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ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Wells P1

JOB NUMBER

380-205669-1

Eurofins Pomona

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Drinking Water and Wastewater West, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW, Water matrices)

Authorization



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-205669-1
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: 380-205669-1

Job ID: 380-205669-1

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Job Narrative 380-205669-1

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 4/1/2026 10:10 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 2.2°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) (380-205669-1). (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: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.7		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanoic acid (PFHxA)	2.3		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)	3.0		2.0	ng/L	1		EPA 537.1 V2	Total/NA

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

Lab Sample ID: 380-205669-2

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: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-1

Date Collected: 03/30/26 10:36

Matrix: Drinking Water

Date Received: 04/01/26 10:10

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-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorooctanesulfonic acid (PFOS)	2.6		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C6 PFDA	107		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C5 PFHxA	100		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C4 PFHpA	98		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C8 PFOA	102		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C9 PFNA	103		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C7 PFUnA	101		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C2 PFDoA	103		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C4 PFBA	99		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C5 PFPeA	106		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C3 PFBS	103		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C3 PFHxS	104		50 - 200	04/03/26 07:00	04/03/26 20:37	1

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Client Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-1

Date Collected: 03/30/26 10:36

Matrix: Drinking Water

Date Received: 04/01/26 10:10

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	105		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C2-4:2-FTS	112		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C2-6:2-FTS	110		50 - 200	04/03/26 07:00	04/03/26 20:37	1
13C2-8:2-FTS	104		50 - 200	04/03/26 07:00	04/03/26 20:37	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		04/03/26 11:12	04/04/26 22:14	1
Perfluorooctanesulfonic acid (PFOS)	2.7		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorohexanesulfonic acid (PFHxS)	3.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:14	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	105		70 - 130	04/03/26 11:12	04/04/26 22:14	1		
13C2 PFHxA	106		70 - 130	04/03/26 11:12	04/04/26 22:14	1		
13C2 PFDA	115		70 - 130	04/03/26 11:12	04/04/26 22:14	1		
13C3-GenX	113		70 - 130	04/03/26 11:12	04/04/26 22:14	1		

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

Lab Sample ID: 380-205669-2

Date Collected: 03/30/26 10:36

Matrix: Water

Date Received: 04/01/26 10:10

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		04/03/26 07:00	04/03/26 20:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1

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Client Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-2

Date Collected: 03/30/26 10:36

Matrix: Water

Date Received: 04/01/26 10:10

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		04/03/26 07:00	04/03/26 20:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		04/03/26 07:00	04/03/26 20:47	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	98		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C6 PFDA	108		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C5 PFHxA	110		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C4 PFHpA	103		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C8 PFOA	103		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C9 PFNA	107		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C7 PFUnA	102		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C2 PFDoA	107		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C4 PFBA	101		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C5 PFPeA	105		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C3 PFBS	101		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C3 PFHxS	101		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C8 PFOS	100		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C2-4:2-FTS	110		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C2-6:2-FTS	108		50 - 200	04/03/26 07:00	04/03/26 20:47	1
13C2-8:2-FTS	106		50 - 200	04/03/26 07:00	04/03/26 20:47	1

Client Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-2

Date Collected: 03/30/26 10:36

Matrix: Water

Date Received: 04/01/26 10:10

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		04/03/26 11:12	04/04/26 22:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		04/03/26 11:12	04/04/26 22:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	96		70 - 130			04/03/26 11:12	04/04/26 22:33	1
13C2 PFHxA	94		70 - 130			04/03/26 11:12	04/04/26 22:33	1
13C2 PFDA	104		70 - 130			04/03/26 11:12	04/04/26 22:33	1
13C3-GenX	82		70 - 130			04/03/26 11:12	04/04/26 22:33	1

Action Limit Summary

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		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)	2.7		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

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

Lab Sample ID: 380-205669-2

PWSID Number: HI0000331

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-205669-1
 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)
380-205669-1	HALAWA WELLS P1 (331-023-V)	105	106	115	113
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)
380-205669-2	FB: HALAWA WELLS P1 (331-0	96	94	104	82
380-205868-E-1-A MSD	Matrix Spike Duplicate	109	107	115	106
380-205868-F-1-A MS	Matrix Spike	114	104	113	105
LCS 380-217710/22-A	Lab Control Sample	93	92	104	82
MBL 380-217710/20-A	Method Blank	104	106	116	86
MRL 380-217710/21-A	Lab Control Sample	106	104	115	105
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: 380-205669-1
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)
380-205669-1	HALAWA WELLS P1 (331-023-V	96	107	100	98	102	103	101	103

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)
380-205669-1	HALAWA WELLS P1 (331-023-V	99	106	103	104	105	112	110	104

