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ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-215539-1

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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



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-215539-1
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

Case Narrative

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

Job ID: 380-215539-1

Job ID: 380-215539-1

Eurofins Pomona

Job Narrative 380-215539-1

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 5/21/2026 10:05 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 1.6°C.

PFAS

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results: Halawa Shaft Viewing Pool (380-215539-1). (XWB4)

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

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Detection Summary

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-2

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-1

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorooctanoic acid (PFOA)	2.4		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C6 PFDA	104		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C5 PFHxA	107		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C4 PFHpA	103		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C8 PFOA	102		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C9 PFNA	103		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C7 PFUnA	116		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C2 PFDoA	109		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C4 PFBA	105		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C5 PFPeA	111		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C3 PFBS	102		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C3 PFHxS	108		50 - 200	05/30/26 14:54	06/01/26 17:00	1

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Client Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-1

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	107		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C2-4:2-FTS	127		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C2-6:2-FTS	123		50 - 200	05/30/26 14:54	06/01/26 17:00	1
13C2-8:2-FTS	118		50 - 200	05/30/26 14:54	06/01/26 17:00	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		05/23/26 14:07	05/26/26 13:34	1
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:34	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	96		70 - 130	05/23/26 14:07	05/26/26 13:34	1		
13C2 PFHxA	105		70 - 130	05/23/26 14:07	05/26/26 13:34	1		
13C2 PFDA	98		70 - 130	05/23/26 14:07	05/26/26 13:34	1		
13C3-GenX	97		70 - 130	05/23/26 14:07	05/26/26 13:34	1		

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-2

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

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		05/30/26 14:54	06/01/26 17:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1

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Client Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-2

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

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		05/30/26 14:54	06/01/26 17:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		05/30/26 14:54	06/01/26 17:20	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C6 PFDA	109		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C5 PFHxA	110		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C4 PFHpA	109		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C8 PFOA	111		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C9 PFNA	111		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C7 PFUnA	107		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C2 PFDoA	113		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C4 PFBA	112		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C5 PFPeA	113		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C3 PFBS	101		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C3 PFHxS	113		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C8 PFOS	110		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C2-4:2-FTS	128		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C2-6:2-FTS	127		50 - 200	05/30/26 14:54	06/01/26 17:20	1
13C2-8:2-FTS	125		50 - 200	05/30/26 14:54	06/01/26 17:20	1

Client Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-2

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

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		05/23/26 14:07	05/26/26 13:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		05/23/26 14:07	05/26/26 13:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130			05/23/26 14:07	05/26/26 13:43	1
13C2 PFHxA	99		70 - 130			05/23/26 14:07	05/26/26 13:43	1
13C2 PFDA	100		70 - 130			05/23/26 14:07	05/26/26 13:43	1
13C3-GenX	92		70 - 130			05/23/26 14:07	05/26/26 13:43	1

Action Limit Summary

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-1

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	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.4		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)	3.3		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)	3.4		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: 380-215539-2

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	RL	Method	Prep Type
				Limit			
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: 380-215539-1
 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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-215260-E-1-A MS	Matrix Spike	104	110	110	110
380-215260-F-1-A MSD	Matrix Spike Duplicate	94	102	102	99
380-215539-1	HALAWA SHAFT VIEWING POOL	96	105	98	97
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	100	99	100	92
LCS 380-229176/23-A	Lab Control Sample	87	103	104	96
MBL 380-229176/21-A	Method Blank	99	97	104	88
MRL 380-229176/22-A	Lab Control Sample	98	97	103	98

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: 380-215539-1
 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)	PFDaA (50-200)
380-215538-B-1-A MS	Matrix Spike	102	111	108	111	103	105	124	115
380-215538-C-1-A MSD	Matrix Spike Duplicate	104	109	107	108	100	105	115	112
380-215539-1	HALAWA SHAFT VIEWING POOL	98	104	107	103	102	103	116	109
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	100	109	110	109	111	111	107	113
LCS 380-230570/22-A	Lab Control Sample	105	107	107	104	106	103	116	109
MBL 380-230570/20-A	Method Blank	100	107	105	99	109	110	116	110
MRL 380-230570/21-A	Lab Control Sample	103	104	105	104	105	103	116	104

