
	13C8-FOSA	99%		20-150%
	d3-MeFOSA	86%		20-150%
	d5-EtFOSA	78%		20-150%
	d3-MeFOSAA	117%		20-150%
	d5-EtFOSAA	104%		20-150%
	d7-MeFOSE	78%		20-150%
	d9-EtFOSE	80%		20-150%
	13C2-4:2FTS	161%		20-180%
	13C2-6:2FTS	108%		20-180%
	13C2-8:2FTS	106%		20-180%
	13C3-HFPO-DA	95%		20-150%

(a) Associated Low Level CCV outside of 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-RHMW17S-WQEB01-2304W3		
Lab Sample ID:	FC5482-2	Date Sampled:	04/20/23
Matrix:	AQ - Equipment Blank	Date Received:	04/21/23
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	4Q43708.D	1	04/26/23 18:57	MV	04/24/23 11:00	OP96548	S4Q631
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 <sup>a</sup>	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

4.2  
4

# Report of Analysis

Client Sample ID:	AF-RHMW17S-WQEB01-2304W3		
Lab Sample ID:	FC5482-2	Date Sampled:	04/20/23
Matrix:	AQ - Equipment Blank	Date Received:	04/21/23
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	118%		20-150%
	13C5-PFPeA	115%		20-150%
	13C5-PFHxA	116%		20-150%
	13C4-PFHpA	116%		20-150%
	13C8-PFOA	110%		20-150%
	13C9-PFNA	109%		20-150%
	13C6-PFDA	97%		20-150%
	13C7-PFUnDA	92%		20-150%
	13C2-PFDoDA	79%		20-150%
	13C2-PFTeDA	81%		20-150%
	13C3-PFBS	114%		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-RHMW17S-WQEB01-2304W3		Date Sampled:	04/20/23
Lab Sample ID:	FC5482-2		Date Received:	04/21/23
Matrix:	AQ - Equipment Blank		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	94%		20-150%
	13C8-FOSA	73%		20-150%
	d3-MeFOSA	75%		20-150%
	d5-EtFOSA	72%		20-150%
	d3-MeFOSAA	103%		20-150%
	d5-EtFOSAA	93%		20-150%
	d7-MeFOSE	67%		20-150%
	d9-EtFOSE	74%		20-150%
	13C2-4:2FTS	139%		20-180%
	13C2-6:2FTS	123%		20-180%
	13C2-8:2FTS	130%		20-180%
	13C3-HFPO-DA	113%		20-150%

(a) Associated Low Level CCV outside of 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-RHMW17-WGN01LF-2304W3		
Lab Sample ID:	FC5482-3	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	4Q43709.D	1	04/26/23 19:11	MV	04/24/23 11:00	OP96548	S4Q631
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	2.0	7.3	1.8	0.85	ng/l	J
307-24-4	Perfluorohexanoic acid	1.0	3.6	1.8	0.45	ng/l	J
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 <sup>a</sup>	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	

**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

# Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2304W3		
Lab Sample ID:	FC5482-3	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	0.91	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
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	13C4-PFBA	107%		20-150%
	13C5-PFPeA	115%		20-150%
	13C5-PFHxA	118%		20-150%
	13C4-PFHpA	117%		20-150%
	13C8-PFOA	115%		20-150%
	13C9-PFNA	105%		20-150%
	13C6-PFDA	109%		20-150%
	13C7-PFUnDA	111%		20-150%
	13C2-PFDoDA	98%		20-150%
	13C2-PFTeDA	91%		20-150%
	13C3-PFBS	110%		20-150%
	13C3-PFHxS	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-RHMW17-WGN01LF-2304W3		Date Sampled:	04/20/23
Lab Sample ID:	FC5482-3		Date Received:	04/21/23
Matrix:	AQ - Ground Water		Percent Solids:	n/a
Method:	EPA DRAFT 1633 EPA 1633 DRAFT			
Project:	N6274223F0104 RH Fire Suppression System			

