

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-238142-1

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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



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Definitions/Glossary

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

Job ID: 380-238142-1
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: 380-238142-1

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Job Narrative 380-238142-1

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 9/24/2026 9:40 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

PFAS results by EPA 537.1 for HALAWA SHAFT VIEWING POOL (380-238142-1) collected on 09/22/26 are a resample for Halawa Shaft Viewing Pool (380-236913-1) collected on 09/15/26. (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: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-1

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

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-2

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: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-1

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C6 PFDA	95		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C5 PFHxA	92		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C4 PFHpA	90		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C8 PFOA	91		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C9 PFNA	94		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C7 PFUnA	97		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C2 PFDoA	99		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C4 PFBA	96		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C5 PFPeA	91		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C3 PFBS	104		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C3 PFHxS	102		50 - 200	09/25/26 07:11	09/25/26 19:12	1

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Client Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-1

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C2-4:2-FTS	114		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C2-6:2-FTS	102		50 - 200	09/25/26 07:11	09/25/26 19:12	1
13C2-8:2-FTS	101		50 - 200	09/25/26 07:11	09/25/26 19:12	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		09/24/26 18:58	09/25/26 14:18	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	91		70 - 130	09/24/26 18:58	09/25/26 14:18	1
13C2 PFHxA	99		70 - 130	09/24/26 18:58	09/25/26 14:18	1
13C2 PFDA	100		70 - 130	09/24/26 18:58	09/25/26 14:18	1
13C3-GenX	101		70 - 130	09/24/26 18:58	09/25/26 14:18	1

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-2

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

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		09/25/26 07:11	09/25/26 19:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1

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Client Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-2

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

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		09/25/26 07:11	09/25/26 19:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/25/26 07:11	09/25/26 19:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C6 PFDA	107		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C5 PFHxA	104		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C4 PFHpA	107		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C8 PFOA	101		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C9 PFNA	107		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C7 PFUnA	104		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C2 PFDoA	106		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C4 PFBA	103		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C5 PFPeA	99		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C3 PFBS	101		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C3 PFHxS	105		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C8 PFOS	102		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C2-4:2-FTS	99		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C2-6:2-FTS	96		50 - 200	09/25/26 07:11	09/25/26 19:22	1
13C2-8:2-FTS	100		50 - 200	09/25/26 07:11	09/25/26 19:22	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-2

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

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		09/24/26 18:58	09/25/26 14:39	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/24/26 18:58	09/25/26 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130	09/24/26 18:58	09/25/26 14:39	1
13C2 PFHxA	98		70 - 130	09/24/26 18:58	09/25/26 14:39	1
13C2 PFDA	101		70 - 130	09/24/26 18:58	09/25/26 14:39	1
13C3-GenX	94		70 - 130	09/24/26 18:58	09/25/26 14:39	1

Action Limit Summary

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-1

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)	3.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		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)	3.6		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: 380-238142-2

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: 380-238142-1
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)
380-238128-B-1-A MS	Matrix Spike	95	108	101	103
380-238128-B-1-B MSD	Matrix Spike Duplicate	97	108	111	108
380-238142-1	HALAWA SHAFT VIEWING POOL	91	99	100	101
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	106	98	101	94
LCS 380-254589/18-A	Lab Control Sample	93	101	101	94
MBL 380-254589/16-A	Method Blank	103	108	109	100
MRL 380-254589/17-A	Lab Control Sample	89	94	96	89

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: 380-238142-1
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)
380-238128-A-1-B MS	Matrix Spike	108	107	107	105	103	105	106	109
380-238128-A-1-C MSD	Matrix Spike Duplicate	111	110	111	109	107	108	109	111
380-238142-1	HALAWA SHAFT VIEWING POOL	83	95	92	90	91	94	97	99
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	95	107	104	107	101	107	104	106
LCS 380-254718/22-A	Lab Control Sample	105	106	106	108	105	104	105	111
MBL 380-254718/20-A	Method Blank	93	104	101	103	102	100	105	109
MRL 380-254718/21-A	Lab Control Sample	95	103	105	102	104	104	101	108

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)
380-238128-A-1-B MS	Matrix Spike	104	102	102	103	103	100	91	97
380-238128-A-1-C MSD	Matrix Spike Duplicate	109	108	108	107	104	101	95	98
380-238142-1	HALAWA SHAFT VIEWING POOL	96	91	104	102	105	114	102	101
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	103	99	101	105	102	99	96	100
LCS 380-254718/22-A	Lab Control Sample	104	102	110	108	107	101	100	102
MBL 380-254718/20-A	Method Blank	106	105	107	109	103	107	103	107
MRL 380-254718/21-A	Lab Control Sample	105	105	105	106	106	107	99	101

