eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 5/19/2026 4:30:05 PM

JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-212178-1

Eurofins Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Drinking Water and Wastewater West, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW,Water matrices)

Authorization

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Authorized for release by
Maria Lopez, Project Manager
Maria.Lopez@et.eurofinsus.com
(626)386-1100

Table of Contents

Definitions/Glossary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
380-212178-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 5/6/2026 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C.

PFAS
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-212178-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0		ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0		ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-212178-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL
Date Collected: 05/05/26 09:30
Date Received: 05/06/26 09:45

Lab Sample ID: 380-212178-1
Matrix: Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorohexanesulfonic acid (PFHxS)	**3.2**		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorooctanesulfonic acid (PFOS)	**3.2**		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*76*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C6 PFDA	*80*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C5 PFHxA	*90*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C4 PFHpA	*84*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C8 PFOA	*86*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C9 PFNA	*85*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C7 PFUnA	*77*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C2 PFDoA	*81*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C4 PFBA	*89*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C5 PFPeA	*91*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C3 PFBS	*108*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C3 PFHxS	*110*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-212178-1

Date Collected: 05/05/26 09:30
Matrix: Water
Date Received: 05/06/26 09:45

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 PFOS	*101*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C2-4:2-FTS	*130*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C2-6:2-FTS	*113*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*
13C2-8:2-FTS	*90*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:06*	*1*

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorooctanesulfonic acid (PFOS)	**3.5**		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorohexanesulfonic acid (PFHxS)	**3.5**		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*108*		*70 - 130*	*05/09/26 08:50*	*05/10/26 15:41*	*1*
13C2 PFHxA	*91*		*70 - 130*	*05/09/26 08:50*	*05/10/26 15:41*	*1*
13C2 PFDA	*94*		*70 - 130*	*05/09/26 08:50*	*05/10/26 15:41*	*1*
13C3-GenX	*93*		*70 - 130*	*05/09/26 08:50*	*05/10/26 15:41*	*1*

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-212178-2

Date Collected: 05/05/26 09:30
Matrix: Water
Date Received: 05/06/26 09:45

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL
Date Collected: 05/05/26 09:30
Date Received: 05/06/26 09:45

Lab Sample ID: 380-212178-2
Matrix: Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		05/13/26 05:49	05/13/26 20:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*104*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C6 PFDA	*97*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C5 PFHxA	*111*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C4 PFHpA	*106*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C8 PFOA	*103*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C9 PFNA	*104*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C7 PFUnA	*97*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C2 PFDoA	*94*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C4 PFBA	*105*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C5 PFPeA	*111*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C3 PFBS	*107*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C3 PFHxS	*106*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C8 PFOS	*104*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C2-4:2-FTS	*123*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C2-6:2-FTS	*108*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*
13C2-8:2-FTS	*91*		*50 - 200*	*05/13/26 05:49*	*05/13/26 20:16*	*1*

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL
Date Collected: 05/05/26 09:30
Date Received: 05/06/26 09:45

Lab Sample ID: 380-212178-2
Matrix: Water

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		05/09/26 08:50	05/10/26 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*104*		*70 - 130*	*05/09/26 08:50*	*05/10/26 17:26*	*1*
13C2 PFHxA	*99*		*70 - 130*	*05/09/26 08:50*	*05/10/26 17:26*	*1*
13C2 PFDA	*93*		*70 - 130*	*05/09/26 08:50*	*05/10/26 17:26*	*1*
13C3-GenX	*89*		*70 - 130*	*05/09/26 08:50*	*05/10/26 17:26*	*1*

Action Limit Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-212178-1

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.2		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.5		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL — Lab Sample ID: 380-212178-2

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Surrogate Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-212178-1	HALAWA SHAFT VIEWING POO	108	91	94	93
380-212178-1 MS	HALAWA SHAFT VIEWING POOL	108	100	99	100
380-212178-1 MSD	HALAWA SHAFT VIEWING POOL	110	103	101	104
380-212178-2	FB HALAWA SHAFT VIEWING POOL	104	99	93	89
LCS 380-225944/23-A	Lab Control Sample	105	101	96	93
MBL 380-225944/21-A	Method Blank	112	101	96	102
MRL 380-225944/22-A	Lab Control Sample	112	106	98	100

