

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Wells P1

JOB NUMBER

380-222442-1

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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: 380-222442-1
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: 380-222442-1

Job ID: 380-222442-1

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Job Narrative 380-222442-1

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 7/1/2026 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 3.7°C.

PFAS

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results: Halawa Wells P1 (331-023-WL065) (380-222442-1). (XWB4)

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

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Detection Summary

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.9		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	3.9		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanoic acid (PFHxA)	3.4		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L	1		EPA 537.1 V2	Total/NA

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

Lab Sample ID: 380-222442-2

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: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-1

Date Collected: 06/29/26 10:23

Matrix: Drinking Water

Date Received: 07/01/26 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		07/01/26 16:11	07/02/26 12:41	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorohexanesulfonic acid (PFHxS)	2.9		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoropentanoic acid (PFPeA)	3.9		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C6 PFDA	100		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C5 PFHxA	109		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C4 PFHpA	110		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C8 PFOA	109		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C9 PFNA	107		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C7 PFUnA	87		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C2 PFDoA	96		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C4 PFBA	107		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C5 PFPeA	109		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C3 PFBS	104		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C3 PFHxS	104		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C8 PFOS	107		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C2-4:2-FTS	108		50 - 200	07/01/26 16:11	07/02/26 12:41	1
13C2-6:2-FTS	110		50 - 200	07/01/26 16:11	07/02/26 12:41	1

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Client Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-1

Date Collected: 06/29/26 10:23

Matrix: Drinking Water

Date Received: 07/01/26 09:40

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	98		50 - 200	07/01/26 16:11	07/02/26 12:41	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		07/02/26 10:09	07/06/26 15:53	1
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorohexanoic acid (PFHxA)	3.4		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 15:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130			07/02/26 10:09	07/06/26 15:53	1
13C2 PFHxA	106		70 - 130			07/02/26 10:09	07/06/26 15:53	1
13C2 PFDA	109		70 - 130			07/02/26 10:09	07/06/26 15:53	1
13C3-GenX	104		70 - 130			07/02/26 10:09	07/06/26 15:53	1

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

Lab Sample ID: 380-222442-2

Date Collected: 06/29/26 10:23

Matrix: Water

Date Received: 07/01/26 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		07/01/26 16:11	07/02/26 12:50	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1

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Client Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-2

Date Collected: 06/29/26 10:23

Matrix: Water

Date Received: 07/01/26 09:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/01/26 16:11	07/02/26 12:50	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	101		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C6 PFDA	103		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C5 PFHxA	105		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C4 PFHpA	102		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C8 PFOA	105		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C9 PFNA	107		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C7 PFUnA	100		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C2 PFDoA	105		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C4 PFBA	104		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C5 PFPeA	102		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C3 PFBS	111		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C3 PFHxS	102		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C8 PFOS	107		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C2-4:2-FTS	108		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C2-6:2-FTS	102		50 - 200	07/01/26 16:11	07/02/26 12:50	1
13C2-8:2-FTS	98		50 - 200	07/01/26 16:11	07/02/26 12:50	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		07/02/26 10:09	07/06/26 16:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-2

Date Collected: 06/29/26 10:23

Matrix: Water

Date Received: 07/01/26 09:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/02/26 10:09	07/06/26 16:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			07/02/26 10:09	07/06/26 16:02	1
13C2 PFHxA	105		70 - 130			07/02/26 10:09	07/06/26 16:02	1
13C2 PFDA	97		70 - 130			07/02/26 10:09	07/06/26 16:02	1
13C3-GenX	99		70 - 130			07/02/26 10:09	07/06/26 16:02	1

Action Limit Summary

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		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)	2.6		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		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: 380-222442-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-222442-1
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)				
380-222442-1	HALAWA WELLS P1 (331-023-V)	114	106	109	104				

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)				
380-222428-B-1-A MS	Matrix Spike	101	104	103	104				
380-222428-C-1-A MSD	Matrix Spike Duplicate	108	104	101	103				
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	111	105	97	99				
LCS 380-237516/21-A	Lab Control Sample	104	103	101	94				
MBL 380-237516/19-A	Method Blank	119	108	111	106				
MRL 380-237516/20-A	Lab Control Sample	110	106	103	96				

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: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Matrix: Drinking 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)
380-222442-1	HALAWA WELLS P1 (331-023-V)	103	100	109	110	109	107	87	96
		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)
380-222442-1	HALAWA WELLS P1 (331-023-V)	107	109	104	104	107	108	110	98