		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)
380-215538-B-1-A MS	Matrix Spike	105	111	101	100	106	109	115	108
380-215538-C-1-A MSD	Matrix Spike Duplicate	106	102	103	107	107	114	112	118
380-215539-1	HALAWA SHAFT VIEWING POOL	105	111	102	108	107	127	123	118
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	112	113	101	113	110	128	127	125
LCS 380-230570/22-A	Lab Control Sample	105	113	103	104	108	112	114	109
MBL 380-230570/20-A	Method Blank	102	106	101	107	107	106	110	105
MRL 380-230570/21-A	Lab Control Sample	107	110	102	108	107	110	110	108

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFDaA = 13C2 PFDaA
- 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

QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-230570/20-A
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 230570

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		05/30/26 14:54	06/01/26 14:43	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C6 PFDA	107		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C5 PFHxA	105		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C4 PFHpA	99		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C8 PFOA	109		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C9 PFNA	110		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C7 PFUnA	116		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C2 PFDoA	110		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C4 PFBA	102		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C5 PFPeA	106		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C3 PFBS	101		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C3 PFHxS	107		50 - 200	05/30/26 14:54	06/01/26 14:43	1

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QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-230570/20-A
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 230570

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	107		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C2-4:2-FTS	106		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C2-6:2-FTS	110		50 - 200	05/30/26 14:54	06/01/26 14:43	1
13C2-8:2-FTS	105		50 - 200	05/30/26 14:54	06/01/26 14:43	1

Lab Sample ID: LCS 380-230570/22-A
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230570

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	57.7		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	58.2		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	59.7		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	57.8		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	57.7		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	57.4		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	58.4		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	57.4		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	57.9		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	54.5		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	60.2	57.4		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	57.5		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	55.7		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	57.7		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	57.3		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	61.2		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	59.0		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	58.2		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	57.9		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	59.4		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	54.5		ng/L		91	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	55.2		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	53.9		ng/L		90	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	57.6		ng/L		96	70 - 130

QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-230570/22-A
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230570

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	57.7		ng/L		96	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	105		50 - 200				
13C6 PFDA	107		50 - 200				
13C5 PFHxA	107		50 - 200				
13C4 PFHpA	104		50 - 200				
13C8 PFOA	106		50 - 200				
13C9 PFNA	103		50 - 200				
13C7 PFUnA	116		50 - 200				
13C2 PFDoA	109		50 - 200				
13C4 PFBA	105		50 - 200				
13C5 PFPeA	113		50 - 200				
13C3 PFBS	103		50 - 200				
13C3 PFHxS	104		50 - 200				
13C8 PFOS	108		50 - 200				
13C2-4:2-FTS	112		50 - 200				
13C2-6:2-FTS	114		50 - 200				
13C2-8:2-FTS	109		50 - 200				

Lab Sample ID: MRL 380-230570/21-A
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230570

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.99	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.98	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.08	J	ng/L		104	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.91	J	ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.92	J	ng/L		95	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.93	J	ng/L		96	50 - 150

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QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-230570/21-A
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230570

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.13	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.13	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.09	J	ng/L		104	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.08	J	ng/L		103	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.04	J	ng/L		102	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	103		50 - 200
13C7 PFUnA	116		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	110		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	110		50 - 200
13C2-8:2-FTS	108		50 - 200

Lab Sample ID: 380-215538-B-1-A MS
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 230570

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		120	115		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	110		ng/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-215538-B-1-A MS
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 230570

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	116		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	110		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	111		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	110		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	108		ng/L		90	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	115		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	114		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	118		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	111		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	112		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	108		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	110		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	112		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	108		ng/L		90	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	110		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	112		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	112		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	116		ng/L		96	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	111		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	124		50 - 200
13C2 PFDoA	115		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	106		50 - 200

QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-215538-B-1-A MS
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 230570

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	115		50 - 200
13C2-8:2-FTS	108		50 - 200

Lab Sample ID: 380-215538-C-1-A MSD
Matrix: Water
Analysis Batch: 230769

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 230570

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	116		ng/L		97	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	116		ng/L		96	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	116		ng/L		97	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	116		ng/L		96	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	117		ng/L		97	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		120	109		ng/L		90	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	112		ng/L		93	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	109		ng/L		91	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	113		ng/L		94	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	115		ng/L		95	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		120	114		ng/L		94	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	115		ng/L		96	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		120	117		ng/L		98	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	116		ng/L		97	70 - 130	8	30
Perfluorobutanoic acid (PFBA)	<2.0		120	114		ng/L		95	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	110		ng/L		91	70 - 130	8	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	113		ng/L		94	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	123		ng/L		102	70 - 130	9	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	111		ng/L		92	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	111		ng/L		92	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	118		ng/L		98	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	119		ng/L		99	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	117		ng/L		98	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	114		ng/L		95	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	113		ng/L		94	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

