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ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Wells P1

JOB NUMBER

380-202540-1

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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: 380-202540-1
SDG: PFAS: Halawa Wells P1

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: 380-202540-1

Job ID: 380-202540-1

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Job Narrative 380-202540-1

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 3/11/2026 9:30 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 1.4°C.

PFAS

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: 380-202540-1
SDG: PFAS: Halawa Wells P1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)
PWSID Number: HI0000331

Lab Sample ID: 380-202540-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.7		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)	3.0		2.0	ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB: HALAWA WELLS P1 (331-023-WL065)
PWSID Number: HI0000331

Lab Sample ID: 380-202540-2

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: 380-202540-1
SDG: PFAS: Halawa Wells P1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-1

Date Collected: 03/09/26 10:26

Matrix: Drinking Water

Date Received: 03/11/26 09:30

PWSID Number: HI0000331

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		03/19/26 13:35	03/20/26 10:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 10:54	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C6 PFDA	105		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C5 PFHxA	103		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C4 PFHpA	108		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C8 PFOA	109		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C9 PFNA	106		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C7 PFUnA	102		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C2 PFDoA	104		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C4 PFBA	105		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C5 PFPeA	106		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C3 PFBS	110		50 - 200			03/19/26 13:35	03/20/26 10:54	1
13C3 PFHxS	104		50 - 200			03/19/26 13:35	03/20/26 10:54	1

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Client Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-1

Date Collected: 03/09/26 10:26

Matrix: Drinking Water

Date Received: 03/11/26 09:30

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	108		50 - 200	03/19/26 13:35	03/20/26 10:54	1
13C2-4:2-FTS	103		50 - 200	03/19/26 13:35	03/20/26 10:54	1
13C2-6:2-FTS	101		50 - 200	03/19/26 13:35	03/20/26 10:54	1
13C2-8:2-FTS	89		50 - 200	03/19/26 13:35	03/20/26 10:54	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		03/13/26 13:55	03/15/26 14:21	1
Perfluorooctanesulfonic acid (PFOS)	2.7		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorohexanesulfonic acid (PFHxS)	3.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:21	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	106		70 - 130	03/13/26 13:55	03/15/26 14:21	1		
13C2 PFHxA	105		70 - 130	03/13/26 13:55	03/15/26 14:21	1		
13C2 PFDA	108		70 - 130	03/13/26 13:55	03/15/26 14:21	1		
13C3-GenX	100		70 - 130	03/13/26 13:55	03/15/26 14:21	1		

Client Sample ID: FB: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-2

Date Collected: 03/09/26 10:26

Matrix: Water

Date Received: 03/11/26 09:30

PWSID Number: HI0000331

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		03/19/26 13:35	03/20/26 11:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1

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Client Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

Client Sample ID: FB: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-2

Date Collected: 03/09/26 10:26

Matrix: Water

Date Received: 03/11/26 09:30

PWSID Number: HI0000331

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		03/19/26 13:35	03/20/26 11:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		03/19/26 13:35	03/20/26 11:03	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C6 PFDA	110		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C5 PFHxA	115		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C4 PFHpA	119		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C8 PFOA	116		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C9 PFNA	115		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C7 PFUnA	105		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C2 PFDoA	108		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C4 PFBA	108		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C5 PFPeA	108		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C3 PFBS	104		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C3 PFHxS	105		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C8 PFOS	109		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C2-4:2-FTS	109		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C2-6:2-FTS	98		50 - 200			03/19/26 13:35	03/20/26 11:03	1
13C2-8:2-FTS	98		50 - 200			03/19/26 13:35	03/20/26 11:03	1

Client Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

Client Sample ID: FB: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-2

Date Collected: 03/09/26 10:26

Matrix: Water

Date Received: 03/11/26 09:30

PWSID Number: HI0000331

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		03/13/26 13:55	03/15/26 14:30	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		03/13/26 13:55	03/15/26 14:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130			03/13/26 13:55	03/15/26 14:30	1
13C2 PFHxA	102		70 - 130			03/13/26 13:55	03/15/26 14:30	1
13C2 PFDA	103		70 - 130			03/13/26 13:55	03/15/26 14:30	1
13C3-GenX	93		70 - 130			03/13/26 13:55	03/15/26 14:30	1

Action Limit Summary

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-1

PWSID Number: HI0000331

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)	2.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		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)	2.7		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)	3.0		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

Client Sample ID: FB: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-2

PWSID Number: HI0000331

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: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Matrix: Drinking 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)
380-202540-1	HALAWA WELLS P1 (331-023-WL0	106	105	108	100

Surrogate Legend

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

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)
380-202540-2	FB: HALAWA WELLS P1 (331-023-\	99	102	103	93

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: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-202540-1	HALAWA WELLS P1 (331-023-WL0)	103	105	103	108	109	106	102	104