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)
380-205466-B-1-A MS	Matrix Spike	103	106	111	103	100	106	108	102
380-205466-C-1-A MSD	Matrix Spike Duplicate	96	101	105	101	100	101	103	99
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	98	108	110	103	103	107	102	107
LCS 380-217663/22-A	Lab Control Sample	99	108	106	107	100	105	105	106
MBL 380-217663/20-A	Method Blank	95	97	99	101	105	105	101	99
MRL 380-217663/21-A	Lab Control Sample	89	98	95	98	97	95	93	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)
380-205466-B-1-A MS	Matrix Spike	99	103	103	101	101	102	104	101
380-205466-C-1-A MSD	Matrix Spike Duplicate	99	104	101	100	98	102	104	103
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	101	105	101	101	100	110	108	106
LCS 380-217663/22-A	Lab Control Sample	96	102	102	102	97	104	102	104
MBL 380-217663/20-A	Method Blank	100	105	102	101	102	109	111	103
MRL 380-217663/21-A	Lab Control Sample	95	99	103	103	103	108	104	104

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-205669-1
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
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-217663/20-A
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 217663

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		04/03/26 07:00	04/03/26 17:10	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C6 PFDA	97		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C5 PFHxA	99		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C4 PFHpA	101		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C8 PFOA	105		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C9 PFNA	105		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C7 PFUnA	101		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C2 PFDoA	99		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C4 PFBA	100		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C5 PFPeA	105		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C3 PFBS	102		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C3 PFHxS	101		50 - 200	04/03/26 07:00	04/03/26 17:10	1

Eurofins Pomona

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-217663/20-A
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 217663

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	102		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C2-4:2-FTS	109		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C2-6:2-FTS	111		50 - 200	04/03/26 07:00	04/03/26 17:10	1
13C2-8:2-FTS	103		50 - 200	04/03/26 07:00	04/03/26 17:10	1

Lab Sample ID: LCS 380-217663/22-A
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 217663

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	61.5		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	60.2	61.7		ng/L		102	70 - 130
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	60.2	62.2		ng/L		103	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	64.6		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	59.5		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	59.0		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	59.3		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	61.7		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	61.5		ng/L		102	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	60.7		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	60.2	60.5		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	63.6		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	63.0		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	61.7		ng/L		102	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	63.6		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	63.3		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	63.9		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	64.6		ng/L		107	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	54.9		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	59.8		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	62.5		ng/L		104	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	61.2		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	61.2		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	63.8		ng/L		106	70 - 130

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: LCS 380-217663/22-A
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 217663

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	59.3		ng/L		98	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	99		50 - 200				
13C6 PFDA	108		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	107		50 - 200				
13C8 PFOA	100		50 - 200				
13C9 PFNA	105		50 - 200				
13C7 PFUnA	105		50 - 200				
13C2 PFDoA	106		50 - 200				
13C4 PFBA	96		50 - 200				
13C5 PFPeA	102		50 - 200				
13C3 PFBS	102		50 - 200				
13C3 PFHxS	102		50 - 200				
13C8 PFOS	97		50 - 200				
13C2-4:2-FTS	104		50 - 200				
13C2-6:2-FTS	102		50 - 200				
13C2-8:2-FTS	104		50 - 200				

Lab Sample ID: MRL 380-217663/21-A
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 217663

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.06	J	ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.15	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.17	J	ng/L		108	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.39	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.32	J	ng/L		116	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-217663/21-A
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 217663

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.34	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.29	J	ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.51	J	ng/L		125	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.81	J	ng/L		90	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.08	J	ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.06	J	ng/L		103	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	98		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	93		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	108		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 380-205466-B-1-A MS
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 217663

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		60.2	61.0		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	60.5		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	61.9		ng/L		103	70 - 130

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205466-B-1-A MS
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 217663

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	61.9		ng/L		103	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	61.1		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	59.6		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	61.5		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	63.8		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	60.9		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	61.6		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	60.3		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	61.3		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	62.1		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	57.5		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	63.4		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	65.2		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	63.8		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	63.6		ng/L		106	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	52.7		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	60.9		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	66.0		ng/L		110	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	61.8		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	62.3		ng/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	61.0		ng/L		101	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	59.0		ng/L		98	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	108		50 - 200
13C2 PFDoA	102		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	101		50 - 200

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205466-B-1-A MS
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 217663

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	102		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: 380-205466-C-1-A MSD
Matrix: Water
Analysis Batch: 217799