<i>Isotope Dilution</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
<i>%Recovery</i>	<i>Qualifier</i>		
13C3 HFPO-DA	104		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	115		50 - 200
13C2 PFDoA	112		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	102		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	118		50 - 200

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

Lab Sample ID: MBL 380-229176/21-A
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229176

<i>Analyte</i>	<i>MBL</i>	<i>MBL</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>Result</i>	<i>Qualifier</i>						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		05/23/26 14:07	05/24/26 20:55	1
<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>%Recovery</i>	<i>Qualifier</i>						
d5-NEtFOSAA	99		70 - 130			05/23/26 14:07	05/24/26 20:55	1
13C2 PFHxA	97		70 - 130			05/23/26 14:07	05/24/26 20:55	1
13C2 PFDA	104		70 - 130			05/23/26 14:07	05/24/26 20:55	1

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QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-229176/21-A
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 229176

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	88	Qualifier	70 - 130	05/23/26 14:07	05/24/26 20:55	1

Lab Sample ID: LCS 380-229176/23-A
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 229176

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	<i>Limits</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>					
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	45.7		ng/L		91		70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.1	48.8		ng/L		97		70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	54.8		ng/L		109		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	45.1		ng/L		90		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	44.9		ng/L		90		70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	49.6		ng/L		99		70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	55.2		ng/L		110		70 - 130
Perfluorooctanoic acid (PFOA)	50.1	49.0		ng/L		98		70 - 130
Perfluorodecanoic acid (PFDA)	50.1	52.5		ng/L		105		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.1	47.7		ng/L		95		70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.1	46.4		ng/L		93		70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	49.1		ng/L		98		70 - 130
Perfluorononanoic acid (PFNA)	50.1	53.7		ng/L		107		70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	50.6		ng/L		101		70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	55.0		ng/L		110		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.1	48.9		ng/L		98		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.1	47.8		ng/L		95		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.1	47.1		ng/L		94		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	87		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	96		70 - 130

QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-229176/22-A
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 229176

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.14	J	ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	1.95	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.14	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.02	J	ng/L		100	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.26	J	ng/L		112	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.92	J	ng/L		95	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.90	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.13	J	ng/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	97		70 - 130
13C2 PFDA	103		70 - 130
13C3-GenX	98		70 - 130

Lab Sample ID: 380-215260-E-1-A MS
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 229176

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	53.2		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.1	54.0		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	54.4		ng/L		109	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	52.4		ng/L		105	70 - 130

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QC Sample Results

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-215260-E-1-A MS
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 229176

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec		
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	54.5		ng/L		109	70 - 130		
Perfluorohexanoic acid (PFHxA)	2.8		50.1	56.3		ng/L		107	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	55.8		ng/L		111	70 - 130		
Perfluorooctanoic acid (PFOA)	<2.0		50.1	53.3		ng/L		103	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		50.1	56.3		ng/L		112	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.1	52.8		ng/L		102	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.1	49.5		ng/L		95	70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	55.6		ng/L		108	70 - 130		
Perfluorononanoic acid (PFNA)	<2.0		50.1	55.3		ng/L		110	70 - 130		
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	48.9		ng/L		98	70 - 130		
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.1	58.2		ng/L		116	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.1	51.9		ng/L		104	70 - 130		
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.1	53.0		ng/L		106	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.1	53.3		ng/L		106	70 - 130		
MS MS											
Surrogate	%Recovery	Qualifier	Limits								
d5-NEtFOSAA	104		70 - 130								
13C2 PFHxA	110		70 - 130								
13C2 PFDA	110		70 - 130								
13C3-GenX	110		70 - 130								

Lab Sample ID: 380-215260-F-1-A MSD
Matrix: Water
Analysis Batch: 229194

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 229176

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	47.6		ng/L		95	70 - 130	11	30	
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.1	51.8		ng/L		100	70 - 130	4	30	
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	51.9		ng/L		104	70 - 130	5	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	47.8		ng/L		95	70 - 130	9	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	48.2		ng/L		96	70 - 130	12	30	
Perfluorohexanoic acid (PFHxA)	2.8		50.1	52.6		ng/L		99	70 - 130	7	30	
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	53.8		ng/L		107	70 - 130	4	30	
Perfluorooctanoic acid (PFOA)	<2.0		50.1	50.4		ng/L		97	70 - 130	6	30	
Perfluorodecanoic acid (PFDA)	<2.0		50.1	50.9		ng/L		102	70 - 130	10	30	

