

ANALYTICAL REPORT

PREPARED FOR

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Honolulu, Hawaii 96843

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Wells P1

JOB NUMBER

380-231741-1

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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: 380-231741-1
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: 380-231741-1

Job ID: 380-231741-1

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Job Narrative 380-231741-1

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 8/19/2026 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 1.9°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) (380-231741-1). (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: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-1

PWSID Number: HI0000331

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)	3.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	3.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanoic acid (PFHxA)	3.1		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		2.0	ng/L	1		EPA 537.1 V2	Total/NA

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

Lab Sample ID: 380-231741-2

PWSID Number: HI0000331

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: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-1

Date Collected: 08/17/26 10:18

Matrix: Drinking Water

Date Received: 08/19/26 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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoropentanoic acid (PFPeA)	3.6		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C6 PFDA	110		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C5 PFHxA	96		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C4 PFHpA	102		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C8 PFOA	103		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C9 PFNA	104		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C7 PFUnA	107		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C2 PFDoA	111		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C4 PFBA	102		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C5 PFPeA	100		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C3 PFBS	105		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C3 PFHxS	110		50 - 200	08/20/26 08:02	08/21/26 02:00	1

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Client Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-1

Date Collected: 08/17/26 10:18

Matrix: Drinking Water

Date Received: 08/19/26 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	110		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C2-4:2-FTS	115		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C2-6:2-FTS	112		50 - 200	08/20/26 08:02	08/21/26 02:00	1
13C2-8:2-FTS	116		50 - 200	08/20/26 08:02	08/21/26 02:00	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorohexanoic acid (PFHxA)	3.1		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorohexanesulfonic acid (PFHxS)	2.9		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			08/20/26 03:50	08/21/26 01:27	1
13C2 PFHxA	107		70 - 130			08/20/26 03:50	08/21/26 01:27	1
13C2 PFDA	106		70 - 130			08/20/26 03:50	08/21/26 01:27	1
13C3-GenX	103		70 - 130			08/20/26 03:50	08/21/26 01:27	1

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

Lab Sample ID: 380-231741-2

Date Collected: 08/17/26 10:18

Matrix: Water

Date Received: 08/19/26 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		08/20/26 08:02	08/21/26 02:10	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1

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Client Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-2

Date Collected: 08/17/26 10:18

Matrix: Water

Date Received: 08/19/26 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		08/20/26 08:02	08/21/26 02:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/20/26 08:02	08/21/26 02:10	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C6 PFDA	108		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C5 PFHxA	93		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C4 PFHpA	90		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C8 PFOA	100		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C9 PFNA	102		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C7 PFUnA	102		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C2 PFDoA	100		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C4 PFBA	104		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C5 PFPeA	101		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C3 PFBS	102		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C3 PFHxS	100		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C8 PFOS	106		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C2-4:2-FTS	102		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C2-6:2-FTS	111		50 - 200			08/20/26 08:02	08/21/26 02:10	1
13C2-8:2-FTS	113		50 - 200			08/20/26 08:02	08/21/26 02:10	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-2

Date Collected: 08/17/26 10:18

Matrix: Water

Date Received: 08/19/26 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		08/20/26 03:50	08/21/26 01:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/20/26 03:50	08/21/26 01:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130	08/20/26 03:50	08/21/26 01:37	1
13C2 PFHxA	109		70 - 130	08/20/26 03:50	08/21/26 01:37	1
13C2 PFDA	108		70 - 130	08/20/26 03:50	08/21/26 01:37	1
13C3-GenX	101		70 - 130	08/20/26 03:50	08/21/26 01:37	1

Action Limit Summary

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-1

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 Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		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)	2.5		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9		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: 380-231741-2

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

Surrogate Summary

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

Job ID: 380-231741-1
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)
380-231741-1	HALAWA WELLS P1 (331-023-V)	109	107	106	103

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)
380-231741-2	FB: HALAWA WELLS P1 (331-0	108	109	108	101
380-231767-E-1-A MS	Matrix Spike	108	104	103	95
380-231767-F-1-A MSD	Matrix Spike Duplicate	103	108	103	101
LCS 380-247663/22-A	Lab Control Sample	103	100	100	97
MBL 380-247663/20-A	Method Blank	103	108	115	105
MRL 380-247663/21-A	Lab Control Sample	106	106	114	108

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: 380-231741-1
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)
380-231741-1	HALAWA WELLS P1 (331-023-V	96	110	96	102	103	104	107	111

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)
380-231741-1	HALAWA WELLS P1 (331-023-V	102	100	105	110	110	115	112	116

