

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-114671-1

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: 380-114671-1
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: 380-114671-1

Job ID: 380-114671-1

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Job Narrative 380-114671-1

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 9/25/2024 9:48 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 4.7°C.

Receipt Exceptions

The following samples were improperly preserved in the field: HALAWA WELLS UNITS 1 & 2 P1 (380-114671-1), AIEA GULCH WELLS PUMP 2 (380-114671-2), AIEA WELLS PUMPS 1 & 2 (260) P2 (380-114671-3), KA'AMILO WELLS (380-114671-4), FB HALAWA WELLS UNITS 1 & 2 (380-114671-5), FB AIEA GULCH WELLS PUMP 2 (380-114671-6), FB AIEA WELLS PUMPS 1 & 2 (260) (380-114671-7) and FB KA'AMILO WELLS (380-114671-8). The preservative used is not compatible with the analytes requested. This does not meet regulatory requirements. Received 537.1 with wrong preservative. The client was contacted regarding this, and the laboratory was instructed to cancel analysis.

PFAS

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: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-114671-1

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)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.7		2.0	ng/L	1		533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-114671-3

No Detections.

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-114671-4

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-114671-5

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-6

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-114671-7

No Detections.

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-114671-8

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: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-114671-1

Date Collected: 09/23/24 10:07

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoropentanoic acid (PFPeA)	2.7		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 15:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C6 PFDA	75		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C5 PFHxA	84		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C4 PFHpA	81		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C8 PFOA	77		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C9 PFNA	74		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C7 PFUnA	79		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C2 PFDoA	79		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C4 PFBA	96		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C5 PFPeA	93		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C3 PFBS	100		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C3 PFHxS	104		50 - 200	09/30/24 06:47	10/01/24 15:56	1

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Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-114671-1

Date Collected: 09/23/24 10:07

Matrix: Water

Date Received: 09/25/24 09:48

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	106		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C2-4:2-FTS	129		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C2-6:2-FTS	174		50 - 200	09/30/24 06:47	10/01/24 15:56	1
13C2-8:2-FTS	126		50 - 200	09/30/24 06:47	10/01/24 15:56	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-2

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

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		09/30/24 06:47	10/01/24 16:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	63		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C6 PFDA	57		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C5 PFHxA	72		50 - 200	09/30/24 06:47	10/01/24 16:18	1

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Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-2

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	67		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C8 PFOA	65		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C9 PFNA	60		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C7 PFUnA	63		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C2 PFDoA	73		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C4 PFBA	80		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C5 PFPeA	74		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C3 PFBS	107		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C3 PFHxS	106		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C8 PFOS	108		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C2-4:2-FTS	112		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C2-6:2-FTS	131		50 - 200	09/30/24 06:47	10/01/24 16:18	1
13C2-8:2-FTS	125		50 - 200	09/30/24 06:47	10/01/24 16:18	1

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-114671-3

Date Collected: 09/23/24 11:05

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-114671-3

Date Collected: 09/23/24 11:05

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		10/04/24 16:49	10/05/24 14:43	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C6 PFDA	80		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C5 PFHxA	92		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C4 PFHpA	87		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C8 PFOA	84		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C9 PFNA	79		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C7 PFUnA	86		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C2 PFDoA	89		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C4 PFBA	94		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C5 PFPeA	93		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C3 PFBS	111		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C3 PFHxS	111		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C8 PFOS	110		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C2-4:2-FTS	108		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C2-6:2-FTS	101		50 - 200			10/04/24 16:49	10/05/24 14:43	1
13C2-8:2-FTS	100		50 - 200			10/04/24 16:49	10/05/24 14:43	1

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-114671-4

Date Collected: 09/23/24 11:28

Matrix: Water

Date Received: 09/25/24 09:48

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		09/30/24 06:47	10/01/24 16:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-114671-4

Date Collected: 09/23/24 11:28

Matrix: Water

Date Received: 09/25/24 09:48

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-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:40	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C6 PFDA	91		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C5 PFHxA	93		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C4 PFHpA	88		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C8 PFOA	95		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C9 PFNA	99		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C7 PFUnA	80		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C2 PFDoA	63		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C4 PFBA	92		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C5 PFPeA	91		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C3 PFBS	106		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C3 PFHxS	102		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C8 PFOS	103		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C2-4:2-FTS	114		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C2-6:2-FTS	116		50 - 200			09/30/24 06:47	10/01/24 16:40	1
13C2-8:2-FTS	107		50 - 200			09/30/24 06:47	10/01/24 16:40	1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-114671-5

Date Collected: 09/23/24 10:07

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-114671-5

Date Collected: 09/23/24 10:07

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 16:50	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C6 PFDA	100		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C5 PFHxA	102		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C4 PFHpA	102		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C8 PFOA	102		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C9 PFNA	106		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C7 PFUnA	100		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C2 PFDoA	105		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C4 PFBA	103		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C5 PFPeA	100		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C3 PFBS	107		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C3 PFHxS	104		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C8 PFOS	106		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C2-4:2-FTS	124		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C2-6:2-FTS	117		50 - 200			09/30/24 06:47	10/01/24 16:50	1
13C2-8:2-FTS	119		50 - 200			09/30/24 06:47	10/01/24 16:50	1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-6