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-211465-E-1-A MS	Matrix Spike	104	97	111	110	104	103	99	98
380-211465-F-1-A MSD	Matrix Spike Duplicate	103	95	101	104	101	101	98	102
380-212178-1	HALAWA SHAFT VIEWING POOL	76	80	90	84	86	85	77	81
380-212178-2	FB HALAWA SHAFT VIEWING POOL	104	97	111	106	103	104	97	94
LCS 380-226661/22-A	Lab Control Sample	108	99	111	107	108	107	103	103
MBL 380-226661/20-A	Method Blank	106	103	113	112	113	104	105	105
MRL 380-226661/21-A	Lab Control Sample	103	96	107	108	104	102	99	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-211465-E-1-A MS	Matrix Spike	107	111	109	113	105	114	106	96
380-211465-F-1-A MSD	Matrix Spike Duplicate	106	110	103	109	104	107	104	92
380-212178-1	HALAWA SHAFT VIEWING POOL	89	91	108	110	101	130	113	90
380-212178-2	FB HALAWA SHAFT VIEWING POOL	105	111	107	106	104	123	108	91
LCS 380-226661/22-A	Lab Control Sample	106	106	110	109	104	114	102	91
MBL 380-226661/20-A	Method Blank	89	111	114	112	106	122	115	101
MRL 380-226661/21-A	Lab Control Sample	101	104	112	112	107	119	108	95

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 380-226661/20-A
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226661

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		05/13/26 05:49	05/13/26 16:58	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*106*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C6 PFDA	*103*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C5 PFHxA	*113*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C4 PFHpA	*112*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C8 PFOA	*113*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C9 PFNA	*104*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C7 PFUnA	*105*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C2 PFDoA	*105*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C4 PFBA	*89*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C5 PFPeA	*111*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C3 PFBS	*114*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*
13C3 PFHxS	*112*		*50 - 200*	*05/13/26 05:49*	*05/13/26 16:58*	*1*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 380-226661/20-A
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226661

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	106		50 - 200	05/13/26 05:49	05/13/26 16:58	1
13C2-4:2-FTS	122		50 - 200	05/13/26 05:49	05/13/26 16:58	1
13C2-6:2-FTS	115		50 - 200	05/13/26 05:49	05/13/26 16:58	1
13C2-8:2-FTS	101		50 - 200	05/13/26 05:49	05/13/26 16:58	1

Lab Sample ID: LCS 380-226661/22-A
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	58.8		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	57.7		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	59.2		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	59.9		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	57.3		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	60.2		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	58.4		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	58.3		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	57.6		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	58.3		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	60.2	58.4		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	58.7		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	57.6		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	54.1		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	58.5		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	63.3		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	61.7		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	61.0		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	58.2		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	57.1		ng/L		95	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	58.8		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	59.2		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	58.1		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	60.5		ng/L		100	70 - 130

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LCS 380-226661/22-A
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	58.7		ng/L		97	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*108*		*50 - 200*
13C6 PFDA	*99*		*50 - 200*
13C5 PFHxA	*111*		*50 - 200*
13C4 PFHpA	*107*		*50 - 200*
13C8 PFOA	*108*		*50 - 200*
13C9 PFNA	*107*		*50 - 200*
13C7 PFUnA	*103*		*50 - 200*
13C2 PFDoA	*103*		*50 - 200*
13C4 PFBA	*106*		*50 - 200*
13C5 PFPeA	*106*		*50 - 200*
13C3 PFBS	*110*		*50 - 200*
13C3 PFHxS	*109*		*50 - 200*
13C8 PFOS	*104*		*50 - 200*
13C2-4:2-FTS	*114*		*50 - 200*
13C2-6:2-FTS	*102*		*50 - 200*
13C2-8:2-FTS	*91*		*50 - 200*