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)
380-231731-B-1-A MS	Matrix Spike	97	106	97	97	103	102	111	109
380-231731-C-1-A MSD	Matrix Spike Duplicate	100	109	99	101	107	110	113	105
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	91	108	93	90	100	102	102	100
LCS 380-247670/22-A	Lab Control Sample	74	85	79	80	81	86	87	87
MBL 380-247670/20-A	Method Blank	67	63	70	69	68	69	53	54
MRL 380-247670/21-A	Lab Control Sample	73	76	79	79	81	81	71	66

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)
380-231731-B-1-A MS	Matrix Spike	105	108	104	106	107	115	112	114
380-231731-C-1-A MSD	Matrix Spike Duplicate	102	104	102	98	104	106	107	109
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	104	101	102	100	106	102	111	113
LCS 380-247670/22-A	Lab Control Sample	82	80	100	107	107	102	106	111
MBL 380-247670/20-A	Method Blank	83	76	104	104	105	106	109	105
MRL 380-247670/21-A	Lab Control Sample	86	84	102	104	109	105	112	111

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: 380-231741-1
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

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-247670/20-A

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247670

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.99		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.24		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		08/20/26 08:02	08/20/26 22:14	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	67		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C6 PFDA	63		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C5 PFHxA	70		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C4 PFHpA	69		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C8 PFOA	68		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C9 PFNA	69		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C7 PFUnA	53		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C2 PFDoA	54		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C4 PFBA	83		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C5 PFPeA	76		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C3 PFBS	104		50 - 200			08/20/26 08:02	08/20/26 22:14	1
13C3 PFHxS	104		50 - 200			08/20/26 08:02	08/20/26 22:14	1

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-247670/20-A

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247670

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	08/20/26 08:02	08/20/26 22:14	1
13C2-4:2-FTS	106		50 - 200	08/20/26 08:02	08/20/26 22:14	1
13C2-6:2-FTS	109		50 - 200	08/20/26 08:02	08/20/26 22:14	1
13C2-8:2-FTS	105		50 - 200	08/20/26 08:02	08/20/26 22:14	1

Lab Sample ID: LCS 380-247670/22-A

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.2	54.1		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	59.2	54.3		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.2	52.9		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.2	53.8		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.2	58.0		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	59.2	55.0		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDaA)	59.2	57.1		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.2	56.0		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.2	53.7		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	59.2	54.2		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	59.2	55.1		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.2	54.0		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	59.2	56.1		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.2	54.6		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	59.2	57.8		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.2	58.0		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.2	53.3		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.2	53.6		ng/L		91	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.2	56.0		ng/L		95	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	59.2	54.6		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.2	58.6		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.2	53.7		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	59.2	56.3		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.2	51.5		ng/L		87	70 - 130

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: LCS 380-247670/22-A

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	59.2	52.4		ng/L		88	70 - 130
Isotope Dilution							
	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	74		50 - 200				
13C6 PFDA	85		50 - 200				
13C5 PFHxA	79		50 - 200				
13C4 PFHpA	80		50 - 200				
13C8 PFOA	81		50 - 200				
13C9 PFNA	86		50 - 200				
13C7 PFUnA	87		50 - 200				
13C2 PFDoA	87		50 - 200				
13C4 PFBA	82		50 - 200				
13C5 PFPeA	80		50 - 200				
13C3 PFBS	100		50 - 200				
13C3 PFHxS	107		50 - 200				
13C8 PFOS	107		50 - 200				
13C2-4:2-FTS	102		50 - 200				
13C2-6:2-FTS	106		50 - 200				
13C2-8:2-FTS	111		50 - 200				

Lab Sample ID: MRL 380-247670/21-A

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247670

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	2.02	J	ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	1.97	1.82	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.84	J	ng/L		93	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.94	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	1.90	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	1.93	J	ng/L		98	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.03	J	ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	1.87	J	ng/L		95	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.85	J	ng/L		94	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.85	J	ng/L		94	50 - 150
Perfluorononanoic acid (PFNA)	1.97	1.88	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.78	J	ng/L		90	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	1.90	J	ng/L		97	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	1.92	J	ng/L		98	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	1.87	J	ng/L		95	50 - 150

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-247670/21-A

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247670

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	1.88	J	ng/L		96	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	1.81	J	ng/L		92	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	1.82	J	ng/L		92	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.07	J	ng/L		105	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	1.97	J	ng/L		100	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.97	J	ng/L		100	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.87	J	ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.94	J	ng/L		99	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.69	J	ng/L		86	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.84	J	ng/L		93	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	73		50 - 200
13C6 PFDA	76		50 - 200
13C5 PFHxA	79		50 - 200
13C4 PFHpA	79		50 - 200
13C8 PFOA	81		50 - 200
13C9 PFNA	81		50 - 200
13C7 PFUnA	71		50 - 200
13C2 PFDoA	66		50 - 200
13C4 PFBA	86		50 - 200
13C5 PFPeA	84		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	111		50 - 200