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

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		09/30/24 06:47	10/01/24 17:01	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-6

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C6 PFDA	102		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C5 PFHxA	106		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C4 PFHpA	106		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C8 PFOA	109		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C9 PFNA	111		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C7 PFUnA	105		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C2 PFDoA	105		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C4 PFBA	110		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C5 PFPeA	111		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C3 PFBS	111		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C3 PFHxS	112		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C8 PFOS	110		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C2-4:2-FTS	121		50 - 200	09/30/24 06:47	10/01/24 17:01	1
13C2-6:2-FTS	119		50 - 200	09/30/24 06:47	10/01/24 17:01	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-6

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	120		50 - 200	09/30/24 06:47	10/01/24 17:01	1

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-114671-7

Date Collected: 09/23/24 11:05

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C6 PFDA	100		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C5 PFHxA	103		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C4 PFHpA	104		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C8 PFOA	103		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C9 PFNA	102		50 - 200	09/30/24 06:47	10/01/24 17:12	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-114671-7

Date Collected: 09/23/24 11:05

Matrix: Water

Date Received: 09/25/24 09:48

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C7 PFUnA	105		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C2 PFDoA	100		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C4 PFBA	106		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C5 PFPeA	101		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C3 PFBS	108		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C3 PFHxS	109		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C8 PFOS	107		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C2-4:2-FTS	128		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C2-6:2-FTS	119		50 - 200	09/30/24 06:47	10/01/24 17:12	1
13C2-8:2-FTS	118		50 - 200	09/30/24 06:47	10/01/24 17:12	1

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-114671-8

Date Collected: 09/23/24 11:28

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-114671-1
 SDG: Weekly PFAS

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-114671-8

Date Collected: 09/23/24 11:28

Matrix: Water

Date Received: 09/25/24 09:48

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/30/24 06:47	10/01/24 17:23	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C6 PFDA	103		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C5 PFHxA	104		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C4 PFHpA	98		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C8 PFOA	99		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C9 PFNA	102		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C7 PFUnA	103		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C2 PFDoA	106		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C4 PFBA	110		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C5 PFPeA	110		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C3 PFBS	109		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C3 PFHxS	109		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C8 PFOS	105		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C2-4:2-FTS	111		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C2-6:2-FTS	118		50 - 200			09/30/24 06:47	10/01/24 17:23	1
13C2-8:2-FTS	114		50 - 200			09/30/24 06:47	10/01/24 17:23	1

Action Limit Summary

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-114671-1

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)	2.2		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-2

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

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-114671-3

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

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-114671-4

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

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Action Limit Summary

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-114671-5

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

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-6

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

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-114671-7

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

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-114671-8

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

Isotope Dilution Summary

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-114671-1	HALAWA WELLS UNITS 1 & 2 F	76	75	84	81	77	74	79	79
380-114671-2	AIEA GULCH WELLS PUMP 2	63	57	72	67	65	60	63	73
380-114671-3	AIEA WELLS PUMPS 1 & 2 (260) P2	82	80	92	87	84	79	86	89
380-114671-4	KA'AMILO WELLS	81	91	93	88	95	99	80	63
380-114671-5	FB HALAWA WELLS UNITS 1 & 2	89	100	102	102	102	106	100	105
380-114671-6	FB AIEA GULCH WELLS PUMP 2	94	102	106	106	109	111	105	105
380-114671-7	FB AIEA WELLS PUMPS 1 & 2 (260)	88	100	103	104	103	102	105	100
380-114671-8	FB KA'AMILO WELLS	94	103	104	98	99	102	103	106
380-114675-B-1-A MS	Matrix Spike	81	69	89	85	82	77	72	77
380-114675-C-1-A MSD	Matrix Spike Duplicate	84	71	92	89	82	76	74	78
380-115630-B-6-A MS	Matrix Spike	105	104	108	100	103	104	105	99
380-115630-C-6-A MSD	Matrix Spike Duplicate	102	107	107	102	105	104	108	103
LCS 380-110917/22-A	Lab Control Sample	96	105	108	108	104	107	106	106
LCS 380-111862/22-A	Lab Control Sample	95	105	108	109	104	105	102	105
MBL 380-110917/20-A	Method Blank	82	100	100	97	102	104	103	100
MBL 380-111862/20-A	Method Blank	96	111	117	114	116	114	113	111
MRL 380-110917/21-A	Lab Control Sample	77	96	92	94	94	101	97	98
MRL 380-111862/21-A	Lab Control Sample	88	102	105	103	102	104	103	103

