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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
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JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-117074-1

Eurofins Eaton Analytical 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 Eaton Analytical, 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: 380-117074-1
SDG: Weekly PFAS

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: 380-117074-1

Job ID: 380-117074-1

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Job Narrative 380-117074-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/10/2024 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0°C and 2.7°C.

PFAS

Methods 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 UNITS 1 & 2 (331-206-TP065) (380-117074-1)

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

Detection Summary

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

Job ID: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-117074-2

No Detections.

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-3

No Detections.

Client Sample ID: FB: KA'AMILO WELLS

Lab Sample ID: 380-117074-4

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: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-1

Date Collected: 10/08/24 09:45

Matrix: Drinking Water

Date Received: 10/10/24 10:30

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		10/12/24 06:50	10/14/24 02:52	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 02:52	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C6 PFDA	101		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C5 PFHxA	94		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C4 PFHpA	95		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C8 PFOA	91		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C9 PFNA	95		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C7 PFUnA	103		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C2 PFDoA	106		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C4 PFBA	102		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C5 PFPeA	99		50 - 200			10/12/24 06:50	10/14/24 02:52	1
13C3 PFBS	110		50 - 200			10/12/24 06:50	10/14/24 02:52	1

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Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-1

Date Collected: 10/08/24 09:45

Matrix: Drinking Water

Date Received: 10/10/24 10:30

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFHxS	109		50 - 200	10/12/24 06:50	10/14/24 02:52	1
13C8 PFOS	105		50 - 200	10/12/24 06:50	10/14/24 02:52	1
13C2-4:2-FTS	118		50 - 200	10/12/24 06:50	10/14/24 02:52	1
13C2-6:2-FTS	109		50 - 200	10/12/24 06:50	10/14/24 02:52	1
13C2-8:2-FTS	111		50 - 200	10/12/24 06:50	10/14/24 02:52	1

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130	10/11/24 10:24	10/13/24 06:40	1
13C2 PFHxA	117		70 - 130	10/11/24 10:24	10/13/24 06:40	1
13C2 PFDA	126		70 - 130	10/11/24 10:24	10/13/24 06:40	1
13C3-GenX	110		70 - 130	10/11/24 10:24	10/13/24 06:40	1

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-117074-2

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-117074-2

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C6 PFDA	96		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C5 PFHxA	81		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C4 PFHpA	86		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C8 PFOA	88		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C9 PFNA	93		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C7 PFUnA	88		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C2 PFDoA	79		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C4 PFBA	95		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C5 PFPeA	88		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C3 PFBS	101		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C3 PFHxS	107		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C8 PFOS	101		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C2-4:2-FTS	107		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C2-6:2-FTS	104		50 - 200	10/12/24 06:50	10/14/24 03:02	1
13C2-8:2-FTS	106		50 - 200	10/12/24 06:50	10/14/24 03:02	1

Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-117074-2

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	120		70 - 130			10/11/24 10:24	10/13/24 06:49	1
13C2 PFHxA	117		70 - 130			10/11/24 10:24	10/13/24 06:49	1
13C2 PFDA	120		70 - 130			10/11/24 10:24	10/13/24 06:49	1
13C3-GenX	110		70 - 130			10/11/24 10:24	10/13/24 06:49	1

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)

Lab Sample ID: 380-117074-3

Date Collected: 10/08/24 09:45

Matrix: Water

Date Received: 10/10/24 10:30

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		10/12/24 06:50	10/14/24 03:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-3

Date Collected: 10/08/24 09:45

Matrix: Water

Date Received: 10/10/24 10:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:12	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C6 PFDA	106		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C5 PFHxA	101		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C4 PFHpA	102		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C8 PFOA	105		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C9 PFNA	104		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C7 PFUnA	106		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C2 PFDoA	108		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C4 PFBA	109		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C5 PFPeA	105		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C3 PFBS	102		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C3 PFHxS	103		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C8 PFOS	102		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C2-4:2-FTS	111		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C2-6:2-FTS	107		50 - 200			10/12/24 06:50	10/14/24 03:12	1
13C2-8:2-FTS	102		50 - 200			10/12/24 06:50	10/14/24 03:12	1