Lab Sample ID: 380-231731-B-1-A MS

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247670

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		59.1	59.0		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.1	58.0		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.1	62.4		ng/L		106	70 - 130

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231731-B-1-A MS

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247670

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		59.1	58.7		ng/L		99	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.1	61.9		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.1	57.9		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.1	59.0		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.1		59.1	63.9		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.1	58.8		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	4.8		59.1	63.2		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.1	61.2		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.1	57.5		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	2.5		59.1	60.1		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.1	56.7		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		59.1	62.5		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.1	61.2		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.1	53.3		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.1	55.5		ng/L		93	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		59.1	61.9		ng/L		105	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		59.1	56.8		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.1	58.4		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.1	56.4		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	6.6		59.1	65.8		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.1	53.5		ng/L		91	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.1	57.7		ng/L		98	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	97		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	111		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	104		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	107		50 - 200

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231731-B-1-A MS

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247670

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	114		50 - 200

Lab Sample ID: 380-231731-C-1-A MSD

Matrix: Water

Analysis Batch: 247833

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 247670

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		59.1	56.3		ng/L		95	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<2.0		59.1	54.5		ng/L		92	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.1	57.9		ng/L		98	70 - 130	7	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.1	60.0		ng/L		102	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.1	57.6		ng/L		95	70 - 130	7	30
Perfluorodecanoic acid (PFDA)	<2.0		59.1	57.7		ng/L		98	70 - 130	0	30
Perfluorododecanoic acid (PFDaA)	<2.0		59.1	60.4		ng/L		102	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	2.1		59.1	60.8		ng/L		99	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.1	61.8		ng/L		102	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	4.8		59.1	59.0		ng/L		92	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		59.1	56.8		ng/L		96	70 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.1	57.5		ng/L		96	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	2.5		59.1	60.2		ng/L		98	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.1	57.6		ng/L		98	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		59.1	61.3		ng/L		102	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.1	59.1		ng/L		100	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.1	56.6		ng/L		96	70 - 130	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.1	54.1		ng/L		90	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.1	61.3		ng/L		104	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.1	56.9		ng/L		96	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.1	60.0		ng/L		102	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.1	56.5		ng/L		96	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	6.6		59.1	66.6		ng/L		102	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.1	53.2		ng/L		90	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.1	59.5		ng/L		101	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	100		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	110		50 - 200
13C7 PFUnA	113		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	102		50 - 200
13C3 PFHxS	98		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	109		50 - 200

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

Lab Sample ID: MBL 380-247663/20-A
Matrix: Water
Analysis Batch: 247827

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 247663

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		08/20/26 03:50	08/20/26 22:43	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/20/26 03:50	08/20/26 22:43	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	103		70 - 130			08/20/26 03:50	08/20/26 22:43	1
13C2 PFHxA	108		70 - 130			08/20/26 03:50	08/20/26 22:43	1
13C2 PFDA	115		70 - 130			08/20/26 03:50	08/20/26 22:43	1

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QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-247663/20-A

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247663

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	105		70 - 130	08/20/26 03:50	08/20/26 22:43	1

Lab Sample ID: LCS 380-247663/22-A

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247663

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	24.6	23.6		ng/L		96	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	24.6	25.2		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	24.6	25.6		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	24.6	24.5		ng/L		100	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	24.6	26.1		ng/L		106	70 - 130
Perfluorohexanoic acid (PFHxA)	24.6	24.5		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	24.6	25.0		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	24.6	24.8		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	24.6	25.5		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	24.6	25.0		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	24.6	26.2		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	24.6	24.2		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	24.6	25.7		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	24.6	18.6		ng/L		76	70 - 130
Perfluorotridecanoic acid (PFTrDA)	24.6	29.5		ng/L		120	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	24.6	25.0		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	24.6	24.5		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	24.6	24.2		ng/L		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	97		70 - 130

QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-247663/21-A

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247663

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	2.20	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	2.15	J	ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.29	J	ng/L		116	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	2.11	J	ng/L		107	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	1.91	J	ng/L		97	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	2.30	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.32	J	ng/L		118	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	2.20	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	2.29	J	ng/L		116	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.14	J	ng/L		109	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.23	J	ng/L		113	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	2.32	J	ng/L		118	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.34	J	ng/L		119	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	1.64	J	ng/L		84	50 - 150
Perfluorotridecanoic acid (PFTrDA)	1.96	2.66	J	ng/L		135	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	2.14	J	ng/L		109	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	2.02	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	2.22	J	ng/L		113	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	106		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	108		70 - 130