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

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)
380-222428-E-1-A MS	Matrix Spike	108	107	100	104	106	104	104	110
380-222428-F-1-A MSD	Matrix Spike Duplicate	121	115	113	113	117	114	113	118
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	101	103	105	102	105	107	100	105
LCS 380-237361/22-A	Lab Control Sample	124	123	117	119	124	116	123	132
MBL 380-237361/20-A	Method Blank	112	112	111	116	115	112	107	118
MRL 380-237361/21-A	Lab Control Sample	115	116	117	118	121	118	116	123
		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)
380-222428-E-1-A MS	Matrix Spike	107	100	96	94	103	83	80	85
380-222428-F-1-A MSD	Matrix Spike Duplicate	116	111	105	101	108	90	87	91
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	104	102	111	102	107	108	102	98
LCS 380-237361/22-A	Lab Control Sample	117	108	107	107	114	90	89	97
MBL 380-237361/20-A	Method Blank	113	105	104	106	111	95	88	96
MRL 380-237361/21-A	Lab Control Sample	120	116	109	113	118	103	102	97

Surrogate Legend

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

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Isotope Dilution Summary

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

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

QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-237361/20-A

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 237361

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.37		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		07/01/26 16:11	07/02/26 06:57	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	112		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C6 PFDA	112		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C5 PFHxA	111		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C4 PFHpA	116		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C8 PFOA	115		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C9 PFNA	112		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C7 PFUnA	107		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C2 PFDoA	118		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C4 PFBA	113		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C5 PFPeA	105		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C3 PFBS	104		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C3 PFHxS	106		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C8 PFOS	111		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C2-4:2-FTS	95		50 - 200	07/01/26 16:11	07/02/26 06:57	1
13C2-6:2-FTS	88		50 - 200	07/01/26 16:11	07/02/26 06:57	1

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-237361/20-A

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 237361

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	96		50 - 200	07/01/26 16:11	07/02/26 06:57	1

Lab Sample ID: LCS 380-237361/22-A

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	118	109		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	118	102		ng/L		86	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	111		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	106		ng/L		89	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	110		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	118	106		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	118	108		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	108		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	113		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	118	108		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	118	115		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	110		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	118	103		ng/L		87	70 - 130
Perfluoroundecanoic acid (PFUnA)	118	108		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	118	107		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	109		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	107		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	116		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	118	101		ng/L		85	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	118	111		ng/L		94	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	110		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	112		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	118	110		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	108		ng/L		92	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	118	113		ng/L		96	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	124		50 - 200
13C6 PFDA	123		50 - 200
13C5 PFHxA	117		50 - 200

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: LCS 380-237361/22-A

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237361

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C4 PFHpA	119		50 - 200
13C8 PFOA	124		50 - 200
13C9 PFNA	116		50 - 200
13C7 PFUnA	123		50 - 200
13C2 PFDoA	132		50 - 200
13C4 PFBA	117		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	114		50 - 200
13C2-4:2-FTS	90		50 - 200
13C2-6:2-FTS	89		50 - 200
13C2-8:2-FTS	97		50 - 200

Lab Sample ID: MRL 380-237361/21-A

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237361

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	2.00	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.97	1.86	J	ng/L		94	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.97	J	ng/L		100	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	2.03	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	2.05	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.01	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.12	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	2.02	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	2.10	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.94	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.12	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.99	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.03	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	2.17	J	ng/L		110	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.20	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.13	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.04	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.35	J	ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	1.96	J	ng/L		100	50 - 150
Perfluoro (2-ethoxyethane) sulfoni acid (PFEEESA)	1.97	2.01	J	ng/L		102	50 - 150

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-237361/21-A

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237361

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	2.07	J	ng/L		105	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	2.06	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	2.09	J	ng/L		106	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	2.01	J	ng/L		102	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	2.16	J	ng/L		110	50 - 150
Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits				
13C3 HFPO-DA	115		50 - 200				
13C6 PFDA	116		50 - 200				
13C5 PFHxA	117		50 - 200				
13C4 PFHpA	118		50 - 200				
13C8 PFOA	121		50 - 200				
13C9 PFNA	118		50 - 200				
13C7 PFUnA	116		50 - 200				
13C2 PFDoA	123		50 - 200				
13C4 PFBA	120		50 - 200				
13C5 PFPeA	116		50 - 200				
13C3 PFBS	109		50 - 200				
13C3 PFHxS	113		50 - 200				
13C8 PFOS	118		50 - 200				
13C2-4:2-FTS	103		50 - 200				
13C2-6:2-FTS	102		50 - 200				
13C2-8:2-FTS	97		50 - 200				

Lab Sample ID: 380-222428-E-1-A MS

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 237361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		118	105		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	104		ng/L		88	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	115		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	109		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	111		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		118	109		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		118	112		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		118	112		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	118		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		118	111		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		118	110		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	108		ng/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222428-E-1-A MS