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: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-254718/20-A

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 254718

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		09/25/26 07:11	09/25/26 17:46	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C6 PFDA	104		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C5 PFHxA	101		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C4 PFHpA	103		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C8 PFOA	102		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C9 PFNA	100		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C7 PFUnA	105		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C2 PFDoA	109		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C4 PFBA	106		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C5 PFPeA	105		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C3 PFBS	107		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C3 PFHxS	109		50 - 200	09/25/26 07:11	09/25/26 17:46	1

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-254718/20-A

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 254718

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	103		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C2-4:2-FTS	107		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C2-6:2-FTS	103		50 - 200	09/25/26 07:11	09/25/26 17:46	1
13C2-8:2-FTS	107		50 - 200	09/25/26 07:11	09/25/26 17:46	1

Lab Sample ID: LCS 380-254718/22-A

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 254718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	118	103		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	118	113		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	109		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	112		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	112		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	118	112		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	118	109		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	110		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	115		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	118	112		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	118	111		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	111		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	118	110		ng/L		93	70 - 130
Perfluoroundecanoic acid (PFUnA)	118	114		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	118	113		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	115		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	108		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	118	110		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	118	107		ng/L		90	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	109		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	115		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	118	112		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	113		ng/L		96	70 - 130

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-254718/22-A

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 254718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	118	111		ng/L		94	70 - 130
		LCS	LCS				
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	105		50 - 200				
13C6 PFDA	106		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	108		50 - 200				
13C8 PFOA	105		50 - 200				
13C9 PFNA	104		50 - 200				
13C7 PFUnA	105		50 - 200				
13C2 PFDoA	111		50 - 200				
13C4 PFBA	104		50 - 200				
13C5 PFPeA	102		50 - 200				
13C3 PFBS	110		50 - 200				
13C3 PFHxS	108		50 - 200				
13C8 PFOS	107		50 - 200				
13C2-4:2-FTS	101		50 - 200				
13C2-6:2-FTS	100		50 - 200				
13C2-8:2-FTS	102		50 - 200				

Lab Sample ID: MRL 380-254718/21-A

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 254718

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	2.07	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	1.97	2.19	J	ng/L		111	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	2.02	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	2.09	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	2.24	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.15	J	ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.21	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	2.15	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	2.25	J	ng/L		114	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	2.24	J	ng/L		114	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.20	J	ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	2.17	J	ng/L		110	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.21	J	ng/L		112	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	2.33	J	ng/L		118	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.26	J	ng/L		114	50 - 150

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-254718/21-A

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 254718

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.17	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.17	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.13	J	ng/L		108	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.43	J	ng/L		123	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	2.16	J	ng/L		109	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	2.04	J	ng/L		103	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	2.14	J	ng/L		109	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	2.17	J	ng/L		110	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	2.13	J	ng/L		108	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.99	J	ng/L		101	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: 380-238128-A-1-B MS

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 254718

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		119	103		ng/L		86	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		119	113		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		119	113		ng/L		95	70 - 130

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-238128-A-1-B MS

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 254718

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		119	113		ng/L		95	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		119	116		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		119	110		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		119	110		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		119	116		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		119	114		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		119	117		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		119	111		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		119	110		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		119	114		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		119	113		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		119	114		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		119	114		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		119	115		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		119	111		ng/L		93	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		119	116		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		119	110		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		119	113		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		119	113		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		119	112		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		119	111		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		119	111		ng/L		94	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	108		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	105		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	102		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	103		50 - 200

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-238128-A-1-B MS

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 254718

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	100		50 - 200
13C2-6:2-FTS	91		50 - 200
13C2-8:2-FTS	97		50 - 200