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	104%		20-150%
	13C8-FOSA	93%		20-150%
	d3-MeFOSA	84%		20-150%
	d5-EtFOSA	85%		20-150%
	d3-MeFOSAA	114%		20-150%
	d5-EtFOSAA	106%		20-150%
	d7-MeFOSE	76%		20-150%
	d9-EtFOSE	82%		20-150%
	13C2-4:2FTS	125%		20-180%
	13C2-6:2FTS	125%		20-180%
	13C2-8:2FTS	124%		20-180%
	13C3-HFPO-DA	109%		20-150%

(a) Associated Low Level CCV outside of 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-WGN01LF-2304W3		
Lab Sample ID:	FC5482-4	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	4Q43712.D	1	04/26/23 19:53	MV	04/24/23 11:00	OP96548	S4Q631
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 <sup>a</sup>	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	7.1 U	18	7.1	3.1	ng/l	
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-RHMW17D-WGN01LF-2304W3		
Lab Sample ID:	FC5482-4	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	4% <b>b</b>		20-150%
	13C5-PFPeA	22%		20-150%
	13C5-PFHxA	90%		20-150%
	13C4-PFHpA	105%		20-150%
	13C8-PFOA	105%		20-150%
	13C9-PFNA	98%		20-150%
	13C6-PFDA	106%		20-150%
	13C7-PFUnDA	101%		20-150%
	13C2-PFDoDA	84%		20-150%
	13C2-PFTeDA	56%		20-150%
	13C3-PFBS	104%		20-150%
	13C3-PFHxS	112%		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

Client Sample ID:	AF-RHMW17D-WGN01LF-2304W3		
Lab Sample ID:	FC5482-4	Date Sampled:	04/20/23
Matrix:	AQ - Ground Water	Date Received:	04/21/23
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	100%		20-150%
	d3-MeFOSA	102%		20-150%
	d5-EtFOSA	100%		20-150%
	d3-MeFOSAA	147%		20-150%
	d5-EtFOSAA	152% <sup>b</sup>		20-150%
	d7-MeFOSE	71%		20-150%
	d9-EtFOSE	81%		20-150%
	13C2-4:2FTS	118%		20-180%
	13C2-6:2FTS	107%		20-180%
	13C2-8:2FTS	103%		20-180%
	13C3-HFPO-DA	79%		20-150%

(a) Associated Low Level CCV outside of control limits.

(b) Outside control limits. Confirmed by batch QC.

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-WQFB01-2304W3		
Lab Sample ID:	FC5482-5	Date Sampled:	04/20/23
Matrix:	AQ - Field Blank Water	Date Received:	04/21/23
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	4Q43713.D	1	04/26/23 20:07	MV	04/24/23 11:00	OP96548	S4Q631
Run #2							

Run #	Initial Volume	Final Volume
Run #1	570 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	3.5 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 <sup>a</sup>	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	

**PERFLUOROOCCTANE 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

4.5  
4

# Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2304W3		
Lab Sample ID:	FC5482-5	Date Sampled:	04/20/23
Matrix:	AQ - Field Blank Water	Date Received:	04/21/23
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	3.5 U	4.4	3.5	0.88	ng/l	
2991-50-6	EtFOSAA	3.5 U	4.4	3.5	1.2	ng/l	

**PERFLUOROOCCTANE 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	116%		20-150%
	13C5-PFPeA	112%		20-150%
	13C5-PFHxA	115%		20-150%
	13C4-PFHpA	113%		20-150%
	13C8-PFOA	111%		20-150%
	13C9-PFNA	109%		20-150%
	13C6-PFDA	104%		20-150%
	13C7-PFUnDA	108%		20-150%
	13C2-PFDoDA	95%		20-150%
	13C2-PFTeDA	69%		20-150%
	13C3-PFBS	113%		20-150%
	13C3-PFHxS	109%		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-WQFB01-2304W3		
Lab Sample ID:	FC5482-5	Date Sampled:	04/20/23
Matrix:	AQ - Field Blank Water	Date Received:	04/21/23
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	88%		20-150%
	13C8-FOSA	78%		20-150%
	d3-MeFOSA	82%		20-150%
	d5-EtFOSA	84%		20-150%
	d3-MeFOSAA	112%		20-150%
	d5-EtFOSAA	104%		20-150%
	d7-MeFOSE	73%		20-150%
	d9-EtFOSE	86%		20-150%
	13C2-4:2FTS	139%		20-180%
	13C2-6:2FTS	141%		20-180%
	13C2-8:2FTS	130%		20-180%
	13C3-HFPO-DA	109%		20-150%