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 237361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid (PFOA)	<2.0		118	108		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		118	112		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	112		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	110		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	113		ng/L		95	70 - 130
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	<2.0		118	107		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		118	114		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	112		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	109		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		118	110		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	108		ng/L		91	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	115		ng/L		98	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C3 HFPO-DA	108		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	104		50 - 200
13C2 PFDoA	110		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	100		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	94		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	83		50 - 200
13C2-6:2-FTS	80		50 - 200
13C2-8:2-FTS	85		50 - 200

Lab Sample ID: 380-222428-F-1-A MSD

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 237361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		118	106		ng/L		89	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	105		ng/L		89	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	117		ng/L		99	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222428-F-1-A MSD

Matrix: Water

Analysis Batch: 237465

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 237361

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		118	110		ng/L		93	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	113		ng/L		96	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		118	108		ng/L		91	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		118	110		ng/L		93	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		118	113		ng/L		95	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		118	117		ng/L		99	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		118	109		ng/L		92	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		118	115		ng/L		97	70 - 130	5	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		118	110		ng/L		93	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		118	107		ng/L		90	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		118	110		ng/L		93	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		118	113		ng/L		96	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	113		ng/L		95	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	114		ng/L		97	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	113		ng/L		95	70 - 130	0	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		118	115		ng/L		97	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		118	113		ng/L		96	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	114		ng/L		96	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	108		ng/L		91	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		118	112		ng/L		94	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	112		ng/L		95	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	120		ng/L		101	70 - 130	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	121		50 - 200
13C6 PFDA	115		50 - 200
13C5 PFHxA	113		50 - 200
13C4 PFHpA	113		50 - 200
13C8 PFOA	117		50 - 200
13C9 PFNA	114		50 - 200
13C7 PFUnA	113		50 - 200
13C2 PFDoA	118		50 - 200
13C4 PFBA	116		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	90		50 - 200
13C2-6:2-FTS	87		50 - 200
13C2-8:2-FTS	91		50 - 200

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-237516/19-A

Matrix: Water

Analysis Batch: 237825

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 237516

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		07/02/26 10:09	07/06/26 12:40	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
9-Chlorohexadecafluoro-3-oxanonane-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		07/02/26 10:09	07/06/26 12:40	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	119		70 - 130	07/02/26 10:09	07/06/26 12:40	1
13C2 PFHxA	108		70 - 130	07/02/26 10:09	07/06/26 12:40	1
13C2 PFDA	111		70 - 130	07/02/26 10:09	07/06/26 12:40	1
13C3-GenX	106		70 - 130	07/02/26 10:09	07/06/26 12:40	1

Lab Sample ID: LCS 380-237516/21-A

Matrix: Water

Analysis Batch: 237825

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237516

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.2	41.9		ng/L		85	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.2	46.7		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.2	47.3		ng/L		96	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.2	48.5		ng/L		99	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.2	46.5		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	49.2	45.6		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	49.2	48.5		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	49.2	48.6		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	49.2	45.6		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.2	48.1		ng/L		98	70 - 130

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QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: LCS 380-237516/21-A

Matrix: Water

Analysis Batch: 237825

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237516

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	49.2	50.0		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.2	45.9		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	49.2	50.2		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.2	45.6		ng/L		93	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	49.2	49.8		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.2	47.6		ng/L		97	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.2	46.4		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.2	41.4		ng/L		84	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	104		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	94		70 - 130

Lab Sample ID: MRL 380-237516/20-A

Matrix: Water

Analysis Batch: 237825

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237516

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.82	J	ng/L		93	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	2.07	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	1.91	J	ng/L		97	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.97	1.92	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.97	1.95	J	ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.88	J	ng/L		95	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	1.99	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.11	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	1.86	J	ng/L		95	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	2.17	J	ng/L		110	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	2.26	J	ng/L		115	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	1.95	J	ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.13	J	ng/L		108	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.97	1.92	J	ng/L		98	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	1.97	2.12	J	ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.97	2.04	J	ng/L		104	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-237516/20-A

Matrix: Water

Analysis Batch: 237825

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 237516

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	1.91	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.75	J	ng/L		89	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	110		70 - 130				
13C2 PFHxA	106		70 - 130				
13C2 PFDA	103		70 - 130				
13C3-GenX	96		70 - 130				

Lab Sample ID: 380-222428-B-1-A MS

Matrix: Water

Analysis Batch: 237825

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 237516

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		24.7	19.3		ng/L		78	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	20.7		ng/L		84	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	20.8		ng/L		84	70 - 130
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		24.7	20.0		ng/L		81	70 - 130
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		24.7	20.5		ng/L		83	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		24.7	21.4		ng/L		84	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	21.4		ng/L		87	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		24.7	20.3		ng/L		82	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.7	20.8		ng/L		84	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.7	21.3		ng/L		84	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.7	21.1		ng/L		84	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	22.1		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.7	22.3		ng/L		90	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	20.3		ng/L		82	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.7	23.4		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.7	19.7		ng/L		80	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.7	19.9		ng/L		81	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	20.0		ng/L		81	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222428-B-1-A MS
Matrix: Water
Analysis Batch: 237825