Lab Sample ID: MRL 380-226661/21-A
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.02	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.90	J	ng/L		94	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.11	J	ng/L		105	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.92	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.14	J	ng/L		107	50 - 150

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MRL 380-226661/21-A
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.09	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.27	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.25	J	ng/L		112	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.98	J	ng/L		98	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.96	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.98	J	ng/L		99	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*103*		*50 - 200*
13C6 PFDA	*96*		*50 - 200*
13C5 PFHxA	*107*		*50 - 200*
13C4 PFHpA	*108*		*50 - 200*
13C8 PFOA	*104*		*50 - 200*
13C9 PFNA	*102*		*50 - 200*
13C7 PFUnA	*99*		*50 - 200*
13C2 PFDoA	*102*		*50 - 200*
13C4 PFBA	*101*		*50 - 200*
13C5 PFPeA	*104*		*50 - 200*
13C3 PFBS	*112*		*50 - 200*
13C3 PFHxS	*112*		*50 - 200*
13C8 PFOS	*107*		*50 - 200*
13C2-4:2-FTS	*119*		*50 - 200*
13C2-6:2-FTS	*108*		*50 - 200*
13C2-8:2-FTS	*95*		*50 - 200*

Lab Sample ID: 380-211465-E-1-A MS
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	58.0		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	57.7		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	55.9		ng/L		93	70 - 130

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-211465-E-1-A MS
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	58.5		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	59.9		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	58.2		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	56.5		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	57.2		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.6		60.4	61.0		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	2.9		60.4	57.8		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	57.5		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	59.7		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	2.0		60.4	58.5		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	56.2		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	58.2		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	58.8		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	63.4		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	60.2		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	55.9		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	58.5		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	58.4		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	57.4		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	3.5		60.4	60.4		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	59.2		ng/L		98	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	56.4		ng/L		92	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*104*		*50 - 200*
13C6 PFDA	*97*		*50 - 200*
13C5 PFHxA	*111*		*50 - 200*
13C4 PFHpA	*110*		*50 - 200*
13C8 PFOA	*104*		*50 - 200*
13C9 PFNA	*103*		*50 - 200*
13C7 PFUnA	*99*		*50 - 200*
13C2 PFDoA	*98*		*50 - 200*
13C4 PFBA	*107*		*50 - 200*
13C5 PFPeA	*111*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*113*		*50 - 200*
13C8 PFOS	*105*		*50 - 200*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-211465-E-1-A MS
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 226661

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	96		50 - 200

Lab Sample ID: 380-211465-F-1-A MSD
Matrix: Water
Analysis Batch: 226831

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 226661

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.5	59.3		ng/L		98	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.5	58.5		ng/L		97	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.5	59.5		ng/L		98	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.5	59.1		ng/L		98	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.5	60.9		ng/L		99	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.5	59.1		ng/L		98	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.5	58.9		ng/L		97	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.5	58.8		ng/L		96	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	3.6		60.5	61.8		ng/L		96	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	2.9		60.5	63.4		ng/L		100	70 - 130	9	30
Perfluorononanoic acid (PFNA)	<2.0		60.5	58.9		ng/L		97	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.5	58.9		ng/L		96	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	2.0		60.5	61.9		ng/L		99	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.5	57.9		ng/L		96	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		60.5	59.8		ng/L		97	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.5	62.7		ng/L		104	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.5	63.6		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.5	60.8		ng/L		101	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.5	61.9		ng/L		102	70 - 130	10	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.5	63.1		ng/L		104	70 - 130	8	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.5	59.8		ng/L		99	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.5	58.9		ng/L		97	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	3.5		60.5	60.9		ng/L		95	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.5	59.3		ng/L		98	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.5	57.9		ng/L		95	70 - 130	3	30

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	101		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	102		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	110		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	92		50 - 200