(a) Associated Low Level CCV outside of 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

**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



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

FC5482

COC #: 2304W3AFSG12

SGS - ORLANDO JOB #:

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Client / Reporting Information			Project Information			Analytical Information										Matrix Codes
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System			<div style="border: 1px solid black; padding: 5px; width: fit-content;">           EM 04/29/23         </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 # 60697810													
Project Manager: Watson Tani Email: watson.tani@aecom.com			Fax #			PFAS EPA Draft 1633										LAB USE ONLY
Phone #: 303-796-4624 / 808-954-4512			Client Purchase Order #													
Sampler(s) Name(s) (Printed)			Sampler 1: <i>Elie Macena</i> Sampler 2: <i>Zoe Diemier</i>													
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NOISE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAC	DI WATER	WASH	PFAS EPA Draft 1633
1	AF-RHMW17S-WGN01LF-2304W3	04/20/23	0645	Zoe Diemier	GW	3			X							X
2	AF-RHMW17S-WQEB01-2304W3	04/20/23	0755	Zoe Diemier	GW	3			X							X
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;">             INITIAL ASSESSMENT           </div>																
Turnaround Time ( Business days)				Data Deliverable Information				Comments / Remarks								
<input type="checkbox"/> 10 Day (Business) <input type="checkbox"/> 7 Day <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> Other		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 AWR - Dig. 45351564								
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 Elie Macena/AECOM		04/20/23 1340		2 Elie Macena/AECOM				3 Elie Macena/AECOM		4/20/23 1345		4 Elie Macena/AECOM				
Relinquished by/Affiliation		Date Time:		Received By/Affiliation				Relinquished By/Affiliation		Date Time:		Received By/Affiliation				
5				6				7		8		8				
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <i>4.875</i>																

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FC5482: Chain of Custody

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**FC5482**

COC #: 2304W3AFSG10

SGS - ORLANDO JOB # :

PAGE 1 OF 1

Client / Reporting Information			Project Information										Analytical Information										Matrix Codes
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System										<div style="border: 1px solid black; padding: 5px;"> <p>En 04/20/23</p> </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 Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512			Project # 60697810 Fax #																				
Sampler(s) Name(s) (Printed) Sampler 1: <i>En</i> Sampler 2: <i>Zoe Dierr</i>			Client Purchase Order #										PFAS EPA Draft 1633										
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NOISE	HCl	NaOH	INOS	PEROx	NaOH-ZINC	SILICATE	MECH	LAB USE ONLY							
5	AF-RHWW17-WGN01LF-2304W3	4/20/23	1133	En	GW	3			X														
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p>En 04/20/23</p> </div>																							
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 AWB 016-48351564									
Rush T/A Data Available VIA Email or Lablink																							
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation				Relinquished By/Affiliation		Date Time:		Received By/Affiliation											
1 Eli Natch / AECOM		04/20/23		2 [Signature] AECOM				3 [Signature] AECOM		4/20/23		4 [Signature] AECOM											
5				6				7				8											

5.1  
5

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FC5482: Chain of Custody

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Chain of Custody

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TEL: 407-425-6700 FAX: 407-425-0707  
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FC5482

CDC #: 2304W3AFSG11

SGS - ORLANDO JOB #:

PAGE 1 OF 1

Client / Reporting Information			Project Information										Analytical Information										Matrix Codes		
Company Name: AECOM			Project Name: N6274223F0104 RH Fire Suppression System																				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 Manager: Watson Tani Email: watson.tani@aecom.com			Project # 60697810																						
Phone #: 303-796-4624 / 808-954-4512			Fax #										PFAS EPA Draft 1633												
Sampler(s) Name(s) (Printed)			Client Purchase Order #																						
Sampler 1: El. Martha Sampler 2: Zoe Diemlin																									
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION										LAB USE ONLY										
		DATE	TIME	SAMPLED BY:	WATRIX	TOTAL # OF BOTTLES	OTHER	ROSE	HCl	NaOH	INDS	PESDA	NACH-ZNAC	DI WATER		MESH									
4	AF-RHMW17D-WGN01F-2304W3	04/20/23	1525	ZO EDR	GW	3		X								X									
5	AF-RHMW17D-WQFB01-2304W3	04/20/23	1315	ZO EDR	GW	3		X								X									
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 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 : 016-48351564									
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 El. Martha/AECOM		04/20/23 1617	2 Alex Edwards AECOM		3 Alex Edwards		4/20/23 1634	4 [Signature]		5 [Signature]		4/20/23 1635	6 [Signature]												
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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FC5482: Chain of Custody

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## SGS Sample Receipt Summary

Job Number: FC5482

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 4/21/2023 4:00:00 PM

Delivery Method: United Cargo/Airspace

Airbill #'s: United Cargo AWB #: 016-48351564

Therm ID: IR 1;

Therm CF: -0.1;

# of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (4.8);

Cooler Temps (Corrected) °C: Cooler 1: (4.7);

**Cooler Information**

Y or N

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

**Trip Blank Information**

Y or N N/A

- 1. Trip Blank present / cooler
  - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

**Sample Information**

Y or N N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

**Misc. Information**

Number of Encores: 25-Gram \_\_\_\_\_ 5-Gram \_\_\_\_\_

Number of 5035 Field Kits: \_\_\_\_\_

Number of Lab Filtered Metals: \_\_\_\_\_

Test Strip Lot #s: pH 0-3 230320

pH 10-12 25BDH07

Other: (Specify) pH 1.0 - 12.0 222221

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

Comments

SM001  
Rev. Date 05/24/17

Technician: NATHANS

Date: 4/21/2023 4:00:00 PM

Reviewer: CD

Date: 4/24/2023

FC5482: Chain of Custody

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**Job Change Order: FC5482**

<b>Requested Date:</b>	5/1/2023	<b>Received Date:</b>	4/21/2023
<b>Account Name:</b>	AECOM, INC.	<b>Due Date:</b>	4/28/2023
<b>Project Description:</b>	N6274223F0104 RH Fire Suppression System	<b>Deliverable:</b>	FULT2
<b>CSR:</b>	EK	<b>TAT (Days):</b>	7

=====  
**Sample #:** FC5482-3                      **Change:**  
**Dept:**    Revised COC received with correct sample collection time 11:55  
   include revised COC and reissue report.  
**TAT:**    7  
  
AF-RHMW17-WGN01LF-2304W3  
=====

**FC5482: Chain of Custody**  
**Page 6 of 6**

**Above Changes Per:** Alexander Edmonds                      **Date/Time:** 5/1/2023 10:15:06 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

5.1  
5

# QC Evaluation: DOD QSM5.x Limits

**Job Number:** FC5482  
**Account:** AECOM, INC.  
**Project:** N6274223F0104 RH Fire Suppression System  
**Collected:** 04/20/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
--------------	------	---------	--------------------	-------------	-------	--------

No DOD QSM5.x Limits found for methods in this job.

---

\* Sample used for QC is not from job FC5482

5.2  
5

## MS Semi-volatiles

---

### QC Data Summaries

---

#### Includes the following where applicable:

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

# Instrument Blank

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q631-IBLK	4Q43689.D	1	04/26/23	MV	n/a	n/a	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

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	



# Instrument Blank

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q631-IBLK	4Q43689.D	1	04/26/23	MV	n/a	n/a	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

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	103% 20-150%
	13C5-PFPeA	99% 20-150%
	13C5-PFHxA	100% 20-150%
	13C4-PFHpA	100% 20-150%
	13C8-PFOA	102% 20-150%
	13C9-PFNA	101% 20-150%
	13C6-PFDA	99% 20-150%
	13C7-PFUnDA	97% 20-150%
	13C2-PFDoDA	96% 20-150%
	13C2-PFTeDA	94% 20-150%
	13C3-PFBS	100% 20-150%
	13C3-PFHxS	99% 20-150%
	13C8-PFOS	97% 20-150%
	13C8-FOSA	101% 20-150%
	d3-MeFOSA	99% 20-150%
	d5-EtFOSA	99% 20-150%
	d3-MeFOSAA	101% 20-150%
	d5-EtFOSAA	109% 20-150%
	d7-MeFOSE	100% 20-150%
	d9-EtFOSE	104% 20-150%
	13C2-4:2FTS	108% 20-180%
	13C2-6:2FTS	121% 20-180%
	13C2-8:2FTS	111% 20-180%
	13C3-HFPO-DA	97% 20-150%