Lab Sample ID: 380-238128-A-1-C MSD

Matrix: Water

Analysis Batch: 254859

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 254718

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 (11CI-PF3OUdS)	<2.0		118	102		ng/L		86	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<2.0		118	110		ng/L		93	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	110		ng/L		93	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	107		ng/L		90	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	109		ng/L		92	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		118	106		ng/L		90	70 - 130	4	30
Perfluorododecanoic acid (PFDaA)	<2.0		118	111		ng/L		94	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		118	110		ng/L		93	70 - 130	6	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	109		ng/L		92	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		118	110		ng/L		93	70 - 130	6	30
Perfluorononanoic acid (PFNA)	<2.0		118	109		ng/L		92	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	111		ng/L		94	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		118	112		ng/L		95	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		118	111		ng/L		94	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		118	107		ng/L		91	70 - 130	6	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	115		ng/L		97	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	110		ng/L		93	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	110		ng/L		93	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	107		ng/L		90	70 - 130	8	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		118	106		ng/L		89	70 - 130	4	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	109		ng/L		92	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	111		ng/L		94	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		118	111		ng/L		94	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	111		ng/L		94	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	106		ng/L		90	70 - 130	5	30

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	111		50 - 200
13C6 PFDA	110		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	101		50 - 200
13C2-6:2-FTS	95		50 - 200
13C2-8:2-FTS	98		50 - 200

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

Lab Sample ID: MBL 380-254589/16-A
Matrix: Water
Analysis Batch: 254723

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254589

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		09/24/26 18:58	09/25/26 12:06	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	103		70 - 130			09/24/26 18:58	09/25/26 12:06	1
13C2 PFHxA	108		70 - 130			09/24/26 18:58	09/25/26 12:06	1
13C2 PFDA	109		70 - 130			09/24/26 18:58	09/25/26 12:06	1

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-254589/16-A
Matrix: Water
Analysis Batch: 254723

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254589

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	100		70 - 130	09/24/26 18:58	09/25/26 12:06	1

Lab Sample ID: LCS 380-254589/18-A
Matrix: Water
Analysis Batch: 254723

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 254589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	49.1	45.9		ng/L		93	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	49.1	48.4		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.1	50.2		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.1	46.3		ng/L		94	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.1	48.7		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	49.1	49.4		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	49.1	51.4		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	49.1	51.2		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	49.1	50.2		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.1	50.7		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.1	49.4		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.1	50.7		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	49.1	50.8		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.1	44.0		ng/L		90	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.1	53.9		ng/L		110	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.1	50.0		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.1	49.2		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.1	48.1		ng/L		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	93		70 - 130
13C2 PFHxA	101		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	94		70 - 130

QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-254589/17-A

Matrix: Water

Analysis Batch: 254723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 254589

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	1.96	1.75	J	ng/L		89	50 - 150
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	1.96	2.11	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	1.92	J	ng/L		98	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	1.99	J	ng/L		102	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	1.92	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	1.98	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	1.97	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	1.92	J	ng/L		98	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	1.86	J	ng/L		95	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.23	J	ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.07	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	1.88	J	ng/L		96	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.02	J	ng/L		103	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	1.76	J	ng/L		90	50 - 150
Perfluorotridecanoic acid (PFTrDA)	1.96	1.95	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	1.91	J	ng/L		97	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.98	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.83	J	ng/L		93	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	89		70 - 130
13C2 PFHxA	94		70 - 130
13C2 PFDA	96		70 - 130
13C3-GenX	89		70 - 130

Lab Sample ID: 380-238128-B-1-A MS

Matrix: Water

Analysis Batch: 254723

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 254589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		49.1	48.8		ng/L		99	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.1	50.4		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		49.1	49.7		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.1	52.5		ng/L		107	70 - 130

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QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-238128-B-1-A MS

Matrix: Water

Analysis Batch: 254723

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 254589

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits		
	Result	Qualifier	Added	Result	Qualifier				Limits			
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	<2.0		49.1	49.9		ng/L		102	70 - 130			
Perfluorohexanoic acid (PFHxA)	<2.0		49.1	50.5		ng/L		103	70 - 130			
Perfluorododecanoic acid (PFDoA)	<2.0		49.1	50.8		ng/L		103	70 - 130			
Perfluorooctanoic acid (PFOA)	<2.0		49.1	48.9		ng/L		100	70 - 130			
Perfluorodecanoic acid (PFDA)	<2.0		49.1	48.6		ng/L		99	70 - 130			
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.1	52.9		ng/L		108	70 - 130			
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.1	53.6		ng/L		109	70 - 130			
Perfluoroheptanoic acid (PFHpA)	<2.0		49.1	50.1		ng/L		102	70 - 130			
Perfluorononanoic acid (PFNA)	<2.0		49.1	50.3		ng/L		102	70 - 130			
Perfluorotetradecanoic acid (PFTA)	<2.0		49.1	41.8		ng/L		85	70 - 130			
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.1	52.4		ng/L		107	70 - 130			
9-Chlorohexadecafluoro-3-oxan onane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.1	50.8		ng/L		103	70 - 130			
11-Chloroeicosafluoro-3-oxaund ecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.1	53.0		ng/L		108	70 - 130			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.1	51.6		ng/L		105	70 - 130			
		MS	MS									
Surrogate	%Recovery	Qualifier	Limits									
d5-NEtFOSAA	95		70 - 130									
13C2 PFHxA	108		70 - 130									
13C2 PFDA	101		70 - 130									
13C3-GenX	103		70 - 130									