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-202540-1	HALAWA WELLS P1 (331-023-WL0)	105	106	110	104	108	103	101	89

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-202535-B-1-A MS	Matrix Spike	125	111	110	111	109	115	109	110
380-202535-C-1-A MSD	Matrix Spike Duplicate	119	111	111	112	114	113	112	109
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	100	110	115	119	116	115	105	108
LCS 380-214343/22-A	Lab Control Sample	112	109	109	108	111	110	110	111
MBL 380-214343/20-A	Method Blank	109	115	111	114	115	115	110	111
MRL 380-214343/21-A	Lab Control Sample	103	111	116	115	121	117	109	115

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-202535-B-1-A MS	Matrix Spike	115	115	121	116	121	118	109	105
380-202535-C-1-A MSD	Matrix Spike Duplicate	119	112	116	112	110	109	106	106
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	108	108	104	105	109	109	98	98
LCS 380-214343/22-A	Lab Control Sample	116	114	114	111	112	106	103	97
MBL 380-214343/20-A	Method Blank	115	115	115	116	120	122	112	105
MRL 380-214343/21-A	Lab Control Sample	114	115	113	110	112	110	102	102

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA

Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFD_oA = 13C2 PFD_oA
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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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QC Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-214343/20-A
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214343

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		03/19/26 13:35	03/20/26 08:20	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	109		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C6 PFDA	115		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C5 PFHxA	111		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C4 PFHpA	114		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C8 PFOA	115		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C9 PFNA	115		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C7 PFUnA	110		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C2 PFDoA	111		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C4 PFBA	115		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C5 PFPeA	115		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C3 PFBS	115		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C3 PFHxS	116		50 - 200	03/19/26 13:35	03/20/26 08:20	1

Eurofins Pomona

QC Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-214343/20-A
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214343

<i>Isotope Dilution</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>				
13C8 PFOS	120		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C2-4:2-FTS	122		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C2-6:2-FTS	112		50 - 200	03/19/26 13:35	03/20/26 08:20	1
13C2-8:2-FTS	105		50 - 200	03/19/26 13:35	03/20/26 08:20	1

Lab Sample ID: LCS 380-214343/22-A
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214343

<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>Added</i>	<i>Result</i>	<i>Qualifier</i>				<i>Limits</i>
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	105		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	108		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	111		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	112		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	109		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	120	108		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	120	107		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	118		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	109		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	120	121		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	120	110		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	108		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	120	110		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	109		ng/L		91	70 - 130
Perfluorobutanoic acid (PFBA)	120	105		ng/L		88	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	120		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	112		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	124		ng/L		103	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	111		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	108		ng/L		90	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	113		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	120	112		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	109		ng/L		91	70 - 130

QC Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: LCS 380-214343/22-A
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214343

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	113		ng/L		94	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	112		50 - 200				
13C6 PFDA	109		50 - 200				
13C5 PFHxA	109		50 - 200				
13C4 PFHpA	108		50 - 200				
13C8 PFOA	111		50 - 200				
13C9 PFNA	110		50 - 200				
13C7 PFUnA	110		50 - 200				
13C2 PFDoA	111		50 - 200				
13C4 PFBA	116		50 - 200				
13C5 PFPeA	114		50 - 200				
13C3 PFBS	114		50 - 200				
13C3 PFHxS	111		50 - 200				
13C8 PFOS	112		50 - 200				
13C2-4:2-FTS	106		50 - 200				
13C2-6:2-FTS	103		50 - 200				
13C2-8:2-FTS	97		50 - 200				

Lab Sample ID: MRL 380-214343/21-A
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214343

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.02	J	ng/L		101	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.33	J	ng/L		116	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.96	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.01	J	ng/L		101	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.99	J	ng/L		99	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-214343/21-A
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214343

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.18	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.27	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.54	J	ng/L		127	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.37	J	ng/L		118	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.01	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.07	J	ng/L		103	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.08	J	ng/L		104	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	116		50 - 200
13C4 PFHpA	115		50 - 200
13C8 PFOA	121		50 - 200
13C9 PFNA	117		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	115		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	113		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	112		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: 380-202535-B-1-A MS
Matrix: Water
Analysis Batch: 214583

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214343

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	102		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	104		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	108		ng/L		90	70 - 130

QC Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-202535-B-1-A MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 214583

Prep Batch: 214343

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Hexafluoropropylene Oxide	<2.0		120	115		ng/L		96	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	107		ng/L		89	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	112		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	115		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	114		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	119		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	105		ng/L		87	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	103		ng/L		85	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	116		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	110		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	111		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	102		ng/L		85	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	122		ng/L		101	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	114		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	112		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	104		ng/L		87	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	111		ng/L		92	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	125		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	111		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	115		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	110		50 - 200
13C4 PFBA	115		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	121		50 - 200
13C3 PFHxS	116		50 - 200
13C8 PFOS	121		50 - 200