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-3

Date Collected: 10/08/24 09:45

Matrix: Water

Date Received: 10/10/24 10:30

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 06:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130			10/11/24 10:24	10/13/24 06:59	1
13C2 PFHxA	115		70 - 130			10/11/24 10:24	10/13/24 06:59	1
13C2 PFDA	120		70 - 130			10/11/24 10:24	10/13/24 06:59	1
13C3-GenX	108		70 - 130			10/11/24 10:24	10/13/24 06:59	1

Client Sample ID: FB: KA'AMILO WELLS

Lab Sample ID: 380-117074-4

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

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		10/12/24 06:50	10/14/24 03:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Client Sample ID: FB: KA'AMILO WELLS

Lab Sample ID: 380-117074-4

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/12/24 06:50	10/14/24 03:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	104		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C6 PFDA	115		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C5 PFHxA	109		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C4 PFHpA	111		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C8 PFOA	112		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C9 PFNA	114		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C7 PFUnA	111		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C2 PFDoA	118		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C4 PFBA	113		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C5 PFPeA	110		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C3 PFBS	107		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C3 PFHxS	109		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C8 PFOS	106		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C2-4:2-FTS	114		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C2-6:2-FTS	111		50 - 200	10/12/24 06:50	10/14/24 03:21	1
13C2-8:2-FTS	109		50 - 200	10/12/24 06:50	10/14/24 03:21	1

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Client Sample ID: FB: KA'AMILO WELLS

Lab Sample ID: 380-117074-4

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/11/24 10:24	10/13/24 07:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130	10/11/24 10:24	10/13/24 07:09	1
13C2 PFHxA	113		70 - 130	10/11/24 10:24	10/13/24 07:09	1
13C2 PFDA	120		70 - 130	10/11/24 10:24	10/13/24 07:09	1
13C3-GenX	106		70 - 130	10/11/24 10:24	10/13/24 07:09	1

Action Limit Summary

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

Job ID: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-117074-2

Compliance Check

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

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

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-117074-3

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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-117074-1
SDG: Weekly PFAS

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
(331-206-TP065) (Continued)**

Lab Sample ID: 380-117074-3

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	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: KA'AMILO WELLS

Lab Sample ID: 380-117074-4

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	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Surrogate Summary

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

Job ID: 380-117074-1
 SDG: Weekly PFAS

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

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)
380-117074-1	HALAWA WELLS UNITS 1 & 2 (	114	117	126	110

Surrogate Legend

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

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

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)
380-117065-B-1-B LMS	Matrix Spike	112	110	113	102
380-117065-C-1-B LMSD	Matrix Spike Duplicate	119	114	120	111
380-117074-2	KA'AMILO WELLS	120	117	120	110
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	113	115	120	108
380-117074-4	FB: KA'AMILO WELLS	116	113	120	106
LCS 380-112963/22-A	Lab Control Sample	109	105	112	94
MBL 380-112963/20-A	Method Blank	121	107	120	98
MRL 380-112963/21-A	Lab Control Sample	107	102	116	94

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: 380-117074-1
SDG: Weekly PFAS

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)
380-117074-1	HALAWA WELLS UNITS 1 & 2 (	88	101	94	95	91	95	103	106

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)
380-117074-1	HALAWA WELLS UNITS 1 & 2 (	102	99	110	109	105	118	109	111

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)
380-117074-2	KA'AMILO WELLS	78	96	81	86	88	93	88	79
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	92	106	101	102	105	104	106	108
380-117074-4	FB: KA'AMILO WELLS	104	115	109	111	112	114	111	118
380-117160-B-1-A MS	Matrix Spike	70	96	76	82	83	86	96	101
380-117160-C-1-A MSD	Matrix Spike Duplicate	71	93	74	79	84	85	95	100
LCS 380-113215/22-A	Lab Control Sample	58	77	63	66	68	68	84	92
MBL 380-113215/20-A	Method Blank	59	79	65	69	68	73	83	88
MRL 380-113215/21-A	Lab Control Sample	60	88	67	69	75	80	93	97