Eurofins Pomona

QC Association Summary

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 229176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-215539-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-229176/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-229176/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-229176/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-215260-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-215260-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 229194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-229176/21-A	Method Blank	Total/NA	Water	EPA 537.1 V2	229176
LCS 380-229176/23-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	229176
MRL 380-229176/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	229176
380-215260-E-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	229176
380-215260-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	229176

Analysis Batch: 229453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-215539-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	229176
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	229176

Prep Batch: 230570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-215539-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-230570/20-A	Method Blank	Total/NA	Water	533	
LCS 380-230570/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-230570/21-A	Lab Control Sample	Total/NA	Water	533	
380-215538-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-215538-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 230769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-215539-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	230570
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	230570
MBL 380-230570/20-A	Method Blank	Total/NA	Water	533	230570
LCS 380-230570/22-A	Lab Control Sample	Total/NA	Water	533	230570
MRL 380-230570/21-A	Lab Control Sample	Total/NA	Water	533	230570
380-215538-B-1-A MS	Matrix Spike	Total/NA	Water	533	230570
380-215538-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	230570

Lab Chronicle

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

Job ID: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-1

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			230570	N8NE	EA POM	05/30/26 14:54
Total/NA	Analysis	533		1	230769	M7ML	EA POM	06/01/26 17:00
Total/NA	Prep	537.1 DW			229176	E9PK	EA POM	05/23/26 14:07
Total/NA	Analysis	EPA 537.1 V2		1	229453	M7ML	EA POM	05/26/26 13:34

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-215539-2

Date Collected: 05/19/26 09:32

Matrix: Water

Date Received: 05/21/26 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			230570	N8NE	EA POM	05/30/26 14:54
Total/NA	Analysis	533		1	230769	M7ML	EA POM	06/01/26 17:20
Total/NA	Prep	537.1 DW			229176	E9PK	EA POM	05/23/26 14:07
Total/NA	Analysis	EPA 537.1 V2		1	229453	M7ML	EA POM	05/26/26 13:43

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: 380-215539-1
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 *

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

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

Method Summary

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

Job ID: 380-215539-1
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: 380-215539-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-215539-1	HALAWA SHAFT VIEWING POOL	Water	05/19/26 09:32	05/21/26 10:05	Hawaii
380-215539-2	FB: HALAWA SHAFT VIEWING POOL	Water	05/19/26 09:32	05/21/26 10:05	Hawaii

- 1
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- 4
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- 7
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- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Chain of Custody Record



Enviro
Ameri



Client Information Client Contact: Kirk Iwamoto Phone: +1 808 748 5840 City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State Zip: HI, 96843 Phone: 808-748-5840 (tel) Email: kiwamoto@hbws.org Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill Site:		Sampler: Patrick Regan Lab PM: Lopez, Maria Phone: +1 808 748 5840 E-Mail: Maria.Lopez@et.eurofins.com Carrier Tracking No(s): State of Origin:		COC No: Page: Page 1 of 1 Job #: 80-215539 COC	
Due Date Requested: TAT Requested (days): RUSH Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #: Project #: 3800111 SSOV#:		Analysis Requested			
Sample Identification HALAWA SHAFT VIEWING POOL FB HALAWA SHAFT VIEWING POOL		Sample Date: 19-May-2026 0932 0932 19-May-2026 0932	Sample Type (C=Comp, G=grab): G G G	Matrix (W=water, S=solid, O=oil, A=air): Water Water Water	Field Filtered Sample (Yes or No): Perform MS/MSD (Yes or No): 537 1_DW_PREC - 537 1 Full List: Y 533 - All Analytes: Z 3 Z 3 1 1
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Special Instructions/QC Requirements: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Empty Kit Relinquished by: Relinquished by: [Redacted] Relinquished by: Relinquished by:		Method of Shipment: <input checked="" type="checkbox"/> Date/Time: 5/20/26 12:05 Date/Time: 5/21/26 1005 Date/Time:			
Custody Seals intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks: 1.6 to 0.0 = 1.6 9.1 = 0.0 7.9 (618A)			



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-215539-1
SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 215539

List Number: 1

Creator: Avila, Ivan

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	
CIO4 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	