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Lab Sample ID: MBL 380-225944/21-A
Matrix: Water
Analysis Batch: 225986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225944

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		05/09/26 08:50	05/10/26 15:22	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	112		70 - 130	05/09/26 08:50	05/10/26 15:22	1
13C2 PFHxA	101		70 - 130	05/09/26 08:50	05/10/26 15:22	1
13C2 PFDA	96		70 - 130	05/09/26 08:50	05/10/26 15:22	1

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MBL 380-225944/21-A
Matrix: Water
Analysis Batch: 225986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 225944

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	102		70 - 130	05/09/26 08:50	05/10/26 15:22	1

Lab Sample ID: LCS 380-225944/23-A
Matrix: Water
Analysis Batch: 225986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	20.4		ng/L		82	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	25.7		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	23.5		ng/L		94	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	24.3		ng/L		97	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	25.0		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	23.4		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	22.8		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	23.4		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	22.2		ng/L		89	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	25.2		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	25.1		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	22.9		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	25.0	25.0		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.0	22.1		ng/L		88	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	24.9		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.0	27.7		ng/L		111	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	25.8		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	23.9		ng/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	105		70 - 130
13C2 PFHxA	101		70 - 130
13C2 PFDA	96		70 - 130
13C3-GenX	93		70 - 130

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MRL 380-225944/22-A
Matrix: Water
Analysis Batch: 225986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 225944

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.78	J	ng/L		89	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.87	J	ng/L		93	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.10	J	ng/L		105	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.31	J	ng/L		116	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.24	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.70	J	ng/L		85	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	1.97	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.25	J	ng/L		113	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.05	J	ng/L		102	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.97	J	ng/L		98	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*112*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*98*		*70 - 130*
13C3-GenX	*100*		*70 - 130*

Lab Sample ID: 380-212178-1 MS
Matrix: Water
Analysis Batch: 225986

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 225944

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	45.9		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.5		50.2	60.7		ng/L		114	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	46.3		ng/L		92	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	55.0		ng/L		110	70 - 130

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-212178-1 MS
Matrix: Water
Analysis Batch: 225986

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 225944

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	53.6		ng/L		107	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	51.3		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	45.8		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	50.9		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	46.9		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.5		50.2	58.5		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	58.2		ng/L		115	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	49.4		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	50.0		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	37.9		ng/L		76	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	49.5		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	57.1		ng/L		114	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	52.5		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	49.4		ng/L		98	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*108*		*70 - 130*
13C2 PFHxA	*100*		*70 - 130*
13C2 PFDA	*99*		*70 - 130*
13C3-GenX	*100*		*70 - 130*

Lab Sample ID: 380-212178-1 MSD
Matrix: Water
Analysis Batch: 225986

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 225944

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	44.8		ng/L		89	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	3.5		50.2	56.8		ng/L		106	70 - 130	7	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	45.8		ng/L		91	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	48.3		ng/L		96	70 - 130	13	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	49.8		ng/L		99	70 - 130	7	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	50.0		ng/L		96	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	45.7		ng/L		91	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	47.5		ng/L		93	70 - 130	7	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	45.3		ng/L		90	70 - 130	3	30

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-212178-1 MSD
Matrix: Water
Analysis Batch: 225986

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 225944

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	3.5		50.2	55.4		ng/L		103	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	53.9		ng/L		106	70 - 130	8	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	47.8		ng/L		94	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	49.4		ng/L		98	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	40.5		ng/L		81	70 - 130	7	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	49.0		ng/L		98	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	54.3		ng/L		108	70 - 130	5	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	49.1		ng/L		98	70 - 130	7	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	47.8		ng/L		95	70 - 130	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*110*		*70 - 130*
13C2 PFHxA	*103*		*70 - 130*
13C2 PFDA	*101*		*70 - 130*
13C3-GenX	*104*		*70 - 130*

LCMS

Prep Batch: 225944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-212178-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-212178-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-225944/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-225944/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-225944/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-212178-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-212178-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	