Lab Sample ID: 380-238128-B-1-B MSD

Matrix: Water

Analysis Batch: 254723

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 254589

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		49.1	50.2		ng/L		102	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.1	49.4		ng/L		100	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		49.1	51.0		ng/L		104	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.1	50.8		ng/L		103	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.1	47.7		ng/L		97	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		49.1	55.0		ng/L		112	70 - 130	8	30
Perfluorododecanoic acid (PFDoA)	<2.0		49.1	49.9		ng/L		102	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		49.1	54.3		ng/L		111	70 - 130	11	30
Perfluorodecanoic acid (PFDA)	<2.0		49.1	52.4		ng/L		107	70 - 130	8	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-238128-B-1-B MSD

Matrix: Water

Analysis Batch: 254723

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 254589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.1	52.0		ng/L		106	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.1	51.5		ng/L		105	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		49.1	51.9		ng/L		106	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		49.1	51.3		ng/L		104	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		49.1	45.4		ng/L		92	70 - 130	8	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		49.1	52.2		ng/L		106	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.1	47.8		ng/L		97	70 - 130	6	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.1	50.2		ng/L		102	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.1	52.8		ng/L		107	70 - 130	2	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	97		70 - 130								
13C2 PFHxA	108		70 - 130								
13C2 PFDA	111		70 - 130								
13C3-GenX	108		70 - 130								

QC Association Summary

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 254589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-238142-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-254589/16-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-254589/18-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-254589/17-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-238128-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-238128-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 254718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-238142-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-254718/20-A	Method Blank	Total/NA	Water	533	
LCS 380-254718/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-254718/21-A	Lab Control Sample	Total/NA	Water	533	
380-238128-A-1-B MS	Matrix Spike	Total/NA	Water	533	
380-238128-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 254723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-238142-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	254589
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	EPA 537.1 V2	254589
MBL 380-254589/16-A	Method Blank	Total/NA	Water	EPA 537.1 V2	254589
LCS 380-254589/18-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	254589
MRL 380-254589/17-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	254589
380-238128-B-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	254589
380-238128-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	254589

Analysis Batch: 254859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-238142-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	254718
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	254718
MBL 380-254718/20-A	Method Blank	Total/NA	Water	533	254718
LCS 380-254718/22-A	Lab Control Sample	Total/NA	Water	533	254718
MRL 380-254718/21-A	Lab Control Sample	Total/NA	Water	533	254718
380-238128-A-1-B MS	Matrix Spike	Total/NA	Water	533	254718
380-238128-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	254718

Lab Chronicle

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

Job ID: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-1

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			254718	XTD8	EA POM	09/25/26 07:11
Total/NA	Analysis	533		1	254859	M7ML	EA POM	09/25/26 19:12
Total/NA	Prep	537.1 DW			254589	E9PK	EA POM	09/24/26 18:58
Total/NA	Analysis	EPA 537.1 V2		1	254723	M7ML	EA POM	09/25/26 14:18

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-238142-2

Date Collected: 09/22/26 09:30

Matrix: Water

Date Received: 09/24/26 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			254718	XTD8	EA POM	09/25/26 07:11
Total/NA	Analysis	533		1	254859	M7ML	EA POM	09/25/26 19:22
Total/NA	Prep	537.1 DW			254589	E9PK	EA POM	09/24/26 18:58
Total/NA	Analysis	EPA 537.1 V2		1	254723	M7ML	EA POM	09/25/26 14:39

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: 380-238142-1
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	01-31-27

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

Method Summary

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

Job ID: 380-238142-1
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: 380-238142-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-238142-1	HALAWA SHAFT VIEWING POOL	Water	09/22/26 09:30	09/24/26 09:40	Hawaii
380-238142-2	FB: HALAWA SHAFT VIEWING POOL	Water	09/22/26 09:30	09/24/26 09:40	Hawaii

[illegible]

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-238142-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 238142

List Source: Eurofins Pomona

List Number: 1

Creator: Del Rosario, Michael

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).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	