Lab Sample ID: 380-231767-E-1-A MS

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247663

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		24.6	21.5		ng/L		87	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.6	23.8		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	24.7		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	23.3		ng/L		95	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231767-E-1-A MS

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247663

Sample Data 2-102									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	25.7		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		24.6	23.7		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	25.0		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		24.6	23.2		ng/L		94	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.6	25.1		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.6	24.6		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.6	25.6		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	23.9		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.6	24.8		ng/L		101	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	17.8		ng/L		72	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		24.6	28.2		ng/L		115	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	24.3		ng/L		99	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	23.8		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	23.3		ng/L		95	70 - 130

Lab Sample ID: 380-231767-F-1-A MSD

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 247663

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		24.6	23.8		ng/L		97	70 - 130	10	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.6	23.8		ng/L		97	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.6	24.9		ng/L		101	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.6	22.6		ng/L		92	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.6	25.8		ng/L		105	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.6	25.7		ng/L		101	70 - 130	8	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.6	26.3		ng/L		107	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	<2.0		24.6	25.6		ng/L		104	70 - 130	10	30
Perfluorodecanoic acid (PFDA)	<2.0		24.6	26.2		ng/L		107	70 - 130	5	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231767-F-1-A MSD

Matrix: Water

Analysis Batch: 247827

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 247663

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.6	24.0		ng/L		96	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.6	25.3		ng/L		103	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.6	24.8		ng/L		101	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		24.6	26.2		ng/L		107	70 - 130	6	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.6	17.8		ng/L		73	70 - 130	0	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		24.6	30.1		ng/L		122	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.6	23.3		ng/L		95	70 - 130	4	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.6	23.5		ng/L		96	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.6	24.9		ng/L		101	70 - 130	7	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	103		70 - 130								
13C2 PFHxA	108		70 - 130								
13C2 PFDA	103		70 - 130								
13C3-GenX	101		70 - 130								

QC Association Summary

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

LCMS

Prep Batch: 247663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-231741-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	537.1 DW	
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	537.1 DW	
MBL 380-247663/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-247663/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-247663/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-231767-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-231767-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 247670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-231741-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	
MBL 380-247670/20-A	Method Blank	Total/NA	Water	533	
LCS 380-247670/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-247670/21-A	Lab Control Sample	Total/NA	Water	533	
380-231731-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-231731-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 247827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-231741-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	EPA 537.1 V2	247663
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	EPA 537.1 V2	247663
MBL 380-247663/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	247663
LCS 380-247663/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	247663
MRL 380-247663/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	247663
380-231767-E-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	247663
380-231767-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	247663

Analysis Batch: 247833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-231741-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	247670
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	247670
MBL 380-247670/20-A	Method Blank	Total/NA	Water	533	247670
LCS 380-247670/22-A	Lab Control Sample	Total/NA	Water	533	247670
MRL 380-247670/21-A	Lab Control Sample	Total/NA	Water	533	247670
380-231731-B-1-A MS	Matrix Spike	Total/NA	Water	533	247670
380-231731-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	247670

Lab Chronicle

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

Job ID: 380-231741-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-231741-1

Date Collected: 08/17/26 10:18

Matrix: Drinking Water

Date Received: 08/19/26 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			247670	XTD8	EA POM	08/20/26 08:02
Total/NA	Analysis	533		1	247833	Y5FM	EA POM	08/21/26 02:00
Total/NA	Prep	537.1 DW			247663	G9MN	EA POM	08/20/26 03:50
Total/NA	Analysis	EPA 537.1 V2		1	247827	Y5FM	EA POM	08/21/26 01:27

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

Lab Sample ID: 380-231741-2

Date Collected: 08/17/26 10:18

Matrix: Water

Date Received: 08/19/26 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			247670	XTD8	EA POM	08/20/26 08:02
Total/NA	Analysis	533		1	247833	Y5FM	EA POM	08/21/26 02:10
Total/NA	Prep	537.1 DW			247663	G9MN	EA POM	08/20/26 03:50
Total/NA	Analysis	EPA 537.1 V2		1	247827	Y5FM	EA POM	08/21/26 01:37

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: 380-231741-1
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 *

1
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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: 380-231741-1
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: 380-231741-1
SDG: PFAS: Halawa Wells P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-231741-1	HALAWA WELLS P1 (331-023-WL065)	Drinking Water	08/17/26 10:18	08/19/26 09:30	HI0000331
380-231741-2	FB: HALAWA WELLS P1 (331-023-WL065)	Water	08/17/26 10:18	08/19/26 09:30	HI0000331

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380-231741 CQC

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-231741-1
SDG Number: PFAS: Halawa Wells P1

Login Number: 231741

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	