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 217663

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	62.0		ng/L		103	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	60.1		ng/L		100	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	62.2		ng/L		103	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.4	63.6		ng/L		105	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	61.6		ng/L		102	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.4	62.8		ng/L		104	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	63.4		ng/L		105	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	62.6		ng/L		104	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	63.4		ng/L		105	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	62.6		ng/L		104	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		60.4	61.1		ng/L		101	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	63.1		ng/L		105	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		60.4	61.7		ng/L		102	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	62.6		ng/L		104	70 - 130	9	30
Perfluorobutanoic acid (PFBA)	<2.0		60.4	64.0		ng/L		106	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	64.1		ng/L		106	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	63.6		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	63.4		ng/L		105	70 - 130	0	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	56.1		ng/L		93	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.4	61.2		ng/L		101	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	63.7		ng/L		106	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	61.0		ng/L		101	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	62.9		ng/L		104	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	62.6		ng/L		104	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	58.5		ng/L		97	70 - 130	1	30

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QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

<i>Isotope Dilution</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	103		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	102		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	103		50 - 200

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

Lab Sample ID: MBL 380-217710/20-A
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 217710

<i>Analyte</i>	<i>MBL</i>	<i>MBL</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>Result</i>	<i>Qualifier</i>						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		04/03/26 11:12	04/04/26 20:00	1
<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
	<i>%Recovery</i>	<i>Qualifier</i>						
d5-NEtFOSAA	104		70 - 130			04/03/26 11:12	04/04/26 20:00	1
13C2 PFHxA	106		70 - 130			04/03/26 11:12	04/04/26 20:00	1
13C2 PFDA	116		70 - 130			04/03/26 11:12	04/04/26 20:00	1

Eurofins Pomona

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MBL 380-217710/20-A
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 217710

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	86	Qualifier	70 - 130	04/03/26 11:12	04/04/26 20:00	1

Lab Sample ID: LCS 380-217710/22-A
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 217710

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	<i>Limits</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>					
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	21.1		ng/L		84		70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	26.1		ng/L		104		70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	26.5		ng/L		106		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	23.4		ng/L		93		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	22.5		ng/L		90		70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	23.4		ng/L		93		70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	25.8		ng/L		103		70 - 130
Perfluorooctanoic acid (PFOA)	25.0	24.9		ng/L		100		70 - 130
Perfluorodecanoic acid (PFDA)	25.0	25.6		ng/L		102		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	27.1		ng/L		108		70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	27.0		ng/L		108		70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	24.9		ng/L		100		70 - 130
Perfluorononanoic acid (PFNA)	25.0	25.1		ng/L		100		70 - 130
Perfluorotetradecanoic acid (PFTA)	25.0	23.7		ng/L		95		70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	26.2		ng/L		105		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	25.0	27.3		ng/L		109		70 - 130
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	26.2		ng/L		105		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	21.6		ng/L		86		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	93		70 - 130
13C2 PFHxA	92		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	82		70 - 130

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: MRL 380-217710/21-A
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 217710

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.78	J	ng/L		89	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.15	J	ng/L		108	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.01	J	ng/L		101	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.19	J	ng/L		110	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.71	J	ng/L		86	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.06	J	ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.06	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.92	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.90	J	ng/L		95	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	115		70 - 130
13C3-GenX	105		70 - 130

Lab Sample ID: 380-205868-E-1-A MSD
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 217710

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		25.1	26.8		ng/L		107	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.8		ng/L		107	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.9		ng/L		111	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.9		ng/L		103	70 - 130	2	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205868-E-1-A MSD
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 217710

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.1		ng/L		104	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.5		ng/L		106	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	27.7		ng/L		111	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.9		ng/L		107	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	28.0		ng/L		112	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	26.3		ng/L		105	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	27.7		ng/L		110	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.5		ng/L		102	70 - 130	10	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.9		ng/L		107	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	25.9		ng/L		103	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	28.6		ng/L		114	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	26.2		ng/L		105	70 - 130	7	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	27.0		ng/L		108	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	24.8		ng/L		99	70 - 130	4	30
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
d5-NEtFOSAA	109		70 - 130								
13C2 PFHxA	107		70 - 130								
13C2 PFDA	115		70 - 130								
13C3-GenX	106		70 - 130								

Lab Sample ID: 380-205868-F-1-A MS
Matrix: Water
Analysis Batch: 217865

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 217710

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		25.1	26.8		ng/L		107	70 - 130		
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	27.1		ng/L		108	70 - 130		
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.9		ng/L		111	70 - 130		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.5		ng/L		102	70 - 130		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.5		ng/L		106	70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.8		ng/L		107	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	27.6		ng/L		110	70 - 130		
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.9		ng/L		107	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.4		ng/L		110	70 - 130		

QC Association Summary

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

LCMS

Prep Batch: 217663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-205669-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	
MBL 380-217663/20-A	Method Blank	Total/NA	Water	533	
LCS 380-217663/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-217663/21-A	Lab Control Sample	Total/NA	Water	533	
380-205466-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-205466-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 217710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-205669-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	537.1 DW	
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	537.1 DW	
MBL 380-217710/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-217710/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-217710/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-205868-E-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	
380-205868-F-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	