6.1.1  
6

# Continuing Calibration Blank

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q631-ICCB	4Q43705.D	1	04/26/23	MV	n/a	n/a	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

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: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q631-ICCB	4Q43705.D	1	04/26/23	MV	n/a	n/a	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

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	104% 20-150%
	13C5-PFPeA	100% 20-150%
	13C5-PFHxA	101% 20-150%
	13C4-PFHpA	102% 20-150%
	13C8-PFOA	95% 20-150%
	13C9-PFNA	96% 20-150%
	13C6-PFDA	97% 20-150%
	13C7-PFUnDA	95% 20-150%
	13C2-PFDoDA	93% 20-150%
	13C2-PFTeDA	98% 20-150%
	13C3-PFBS	101% 20-150%
	13C3-PFHxS	102% 20-150%
	13C8-PFOS	85% 20-150%
	13C8-FOSA	93% 20-150%
	d3-MeFOSA	95% 20-150%
	d5-EtFOSA	89% 20-150%
	d3-MeFOSAA	100% 20-150%
	d5-EtFOSAA	105% 20-150%
	d7-MeFOSE	96% 20-150%
	d9-EtFOSE	95% 20-150%
	13C2-4:2FTS	125% 20-180%
	13C2-6:2FTS	127% 20-180%
	13C2-8:2FTS	109% 20-180%
	13C3-HFPO-DA	99% 20-150%

# Method Blank Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-MB	4Q43698.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

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	0.00074	0.0040	0.00050	ug/l	J
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: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-MB	4Q43698.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

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	115% 20-150%
	13C5-PFPeA	114% 20-150%
	13C5-PFHxA	114% 20-150%
	13C4-PFHpA	114% 20-150%
	13C8-PFOA	109% 20-150%
	13C9-PFNA	114% 20-150%
	13C6-PFDA	112% 20-150%
	13C7-PFUnDA	118% 20-150%
	13C2-PFDoDA	108% 20-150%
	13C2-PFTeDA	108% 20-150%
	13C3-PFBS	116% 20-150%
	13C3-PFHxS	114% 20-150%
	13C8-PFOS	110% 20-150%
	13C8-FOSA	71% 20-150%
	d3-MeFOSA	76% 20-150%
	d5-EtFOSA	79% 20-150%
	d3-MeFOSAA	115% 20-150%
	d5-EtFOSAA	110% 20-150%
	d7-MeFOSE	70% 20-150%
	d9-EtFOSE	79% 20-150%
	13C2-4:2FTS	139% 20-180%
	13C2-6:2FTS	132% 20-180%
	13C2-8:2FTS	132% 20-180%
	13C3-HFPO-DA	111% 20-150%

# Blank Spike Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-LLBS	4Q43697.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0258	86	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0132	88	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0068	91	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0063	84	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0056	75	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0060	80	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0071	95	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0065	87	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0069	92	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0069	92	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0062	83	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0060	90	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0062	88	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0062	90	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0071	99	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0060	86	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0066	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0064	88	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0059	81	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0281	0.0263	94	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0242	85	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0305	106	40-150
754-91-6	PFOSA	0.0075	0.0066	88	40-150
31506-32-8	MeFOSA	0.015	0.0137	91	40-150
4151-50-2	EtFOSA	0.015	0.0129	86	40-150
2355-31-9	MeFOSAA	0.0075	0.0060	80	40-150
2991-50-6	EtFOSAA	0.0075	0.0067	89	40-150
24448-09-7	MeFOSE	0.0375	0.0344	92	40-150
1691-99-2	EtFOSE	0.0375	0.0285	76	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0131	87	40-150
919005-14-4	ADONA	0.0142	0.0122	86	40-150
377-73-1	PFMPA	0.015	0.0127	85	40-150
863090-89-5	PFMBA	0.015	0.0127	85	40-150
151772-58-6	NFDHA	0.015	0.0149	99	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.014	0.0120	86	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0142	0.0123	87	40-150