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 237516

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
13C3-GenX	104		70 - 130

Lab Sample ID: 380-222428-C-1-A MSD
Matrix: Water
Analysis Batch: 237825

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 237516

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		24.7	23.3		ng/L		94	70 - 130	18	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	24.7		ng/L		100	70 - 130	18	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	23.5		ng/L		96	70 - 130	12	30
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		24.7	25.0		ng/L		101	70 - 130	22	30
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		24.7	26.8		ng/L		109	70 - 130	27	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.7	25.2		ng/L		99	70 - 130	16	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	24.6		ng/L		100	70 - 130	14	30
Perfluorooctanoic acid (PFOA)	<2.0		24.7	26.0		ng/L		105	70 - 130	25	30
Perfluorodecanoic acid (PFDA)	<2.0		24.7	25.0		ng/L		102	70 - 130	19	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.7	25.3		ng/L		100	70 - 130	17	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.7	25.3		ng/L		101	70 - 130	18	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	25.6		ng/L		104	70 - 130	15	30
Perfluorononanoic acid (PFNA)	<2.0		24.7	26.3		ng/L		107	70 - 130	16	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	22.6		ng/L		92	70 - 130	11	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.7	26.5		ng/L		108	70 - 130	13	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.7	23.9		ng/L		97	70 - 130	19	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.7	23.7		ng/L		96	70 - 130	17	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	24.1		ng/L		98	70 - 130	19	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
d5-NEtFOSAA	108		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	103		70 - 130

QC Association Summary

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

LCMS

Prep Batch: 237361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-222442-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	
MBL 380-237361/20-A	Method Blank	Total/NA	Water	533	
LCS 380-237361/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-237361/21-A	Lab Control Sample	Total/NA	Water	533	
380-222428-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-222428-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 237465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-237361/20-A	Method Blank	Total/NA	Water	533	237361
LCS 380-237361/22-A	Lab Control Sample	Total/NA	Water	533	237361
MRL 380-237361/21-A	Lab Control Sample	Total/NA	Water	533	237361
380-222428-E-1-A MS	Matrix Spike	Total/NA	Water	533	237361
380-222428-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	237361

Prep Batch: 237516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-222442-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	537.1 DW	
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	537.1 DW	
MBL 380-237516/19-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-237516/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-237516/20-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-222428-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-222428-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 237548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-222442-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	237361
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	237361

Analysis Batch: 237825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-222442-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	EPA 537.1 V2	237516
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	EPA 537.1 V2	237516
MBL 380-237516/19-A	Method Blank	Total/NA	Water	EPA 537.1 V2	237516
LCS 380-237516/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	237516
MRL 380-237516/20-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	237516
380-222428-B-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	237516
380-222428-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	237516

Lab Chronicle

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

Job ID: 380-222442-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-222442-1

Date Collected: 06/29/26 10:23

Matrix: Drinking Water

Date Received: 07/01/26 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			237361	N8NE	EA POM	07/01/26 16:11
Total/NA	Analysis	533		1	237548	Y5FM	EA POM	07/02/26 12:41
Total/NA	Prep	537.1 DW			237516	LM3A	EA POM	07/02/26 10:09
Total/NA	Analysis	EPA 537.1 V2		1	237825	M7ML	EA POM	07/06/26 15:53

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

Lab Sample ID: 380-222442-2

Date Collected: 06/29/26 10:23

Matrix: Water

Date Received: 07/01/26 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			237361	N8NE	EA POM	07/01/26 16:11
Total/NA	Analysis	533		1	237548	Y5FM	EA POM	07/02/26 12:50
Total/NA	Prep	537.1 DW			237516	LM3A	EA POM	07/02/26 10:09
Total/NA	Analysis	EPA 537.1 V2		1	237825	M7ML	EA POM	07/06/26 16:02

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: 380-222442-1
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 *

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

Method Summary

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

Job ID: 380-222442-1
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: 380-222442-1
SDG: PFAS: Halawa Wells P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-222442-1	HALAWA WELLS P1 (331-023-WL065)	Drinking Water	06/29/26 10:23	07/01/26 09:40	Hawaii
380-222442-2	FB: HALAWA WELLS P1 (331-023-WL065)	Water	06/29/26 10:23	07/01/26 09:40	Hawaii

Phone (626) 386-1100

**Environment Testing
America**

7/8/2026

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-222442-1
SDG Number: PFAS: Halawa Wells P1

Login Number: 222442

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	