Analysis Batch: 217799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-205669-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	533	217663
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	533	217663
MBL 380-217663/20-A	Method Blank	Total/NA	Water	533	217663
LCS 380-217663/22-A	Lab Control Sample	Total/NA	Water	533	217663
MRL 380-217663/21-A	Lab Control Sample	Total/NA	Water	533	217663
380-205466-B-1-A MS	Matrix Spike	Total/NA	Water	533	217663
380-205466-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	217663

Analysis Batch: 217865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-205669-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	EPA 537.1 V2	217710
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	Total/NA	Water	EPA 537.1 V2	217710
MBL 380-217710/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	217710
LCS 380-217710/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	217710
MRL 380-217710/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	217710
380-205868-E-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	217710
380-205868-F-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	217710

Lab Chronicle

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

Job ID: 380-205669-1
SDG: PFAS: Halawa Wells P1

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

Lab Sample ID: 380-205669-1

Date Collected: 03/30/26 10:36

Matrix: Drinking Water

Date Received: 04/01/26 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			217663	XTD8	EA POM	04/03/26 07:00
Total/NA	Analysis	533		1	217799	Y5FM	EA POM	04/03/26 20:37
Total/NA	Prep	537.1 DW			217710	E9PK	EA POM	04/03/26 11:12
Total/NA	Analysis	EPA 537.1 V2		1	217865	M7ML	EA POM	04/04/26 22:14

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

Lab Sample ID: 380-205669-2

Date Collected: 03/30/26 10:36

Matrix: Water

Date Received: 04/01/26 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			217663	XTD8	EA POM	04/03/26 07:00
Total/NA	Analysis	533		1	217799	Y5FM	EA POM	04/03/26 20:47
Total/NA	Prep	537.1 DW			217710	E9PK	EA POM	04/03/26 11:12
Total/NA	Analysis	EPA 537.1 V2		1	217865	M7ML	EA POM	04/04/26 22:33

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: 380-205669-1
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
- 2
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- 17

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

Method Summary

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

Job ID: 380-205669-1
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: 380-205669-1
SDG: PFAS: Halawa Wells P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-205669-1	HALAWA WELLS P1 (331-023-WL065)	Drinking Water	03/30/26 10:36	04/01/26 10:10	HI0000331
380-205669-2	FB: HALAWA WELLS P1 (331-023-WL065)	Water	03/30/26 10:36	04/01/26 10:10	HI0000331

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Monrovia, CA (Suite 100)
 750 Royal Oaks Drive Suite 100
 Monrovia, CA 91016
 Phone (626) 386-1100

Chain of Custody Record



Client Information Client Contact: kirk lwamoto Phone: +1 808 748 5840 Lab Pk: Lopez, Maria State of Origin:		Carrier Tracking No(s): Page: Page 1 of 1 Job #:	
Company: City & County of Honolulu Address: 630 South Beretama Street, Chemistry Lab City: Honolulu State Zip: HI, 96843 Phone: 808-748-5840 (tel) Email: kwamoto@hbws.org		PWSID: Due Date Requested: TAT Requested (days): Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #: Project #: 38001111 SSOW#:	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Analysis Requested SUBCONTRACT - 626 FAH Physic LL (EAL) + TICs 8016B_GRO_LL - (MOD) GRO 8016B_DRO_LL_C8 - HNL Ranges. C10-C24/C24-C38/C8-C18 826.2_PREC - (MOD) 826plus PLUS TICs 637_1_DW_PREC - 637.1 Full List 633 - All Analytes Total Number of Containers:	
Sample Identification Halawa Wells P1 (331-023-WL065)		Matrix (Water, Sediment, Other): Water Sample Type (C=Comp, G=grab): G Sample Time: 1036 Sample Date: 30-Mar-2026 Preservation Code:	
FB: Halawa Wells P1 (331-023-WL065)		R A Q Y I 1 1 3 3 1	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Special Instructions/Note:	
Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by:		Method of Shipment: FedEx	
Date/Time: 3/31/2026 1400 Date/Time:		Date/Time: 4/1/26 1010 Date/Time:	
Date/Time:		Date/Time:	
Relinquished by:		Received by: Maria Lopez	
Relinquished by:		Received by:	
Custody Seals Intact: Δ Yes Δ No Custody Seal No.		Cooler Temperature(s) °C and Other Remarks: (6.31A) 2.0+0.2 - 2.2 gel-frozen	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-205669-1
SDG Number: PFAS: Halawa Wells P1

Login Number: 205669

List Number: 1

Creator: Segura, Ryan

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").	True	
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	