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-LLBS	4Q43697.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0115	86	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0214	57	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.188	0.124	66	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.133	71	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	115%	20-150%
	13C5-PFPeA	117%	20-150%
	13C5-PFHxA	115%	20-150%
	13C4-PFHpA	118%	20-150%
	13C8-PFOA	118%	20-150%
	13C9-PFNA	115%	20-150%
	13C6-PFDA	104%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	93%	20-150%
	13C3-PFBS	116%	20-150%
	13C3-PFHxS	114%	20-150%
	13C8-PFOS	107%	20-150%
	13C8-FOSA	70%	20-150%
	d3-MeFOSA	61%	20-150%
	d5-EtFOSA	66%	20-150%
	d3-MeFOSAA	121%	20-150%
	d5-EtFOSAA	118%	20-150%
	d7-MeFOSE	55%	20-150%
	d9-EtFOSE	65%	20-150%
	13C2-4:2FTS	130%	20-180%
	13C2-6:2FTS	154%	20-180%
	13C2-8:2FTS	121%	20-180%
	13C3-HFPO-DA	116%	20-150%

\* = Outside of Control Limits.

# Blank Spike Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-BS	4Q43696.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0912	91	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0475	95	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0226	90	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0231	92	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0223	89	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0225	90	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0233	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0221	88	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0234	94	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0244	98	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0232	93	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0202	91	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0211	90	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0206	90	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0225	94	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0223	96	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0245	102	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0227	94	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0222	92	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.0938	0.0900	96	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0857	90	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0916	95	40-150
754-91-6	PFOSA	0.025	0.0237	95	40-150
31506-32-8	MeFOSA	0.05	0.0484	97	40-150
4151-50-2	EtFOSA	0.05	0.0474	95	40-150
2355-31-9	MeFOSAA	0.025	0.0233	93	40-150
2991-50-6	EtFOSAA	0.025	0.0224	90	40-150
24448-09-7	MeFOSE	0.125	0.119	95	40-150
1691-99-2	EtFOSE	0.125	0.0987	79	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0481	96	40-150
919005-14-4	ADONA	0.0473	0.0467	99	40-150
377-73-1	PFMPA	0.05	0.0298	60	40-150
863090-89-5	PFMBA	0.05	0.0461	92	40-150
151772-58-6	NFDHA	0.05	0.0457	91	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0468	0.0458	98	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0473	0.0461	98	40-150

\* = Outside of Control Limits.



# Blank Spike Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-BS	4Q43696.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0397	89	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0568	45	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.625	0.463	74	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.479	77	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	40%	20-150%
	13C5-PFPeA	109%	20-150%
	13C5-PFHxA	112%	20-150%
	13C4-PFHpA	107%	20-150%
	13C8-PFOA	112%	20-150%
	13C9-PFNA	109%	20-150%
	13C6-PFDA	108%	20-150%
	13C7-PFUnDA	118%	20-150%
	13C2-PFDoDA	108%	20-150%
	13C2-PFTeDA	104%	20-150%
	13C3-PFBS	117%	20-150%
	13C3-PFHxS	120%	20-150%
	13C8-PFOS	102%	20-150%
	13C8-FOSA	78%	20-150%
	d3-MeFOSA	72%	20-150%
	d5-EtFOSA	74%	20-150%
	d3-MeFOSAA	119%	20-150%
	d5-EtFOSAA	116%	20-150%
	d7-MeFOSE	62%	20-150%
	d9-EtFOSE	70%	20-150%
	13C2-4:2FTS	130%	20-180%
	13C2-6:2FTS	135%	20-180%
	13C2-8:2FTS	131%	20-180%
	13C3-HFPO-DA	106%	20-150%