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)
380-117074-2	KA'AMILO WELLS	95	88	101	107	101	107	104	106
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	109	105	102	103	102	111	107	102
380-117074-4	FB: KA'AMILO WELLS	113	110	107	109	106	114	111	109
380-117160-B-1-A MS	Matrix Spike	81	80	108	107	101	107	107	111
380-117160-C-1-A MSD	Matrix Spike Duplicate	84	79	107	109	105	112	108	112
LCS 380-113215/22-A	Lab Control Sample	68	64	97	102	99	110	102	109
MBL 380-113215/20-A	Method Blank	71	67	95	99	97	110	105	107

Isotope Dilution Summary

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

Job ID: 380-117074-1
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

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)
MRL 380-113215/21-A	Lab Control Sample	69	68	98	100	100	109	104	109

Surrogate Legend

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



QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-113215/20-A
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 113215

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		10/12/24 06:50	10/14/24 00:04	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	59		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C6 PFDA	79		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C5 PFHxA	65		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C4 PFHpA	69		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C8 PFOA	68		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C9 PFNA	73		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C7 PFUnA	83		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C2 PFDoA	88		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C4 PFBA	71		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C5 PFPeA	67		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C3 PFBS	95		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C3 PFHxS	99		50 - 200	10/12/24 06:50	10/14/24 00:04	1

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QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-113215/20-A
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 113215

<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	97		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C2-4:2-FTS	110		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C2-6:2-FTS	105		50 - 200	10/12/24 06:50	10/14/24 00:04	1
13C2-8:2-FTS	107		50 - 200	10/12/24 06:50	10/14/24 00:04	1

Lab Sample ID: LCS 380-113215/22-A
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 113215

<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)	59.9	59.6		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.9	61.0		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.9	56.6		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.9	64.2		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.9	62.8		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	59.9	63.4		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	59.9	62.5		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.9	64.5		ng/L		108	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.9	61.6		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	59.9	62.5		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	59.9	61.7		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.9	62.2		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	59.9	63.3		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.9	62.7		ng/L		105	70 - 130
Perfluorobutanoic acid (PFBA)	59.9	61.0		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.9	64.1		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.9	61.5		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.9	61.1		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.9	54.8		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.9	63.6		ng/L		106	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.9	60.8		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.9	63.0		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	59.9	64.4		ng/L		108	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.9	63.5		ng/L		106	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-113215/22-A
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 113215

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	59.9	60.3		ng/L		101	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	58		50 - 200				
13C6 PFDA	77		50 - 200				
13C5 PFHxA	63		50 - 200				
13C4 PFHpA	66		50 - 200				
13C8 PFOA	68		50 - 200				
13C9 PFNA	68		50 - 200				
13C7 PFUnA	84		50 - 200				
13C2 PFDoA	92		50 - 200				
13C4 PFBA	68		50 - 200				
13C5 PFPeA	64		50 - 200				
13C3 PFBS	97		50 - 200				
13C3 PFHxS	102		50 - 200				
13C8 PFOS	99		50 - 200				
13C2-4:2-FTS	110		50 - 200				
13C2-6:2-FTS	102		50 - 200				
13C2-8:2-FTS	109		50 - 200				

Lab Sample ID: MRL 380-113215/21-A
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 113215

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.99	2.27	J	ng/L		114	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.99	2.21	J	ng/L		111	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.99	2.04	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.99	2.33	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.99	2.25	J	ng/L		113	50 - 150
Perfluorodecanoic acid (PFDA)	1.99	2.32	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	1.99	2.30	J	ng/L		115	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.99	2.39	J	ng/L		120	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.99	2.25	J	ng/L		113	50 - 150
Perfluorohexanoic acid (PFHxA)	1.99	2.19	J	ng/L		110	50 - 150
Perfluorononanoic acid (PFNA)	1.99	2.31	J	ng/L		116	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.99	2.35	J	ng/L		118	50 - 150
Perfluorooctanoic acid (PFOA)	1.99	2.38	J	ng/L		119	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.99	2.36	J	ng/L		118	50 - 150
Perfluorobutanoic acid (PFBA)	1.99	2.34	J	ng/L		118	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-113215/21-A
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 113215