Analysis Batch: 225986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-212178-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	225944
380-212178-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	225944
MBL 380-225944/21-A	Method Blank	Total/NA	Water	EPA 537.1 V2	225944
LCS 380-225944/23-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	225944
MRL 380-225944/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	225944
380-212178-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	225944
380-212178-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	225944

Prep Batch: 226661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-212178-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-212178-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-226661/20-A	Method Blank	Total/NA	Water	533	
LCS 380-226661/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-226661/21-A	Lab Control Sample	Total/NA	Water	533	
380-211465-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-211465-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 226831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-212178-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	226661
380-212178-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	226661
MBL 380-226661/20-A	Method Blank	Total/NA	Water	533	226661
LCS 380-226661/22-A	Lab Control Sample	Total/NA	Water	533	226661
MRL 380-226661/21-A	Lab Control Sample	Total/NA	Water	533	226661
380-211465-E-1-A MS	Matrix Spike	Total/NA	Water	533	226661
380-211465-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	226661

Lab Chronicle

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-212178-1
Date Collected: 05/05/26 09:30
Matrix: Water
Date Received: 05/06/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			226661	XTD8	EA POM	05/13/26 05:49
Total/NA	Analysis	533		1	226831	M7ML	EA POM	05/13/26 20:06
Total/NA	Prep	537.1 DW			225944	E9PK	EA POM	05/09/26 08:50
Total/NA	Analysis	EPA 537.1 V2		1	225986	M7ML	EA POM	05/10/26 15:41

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-212178-2
Date Collected: 05/05/26 09:30
Matrix: Water
Date Received: 05/06/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			226661	XTD8	EA POM	05/13/26 05:49
Total/NA	Analysis	533		1	226831	M7ML	EA POM	05/13/26 20:16
Total/NA	Prep	537.1 DW			225944	E9PK	EA POM	05/09/26 08:50
Total/NA	Analysis	EPA 537.1 V2		1	225986	M7ML	EA POM	05/10/26 17:26

Laboratory References:

EA POM = Eurofins Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Laboratory: Eurofins Pomona

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-26 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
EPA 537.1 V2	EPA 537.1 Ver. 2.0 March 2020	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA POM = Eurofins Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Sample Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-212178-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-212178-1	HALAWA SHAFT VIEWING POOL	Water	05/05/26 09:30	05/06/26 09:45	Hawaii
380-212178-2	FB HALAWA SHAFT VIEWING POOL	Water	05/05/26 09:30	05/06/26 09:45	Hawaii

Eurofins Pomona
941 Corporate Center Drive
Pomona CA 91768-2642
Phone (626) 386-1100

Chain of Custody Record

eurofins Environment Testing Ame

380-212178 COC

Client Information	Sampler: Kai Edison	Lab PM: Lopez, Maria	Carrier Tracking No(s):	COC No:
Client Contact: Kirk Iwamoto	Phone: +1 808 748 5840	E-Mail: Maria.Lopez@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: City & County of Honolulu	PWSID:			Job #:

Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:	
City: Honolulu	TAT Requested (days): RUSH	
State, Zip: HI 96843	Compliance Project: Δ No	
Phone: 808-748-5840 (tel)	PO #: C20525101 exp 05312023	
Email: kiwamoto@hbws.org	WO #:	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111	
Site:	SSOW#:	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other: NH4 Acetate

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	537 1_DW_PREC - 537.1 Full List	533 All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	Y	Z	X	
HALAWA SHAFT VIEWING POOL	5-May-2026	9:30	G	Water			3	3		
FB HALAWA SHAFT VIEWING POOL	5-May-2026	9:30	G	Water			1	1		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedX

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by: [redacted]	5/6/26 12:00	HBWS	Mark Miculka	5/6/26 445	KAI
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: (63(A) 3.1+0.0-31 got frozen

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-212178-1
SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 212178
List Number: 1
Creator: Edrosa, Rey

List Source: Eurofins Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
ClO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	