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-MS	4Q43710.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631
FC5482-3	4Q43709.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	FC5482-3 ug/l	Spike Q	MS ug/l	MS %	Limits	
375-22-4	Perfluorobutanoic acid	0.015 U		0.0909	0.0832	92	40-150
2706-90-3	Perfluoropentanoic acid	0.0020 J		0.0455	0.0460	97	40-150
307-24-4	Perfluorohexanoic acid	0.0010 J		0.0227	0.0223	94	40-150
375-85-9	Perfluoroheptanoic acid	0.0036 U		0.0227	0.0220	97	40-150
335-67-1	Perfluorooctanoic acid	0.0036 U		0.0227	0.0234	103	40-150
375-95-1	Perfluorononanoic acid	0.0036 U		0.0227	0.0223	98	40-150
335-76-2	Perfluorodecanoic acid	0.0036 U		0.0227	0.0217	95	40-150
2058-94-8	Perfluoroundecanoic acid	0.0036 U		0.0227	0.0220	97	40-150
307-55-1	Perfluorododecanoic acid	0.0036 U		0.0227	0.0223	98	40-150
72629-94-8	Perfluorotridecanoic acid	0.0036 U		0.0227	0.0236	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.0036 U		0.0227	0.0228	100	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	0.0216	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0036 U		0.0208	0.0197	95	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U		0.0217	0.0231	107	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0036 U		0.0211	0.0219	104	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0036 U		0.0219	0.0248	113	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0036 U		0.0219	0.0217	99	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U		0.022	0.0204	93	40-150
757124-72-44:2	Fluorotelomer sulfonate	0.018 U		0.0852	0.0808	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U		0.0864	0.0831	96	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U		0.0873	0.0970	111	40-150
754-91-6	PFOSA	0.0036 U		0.0227	0.0238	105	40-150
31506-32-8	MeFOSA	0.0073 U		0.0455	0.0422	93	40-150
4151-50-2	EtFOSA	0.0073 U		0.0455	0.0446	98	40-150
2355-31-9	MeFOSAA	0.0045 U		0.0227	0.0211	93	40-150
2991-50-6	EtFOSAA	0.0045 U		0.0227	0.0193	85	40-150
24448-09-7	MeFOSE	0.036 U		0.114	0.110	97	40-150
1691-99-2	EtFOSE	0.036 U		0.114	0.106	93	40-150
13252-13-6	HFPO-DA (GenX)	0.0036 U		0.0455	0.0431	95	40-150
919005-14-4	ADONA	0.0073 U		0.043	0.0429	100	40-150
377-73-1	PFMPA	0.0073 U		0.0455	0.0417	92	40-150
863090-89-5	PFMBA	0.0073 U		0.0455	0.0428	94	40-150
151772-58-6	NFDHA	0.0073 U		0.0455	0.0414	91	40-150
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0073 U		0.0425	0.0360	85	40-150
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0073 U		0.043	0.0365	85	40-150

\* = Outside of Control Limits.

# Matrix Spike Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-MS	4Q43710.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631
FC5482-3	4Q43709.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	FC5482-3 ug/l	Spike Q	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0073 U	0.0405	0.0366	90	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	0.114	0.0713	63	40-150
914637-49-35:3	Fluorotelomer carboxylate	0.091 U	0.568	0.430	76	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.091 U	0.568	0.435	77	40-150

CAS No.	ID Standard Recoveries	MS	FC5482-3	Limits
	13C4-PFBA	88%	107%	20-150%
	13C5-PFPeA	107%	115%	20-150%
	13C5-PFHxA	109%	118%	20-150%
	13C4-PFHpA	108%	117%	20-150%
	13C8-PFOA	97%	115%	20-150%
	13C9-PFNA	92%	105%	20-150%
	13C6-PFDA	82%	109%	20-150%
	13C7-PFUnDA	82%	111%	20-150%
	13C2-PFDoDA	75%	98%	20-150%
	13C2-PFTeDA	78%	91%	20-150%
	13C3-PFBS	106%	110%	20-150%
	13C3-PFHxS	97%	110%	20-150%
	13C8-PFOS	84%	104%	20-150%
	13C8-FOSA	79%	93%	20-150%
	d3-MeFOSA	81%	84%	20-150%
	d5-EtFOSA	80%	85%	20-150%
	d3-MeFOSAA	97%	114%	20-150%
	d5-EtFOSAA	97%	106%	20-150%
	d7-MeFOSE	73%	76%	20-150%
	d9-EtFOSE	83%	82%	20-150%
	13C2-4:2FTS	118%	125%	20-180%
	13C2-6:2FTS	118%	125%	20-180%
	13C2-8:2FTS	95%	124%	20-180%
	13C3-HFPO-DA	104%	109%	20-150%