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.99	2.41	J	ng/L		121	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.99	2.31	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.99	2.40	J	ng/L		120	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.99	1.83	J	ng/L		92	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.99	2.33	J	ng/L		117	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.99	2.19	J	ng/L		110	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.99	1.96	J	ng/L		98	50 - 150
Perfluoropentanoic acid (PFPeA)	1.99	2.32	J	ng/L		117	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.99	2.20	J	ng/L		111	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.99	2.22	J	ng/L		111	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	60		50 - 200
13C6 PFDA	88		50 - 200
13C5 PFHxA	67		50 - 200
13C4 PFHpA	69		50 - 200
13C8 PFOA	75		50 - 200
13C9 PFNA	80		50 - 200
13C7 PFUnA	93		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	69		50 - 200
13C5 PFPeA	68		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	109		50 - 200

Lab Sample ID: 380-117160-B-1-A MS
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 113215

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	63.8		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	62.2		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	57.5		ng/L		95	70 - 130

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-117160-B-1-A MS
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 113215

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	64.9		ng/L		108	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	60.8		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	63.4		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	64.0		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	61.9		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	59.6		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	65.7		ng/L		109	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	62.3		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	64.5		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	63.9		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	64.1		ng/L		106	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	65.9		ng/L		109	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	64.7		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	61.4		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	59.1		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	61.7		ng/L		102	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	60.2		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	58.2		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	62.6		ng/L		104	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	64.3		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	60.9		ng/L		101	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	70		50 - 200
13C6 PFDA	96		50 - 200
13C5 PFHxA	76		50 - 200
13C4 PFHpA	82		50 - 200
13C8 PFOA	83		50 - 200
13C9 PFNA	86		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	81		50 - 200
13C5 PFPeA	80		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	101		50 - 200

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-117160-B-1-A MS
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 113215

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	111		50 - 200

Lab Sample ID: 380-117160-C-1-A MSD
Matrix: Water
Analysis Batch: 113256

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 113215

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		60.2	59.0		ng/L		98	70 - 130	8	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	58.9		ng/L		98	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	56.9		ng/L		94	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	60.7		ng/L		101	70 - 130	7	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	59.9		ng/L		99	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	62.8		ng/L		104	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	61.4		ng/L		102	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	62.2		ng/L		103	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	59.1		ng/L		98	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	63.4		ng/L		105	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	60.0		ng/L		100	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	59.6		ng/L		99	70 - 130	8	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	61.1		ng/L		101	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	60.3		ng/L		100	70 - 130	6	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	59.7		ng/L		99	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	61.4		ng/L		102	70 - 130	7	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.6		ng/L		104	70 - 130	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	59.8		ng/L		99	70 - 130	3	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	54.7		ng/L		91	70 - 130	8	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	59.7		ng/L		99	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	57.6		ng/L		96	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	59.1		ng/L		98	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	60.6		ng/L		101	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	61.9		ng/L		103	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	58.8		ng/L		98	70 - 130	4	30

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QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	71		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	74		50 - 200
13C4 PFHpA	79		50 - 200
13C8 PFOA	84		50 - 200
13C9 PFNA	85		50 - 200
13C7 PFUnA	95		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	84		50 - 200
13C5 PFPeA	79		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	108		50 - 200
13C2-8:2-FTS	112		50 - 200

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MBL 380-112963/20-A
Matrix: Water
Analysis Batch: 113226

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 112963

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/11/24 10:24	10/13/24 03:50	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	121		70 - 130			10/11/24 10:24	10/13/24 03:50	1
13C2 PFHxA	107		70 - 130			10/11/24 10:24	10/13/24 03:50	1
13C2 PFDA	120		70 - 130			10/11/24 10:24	10/13/24 03:50	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: MBL 380-112963/20-A
Matrix: Water
Analysis Batch: 113226

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 112963

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	98		70 - 130	10/11/24 10:24	10/13/24 03:50	1