QC Sample Results

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-202535-B-1-A MS

Matrix: Water

Analysis Batch: 214583

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 214343

<i>Isotope Dilution</i>	<i>MS MS</i>	<i>Limits</i>
<i>%Recovery</i>	<i>Qualifier</i>	
13C2-4:2-FTS	118	50 - 200
13C2-6:2-FTS	109	50 - 200
13C2-8:2-FTS	105	50 - 200

Lab Sample ID: 380-202535-C-1-A MSD

Matrix: Water

Analysis Batch: 214583

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 214343

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	112		ng/L		93	70 - 130	9	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	112		ng/L		93	70 - 130	7	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	109		ng/L		91	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	117		ng/L		97	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	111		ng/L		92	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		120	110		ng/L		91	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	114		ng/L		94	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	116		ng/L		96	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	114		ng/L		95	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	116		ng/L		95	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		120	108		ng/L		90	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	113		ng/L		94	70 - 130	9	30
Perfluorooctanoic acid (PFOA)	<2.0		120	112		ng/L		93	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	107		ng/L		89	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		120	105		ng/L		87	70 - 130	5	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	109		ng/L		90	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	117		ng/L		97	70 - 130	13	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	116		ng/L		96	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	123		ng/L		102	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	108		ng/L		90	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	108		ng/L		89	70 - 130	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	115		ng/L		95	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	115		ng/L		95	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	118		ng/L		98	70 - 130	12	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	117		ng/L		97	70 - 130	5	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-202540-1
 SDG: PFAS: Halawa Wells P1

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

<i>Isotope Dilution</i>	<i>MSD MSD</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C3 HFPO-DA	119		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	112		50 - 200
13C8 PFOA	114		50 - 200
13C9 PFNA	113		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	119		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	116		50 - 200
13C3 PFHxS	112		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	106		50 - 200

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QC Association Summary

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

Job ID: 380-202540-1
 SDG: PFAS: Halawa Wells P1

LCMS

Prep Batch: 213083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-202540-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	537.1 DW	
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	537.1 DW	

Analysis Batch: 213260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-202540-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	EPA 537.1 V2	213083
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	EPA 537.1 V2	213083

Prep Batch: 214343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-202540-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	
MBL 380-214343/20-A	Method Blank	Total/NA	Water	533	
LCS 380-214343/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-214343/21-A	Lab Control Sample	Total/NA	Water	533	
380-202535-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-202535-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 214583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-202540-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	214343
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	214343
MBL 380-214343/20-A	Method Blank	Total/NA	Water	533	214343
LCS 380-214343/22-A	Lab Control Sample	Total/NA	Water	533	214343
MRL 380-214343/21-A	Lab Control Sample	Total/NA	Water	533	214343
380-202535-B-1-A MS	Matrix Spike	Total/NA	Water	533	214343
380-202535-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	214343

Lab Chronicle

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

Job ID: 380-202540-1
 SDG: PFAS: Halawa Wells P1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-1

Date Collected: 03/09/26 10:26

Matrix: Drinking Water

Date Received: 03/11/26 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			214343	E2HD	EA POM	03/19/26 13:35
Total/NA	Analysis	533		1	214583	SZ9R	EA POM	03/20/26 10:54
Total/NA	Prep	537.1 DW			213083	N8NE	EA POM	03/13/26 13:55
Total/NA	Analysis	EPA 537.1 V2		1	213260	M7ML	EA POM	03/15/26 14:21

Client Sample ID: FB: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-202540-2

Date Collected: 03/09/26 10:26

Matrix: Water

Date Received: 03/11/26 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			214343	E2HD	EA POM	03/19/26 13:35
Total/NA	Analysis	533		1	214583	SZ9R	EA POM	03/20/26 11:03
Total/NA	Prep	537.1 DW			213083	N8NE	EA POM	03/13/26 13:55
Total/NA	Analysis	EPA 537.1 V2		1	213260	M7ML	EA POM	03/15/26 14:30

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: 380-202540-1
SDG: PFAS: Halawa Wells P1

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 *

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

Method Summary

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

Job ID: 380-202540-1
SDG: PFAS: Halawa Wells P1

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: 380-202540-1
SDG: PFAS: Halawa Wells P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-202540-1	HALAWA WELLS P1 (331-023-WL065)	Drinking Water	03/09/26 10:26	03/11/26 09:30	HI0000331
380-202540-2	FB: HALAWA WELLS P1 (331-023-WL065)	Water	03/09/26 10:26	03/11/26 09:30	HI0000331

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-202540-1
SDG Number: PFAS: Halawa Wells P1

Login Number: 202540

List Number: 1

Creator: Del Rosario, Michael

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