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-DUP	4Q43711.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631
FC5482-4	4Q43712.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	FC5482-4 ug/l	DUP Q ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.014 U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0071 U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0036 U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0036 U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0036 U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0036 U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0036 U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0036 U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0036 U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0036 U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0036 U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0036 U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0036 U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0036 U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0036 U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0036 U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0036 U	ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0045 U	ND		nc	30
757124-72-44:2	Fluorotelomer sulfonate	0.018 U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.018 U	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.018 U	ND		nc	30
754-91-6	PFOSA	0.0036 U	ND		nc	30
31506-32-8	MeFOSA	0.0071 U	ND		nc	30
4151-50-2	EtFOSA	0.0071 U	ND		nc	30
2355-31-9	MeFOSAA	0.0045 U	ND		nc	30
2991-50-6	EtFOSAA	0.0045 U	ND		nc	30
24448-09-7	MeFOSE	0.036 U	ND		nc	30
1691-99-2	EtFOSE	0.036 U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0036 U	ND		nc	30
919005-14-4	ADONA	0.0071 U	ND		nc	30
377-73-1	PFMPA	0.0071 U	ND		nc	30
863090-89-5	PFMBA	0.0071 U	ND		nc	30
151772-58-6	NFDHA	0.0071 U	ND		nc	30
756426-58-19	Cl-PF3ONS (F-53B Major)	0.0071 U	ND		nc	30
763051-92-91	Cl-PF3OUdS (F-53B Minor)	0.0071 U	ND		nc	30

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: FC5482  
 Account: AECOMCOD AECOM, INC.  
 Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP96548-DUP	4Q43711.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631
FC5482-4	4Q43712.D	1	04/26/23	MV	04/24/23	OP96548	S4Q631

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC5482-1, FC5482-2, FC5482-3, FC5482-4, FC5482-5

CAS No.	Compound	FC5482-4 ug/l	DUP Q ug/l	Q	RPD	Limits
113507-82-7PFEESA		0.0071 U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.018 U	ND		nc	30
914637-49-35:3	Fluorotelomer carboxylate	0.089 U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.089 U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC5482-4	Limits
	13C4-PFBA	4%* b	4%* a	20-150%
	13C5-PFPeA	24%	22%	20-150%
	13C5-PFHxA	90%	90%	20-150%
	13C4-PFHpA	110%	105%	20-150%
	13C8-PFOA	104%	105%	20-150%
	13C9-PFNA	100%	98%	20-150%
	13C6-PFDA	101%	106%	20-150%
	13C7-PFUnDA	104%	101%	20-150%
	13C2-PFDoDA	83%	84%	20-150%
	13C2-PFTeDA	65%	56%	20-150%
	13C3-PFBS	97%	104%	20-150%
	13C3-PFHxS	118%	112%	20-150%
	13C8-PFOS	108%	111%	20-150%
	13C8-FOSA	109%	100%	20-150%
	d3-MeFOSA	111%	102%	20-150%
	d5-EtFOSA	103%	100%	20-150%
	d3-MeFOSAA	165%* b	147%	20-150%
	d5-EtFOSAA	162%* b	152%* a	20-150%
	d7-MeFOSE	80%	71%	20-150%
	d9-EtFOSE	88%	81%	20-150%
	13C2-4:2FTS	142%	118%	20-180%
	13C2-6:2FTS	99%	107%	20-180%
	13C2-8:2FTS	109%	103%	20-180%
	13C3-HFPO-DA	81%	79%	20-150%

(a) Outside control limits. Confirmed by batch QC.

(b) Outside control limits.

\* = Outside of Control Limits.