Lab Sample ID: LCS 380-112963/22-A
Matrix: Water
Analysis Batch: 113226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 112963

<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>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	21.3		ng/L		85	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	25.4		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	26.9		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	24.4		ng/L		98	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	23.9		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	22.7		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	27.5		ng/L		110	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	25.2		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	26.5		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	26.5		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	23.1		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	24.7		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	25.0	25.6		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.0	27.2		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	24.8		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	25.0	25.8		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	27.2		ng/L		109	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	23.9		ng/L		96	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	109		70 - 130
13C2 PFHxA	105		70 - 130
13C2 PFDA	112		70 - 130
13C3-GenX	94		70 - 130

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: MRL 380-112963/21-A
Matrix: Water
Analysis Batch: 113226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 112963

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.21	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.25	J	ng/L		112	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.19	J	ng/L		109	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.38	J	ng/L		119	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.22	J	ng/L		111	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.24	J	ng/L		112	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.80	J	ng/L		90	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.24	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.41	J	ng/L		120	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.12	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.01	2.15	J	ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.18	J	ng/L		109	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.09	J	ng/L		104	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	107		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	116		70 - 130
13C3-GenX	94		70 - 130

Lab Sample ID: 380-117065-B-1-B LMS
Matrix: Water
Analysis Batch: 113226

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 112963

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	1.94	J	ng/L		97	50 - 150
Perfluorooctanesulfonic acid (PFOS)	3.5		2.01	5.71		ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.41		ng/L		120	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.09		ng/L		104	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 380-117065-B-1-B LMS

Matrix: Water

Analysis Batch: 113226

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 112963

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		2.01	2.05		ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.45		ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.42		ng/L		120	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.33		ng/L		111	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.28		ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.01	5.80		ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.57		ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.91		ng/L		114	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.42		ng/L		120	50 - 150
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.42		ng/L		121	50 - 150
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.17		ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.07		ng/L		103	50 - 150
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid(11Cl-PF3OUdS)	<2.0		2.01	2.28		ng/L		113	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.24		ng/L		111	50 - 150
	LMS	LMS							
Surrogate	%Recovery	Qualifier		Limits					
d5-NEtFOSAA	112			70 - 130					
13C2 PFHxA	110			70 - 130					
13C2 PFDA	113			70 - 130					
13C3-GenX	102			70 - 130					

Lab Sample ID: 380-117065-C-1-B LMSD

Matrix: Water

Analysis Batch: 113226

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 112963

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.00		ng/L		100	50 - 150	3	50
Perfluorooctanesulfonic acid (PFOS)	3.5		2.01	5.47		ng/L		97	50 - 150	4	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.25		ng/L		112	50 - 150	7	50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.19		ng/L		109	50 - 150	5	50
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		2.01	2.14		ng/L		106	50 - 150	4	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.41		ng/L		100	50 - 150	1	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.40		ng/L		119	50 - 150	1	50
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.18		ng/L		103	50 - 150	5	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.17		ng/L		108	50 - 150	5	50

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 380-117065-C-1-B LMSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 113226

Prep Batch: 112963

Analyte	Sample	Sample	Spike	LMSD	LMSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits			Limit
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.01	5.71		ng/L		101	50 - 150	2	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.52		ng/L		103	50 - 150	2	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.83		ng/L		109	50 - 150	3	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.39		ng/L		119	50 - 150	1	50
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.36		ng/L		117	50 - 150	3	50
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.01	2.10		ng/L		105	50 - 150	3	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.11		ng/L		105	50 - 150	2	50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.07		ng/L		103	50 - 150	9	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.23		ng/L		111	50 - 150	0	50
		LMSD	LMSD								
Surrogate		%Recovery	Qualifier	Limits							
d5-NEtFOSAA		119		70 - 130							
13C2 PFHxA		114		70 - 130							
13C2 PFDA		120		70 - 130							
13C3-GenX		111		70 - 130							

QC Association Summary

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

Job ID: 380-117074-1
SDG: Weekly PFAS

LCMS

Prep Batch: 112963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117074-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-117074-2	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	537.1 DW	
380-117074-4	FB: KA'AMILO WELLS	Total/NA	Water	537.1 DW	
MBL 380-112963/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-112963/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-112963/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-117065-B-1-B LMS	Matrix Spike	Total/NA	Water	537.1 DW	
380-117065-C-1-B LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 113215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117074-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
380-117074-2	KA'AMILO WELLS	Total/NA	Water	533	
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	533	
380-117074-4	FB: KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-113215/20-A	Method Blank	Total/NA	Water	533	
LCS 380-113215/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-113215/21-A	Lab Control Sample	Total/NA	Water	533	
380-117160-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-117160-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 113226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117074-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	112963
380-117074-2	KA'AMILO WELLS	Total/NA	Water	537.1	112963
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	537.1	112963
380-117074-4	FB: KA'AMILO WELLS	Total/NA	Water	537.1	112963
MBL 380-112963/20-A	Method Blank	Total/NA	Water	537.1	112963
LCS 380-112963/22-A	Lab Control Sample	Total/NA	Water	537.1	112963
MRL 380-112963/21-A	Lab Control Sample	Total/NA	Water	537.1	112963
380-117065-B-1-B LMS	Matrix Spike	Total/NA	Water	537.1	112963
380-117065-C-1-B LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1	112963

Analysis Batch: 113256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-117074-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	113215
380-117074-2	KA'AMILO WELLS	Total/NA	Water	533	113215
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TPC	Total/NA	Water	533	113215
380-117074-4	FB: KA'AMILO WELLS	Total/NA	Water	533	113215
MBL 380-113215/20-A	Method Blank	Total/NA	Water	533	113215
LCS 380-113215/22-A	Lab Control Sample	Total/NA	Water	533	113215
MRL 380-113215/21-A	Lab Control Sample	Total/NA	Water	533	113215
380-117160-B-1-A MS	Matrix Spike	Total/NA	Water	533	113215
380-117160-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	113215

Lab Chronicle

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

Job ID: 380-117074-1
 SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
 (331-206-TP065)**

Lab Sample ID: 380-117074-1

Date Collected: 10/08/24 09:45

Matrix: Drinking Water

Date Received: 10/10/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113215	XTD8	EA POM	10/12/24 06:50
Total/NA	Analysis	533		1	113256	SZ9R	EA POM	10/14/24 02:52
Total/NA	Prep	537.1 DW			112963	G9MN	EA POM	10/11/24 10:24
Total/NA	Analysis	537.1		1	113226	M7ML	EA POM	10/13/24 06:40

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-117074-2

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113215	XTD8	EA POM	10/12/24 06:50
Total/NA	Analysis	533		1	113256	SZ9R	EA POM	10/14/24 03:02
Total/NA	Prep	537.1 DW			112963	G9MN	EA POM	10/11/24 10:24
Total/NA	Analysis	537.1		1	113226	M7ML	EA POM	10/13/24 06:49

**Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
 (331-206-TP065)**

Lab Sample ID: 380-117074-3

Date Collected: 10/08/24 09:45

Matrix: Water

Date Received: 10/10/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113215	XTD8	EA POM	10/12/24 06:50
Total/NA	Analysis	533		1	113256	SZ9R	EA POM	10/14/24 03:12
Total/NA	Prep	537.1 DW			112963	G9MN	EA POM	10/11/24 10:24
Total/NA	Analysis	537.1		1	113226	M7ML	EA POM	10/13/24 06:59

Client Sample ID: FB: KA'AMILO WELLS

Lab Sample ID: 380-117074-4

Date Collected: 10/08/24 10:30

Matrix: Water

Date Received: 10/10/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			113215	XTD8	EA POM	10/12/24 06:50
Total/NA	Analysis	533		1	113256	SZ9R	EA POM	10/14/24 03:21
Total/NA	Prep	537.1 DW			112963	G9MN	EA POM	10/11/24 10:24
Total/NA	Analysis	537.1		1	113226	M7ML	EA POM	10/13/24 07:09

Laboratory References:

EA POM = Eurofins Eaton Analytical 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: 380-117074-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25

- 1
- 2
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- 17

Method Summary

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

Job ID: 380-117074-1
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	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 Eaton Analytical 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: 380-117074-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-117074-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	10/08/24 09:45	10/10/24 10:30
380-117074-2	KA'AMILO WELLS	Water	10/08/24 10:30	10/10/24 10:30
380-117074-3	FB: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Water	10/08/24 09:45	10/10/24 10:30
380-117074-4	FB: KA'AMILO WELLS	Water	10/08/24 10:30	10/10/24 10:30

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- 17

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

Chain of Custody Record



Client Information		Sampler: Kirk Iwamoto		Lab PM: Avada Rachelle		Carrier Tracking No(s): 380-27941-2757.2									
Client Contact: Dr. Ron Fenstermacher		Phone: +1 808 748 5840		E-Mail: Rachelle.Arada@etl.eurofins.com		Page: Page 2 of 2									
Company: City & County of Honolulu		PWSID:		Analysis Requested		Job #: 180-117074 COC									
Address: 630 South Beretania Street, Chemistry Lab		Due Date Requested: TAT Requested (days):		Field Filtered Sample (Yes or No):		Total Number of Containers:									
City: Honolulu		Compliance Project: Δ No		Form MS/MSD (Yes or No):		Preservation Codes:									
State Zip: HI 96843		PO #: C20525101 exp 05312023		SUBCONTRACT 825 PAH Physis LL (EAL) + TICS		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:									
Phone: 808-748-5091 (tel)		WO #:		8015B_GRO_LL - (MOD) GRO		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - PH 4-5 Y - Trizma Z - other (specify)									
Email: rfenstermacher@hbws.org		Project #: 38001111		8016B_PRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-		Special Instructions/Note:									
Site: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		SSOW#:		525.2_PREC - (MOD) 525plus PLUS TICS		chlorinated 10/8/24									
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code: (BT=TISSUE, A=ALV)	Matrix (W=water, S=solid, O=wastewat, BT=TISSUE, A=ALV)	Field Filtered Sample (Yes or No)	Form MS/MSD (Yes or No)	SUBCONTRACT	8015B_GRO_LL - (MOD) GRO	C18	525.2_PREC - (MOD) 525plus PLUS TICS	537_L_DW_PREC 537 1 Full List	533 - All Analytes	Analysis Requested	Carrier Tracking No(s)
HALAWA WELLS UNITS 1&2	8-Oct-2024	0945	G		Water										
AIEA GULCH WELLS PUMP 2	8-Oct-2024				Water										
AIEA WELLS PUMPS 1&2 (260)	8-Oct-2024				Water										
KA'AMILO WELLS	8-Oct-2024	1030	G		Water										
FB HALAWA WELLS UNITS 1&2	8-Oct-2024	0945	G												
FB-AIEA-GULCH-WELLS-PUMP-2	8-Oct-2024														
FB-AIEA WELLS PUMPS 1&2 (260)	8-Oct-2024														
FB KA'AMILO WELLS	8-Oct-2024	1030	G												
Possible Hazard Identification		Return To Client <input type="checkbox"/>		Disposal By Lab <input type="checkbox"/>		Archive For <input type="checkbox"/>		Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Special Instructions/QC Requirements:		Method of Shipment: ① 3991 3553 1610 ② 3991 3553 1621	
<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		Deliverable Requested I, II, III, IV, Other (specify)		Empty Kit Relinquished by		Date:		Relinquished by		Date/Time:		Relinquished by		Date/Time:	
Relinquished by		Date/Time: 10/9/2024 1200		Company: HBWS		Relinquished by		Date/Time: 10/10/2024 10:30		Company: CEAP		Relinquished by		Date/Time:	
Relinquished by		Date/Time:		Company:		Relinquished by		Date/Time:		Company:		Relinquished by		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks: (ASTA) ① 2.0°-0.0°=2.0°/② 2.7°-0.0°=2.7° BEL-FROZEN		Ver: 01/16/2019									



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-117074-1
SDG Number: Weekly PFAS

Login Number: 117074
List Number: 1
Creator: Gerfen, Chris

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	