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-114671-1	HALAWA WELLS UNITS 1 & 2 F	96	93	100	104	106	129	174	126
380-114671-2	AIEA GULCH WELLS PUMP 2	80	74	107	106	108	112	131	125
380-114671-3	AIEA WELLS PUMPS 1 & 2 (260) P2	94	93	111	111	110	108	101	100
380-114671-4	KA'AMILO WELLS	92	91	106	102	103	114	116	107
380-114671-5	FB HALAWA WELLS UNITS 1 & 2	103	100	107	104	106	124	117	119
380-114671-6	FB AIEA GULCH WELLS PUMP 2	110	111	111	112	110	121	119	120
380-114671-7	FB AIEA WELLS PUMPS 1 & 2 (260)	106	101	108	109	107	128	119	118
380-114671-8	FB KA'AMILO WELLS	110	110	109	109	105	111	118	114
380-114675-B-1-A MS	Matrix Spike	98	101	108	109	106	120	133	113
380-114675-C-1-A MSD	Matrix Spike Duplicate	97	99	105	108	110	117	120	120
380-115630-B-6-A MS	Matrix Spike	105	122	103	104	106	109	114	103
380-115630-C-6-A MSD	Matrix Spike Duplicate	106	125	105	108	105	108	115	104
LCS 380-110917/22-A	Lab Control Sample	106	108	106	102	105	113	111	108
LCS 380-111862/22-A	Lab Control Sample	109	105	107	107	107	99	99	99
MBL 380-110917/20-A	Method Blank	102	100	111	106	109	118	112	112
MBL 380-111862/20-A	Method Blank	114	108	109	112	111	106	105	101
MRL 380-110917/21-A	Lab Control Sample	99	96	108	108	110	118	119	110
MRL 380-111862/21-A	Lab Control Sample	109	103	107	104	106	101	100	101

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA

Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-110917/20-A
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110917

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		09/30/24 06:47	10/01/24 13:26	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		09/30/24 06:47	10/01/24 13:26	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	82		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C6 PFDA	100		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C5 PFHxA	100		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C4 PFHpA	97		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C8 PFOA	102		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C9 PFNA	104		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C7 PFUnA	103		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C2 PFDoA	100		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C4 PFBA	102		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C5 PFPeA	100		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C3 PFBS	111		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C3 PFHxS	106		50 - 200	09/30/24 06:47	10/01/24 13:26	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-110917/20-A
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110917

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	109		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C2-4:2-FTS	118		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C2-6:2-FTS	112		50 - 200	09/30/24 06:47	10/01/24 13:26	1
13C2-8:2-FTS	112		50 - 200	09/30/24 06:47	10/01/24 13:26	1

Lab Sample ID: LCS 380-110917/22-A
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110917

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.9	55.0		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.9	55.4		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.9	55.1		ng/L		92	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.9	54.7		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.9	54.4		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	59.9	54.3		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	59.9	57.8		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.9	52.6		ng/L		88	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.9	54.5		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	59.9	58.4		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	59.9	54.9		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.9	54.3		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	59.9	56.3		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.9	57.2		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	59.9	55.7		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.9	56.2		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.9	58.9		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.9	55.0		ng/L		92	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.9	51.7		ng/L		86	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.9	54.1		ng/L		90	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.9	52.1		ng/L		87	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.9	57.1		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	59.9	54.0		ng/L		90	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.9	56.4		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-110917/22-A
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110917

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	59.9	56.5		ng/L		94	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	96		50 - 200				
13C6 PFDA	105		50 - 200				
13C5 PFHxA	108		50 - 200				
13C4 PFHpA	108		50 - 200				
13C8 PFOA	104		50 - 200				
13C9 PFNA	107		50 - 200				
13C7 PFUnA	106		50 - 200				
13C2 PFDoA	106		50 - 200				
13C4 PFBA	106		50 - 200				
13C5 PFPeA	108		50 - 200				
13C3 PFBS	106		50 - 200				
13C3 PFHxS	102		50 - 200				
13C8 PFOS	105		50 - 200				
13C2-4:2-FTS	113		50 - 200				
13C2-6:2-FTS	111		50 - 200				
13C2-8:2-FTS	108		50 - 200				

Lab Sample ID: MRL 380-110917/21-A
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110917

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.89	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.82	J	ng/L		91	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.87	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.89	J	ng/L		95	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.01	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.06	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-110917/21-A
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110917

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.21	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.11	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.00	J	ng/L		100	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.72	J	ng/L		86	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.70	J	ng/L		85	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.81	J	ng/L		91	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.78	J	ng/L		89	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.75	J	ng/L		88	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	77		50 - 200
13C6 PFDA	96		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	94		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	98		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	119		50 - 200
13C2-8:2-FTS	110		50 - 200

Lab Sample ID: 380-114675-B-1-A MS
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 110917

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		60.4	59.2		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	57.3		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	56.7		ng/L		94	70 - 130

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-114675-B-1-A MS
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 110917

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	58.7		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	55.0		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	60.1		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	59.8		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	57.5		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	54.0		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	61.8		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	57.8		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	57.2		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	59.3		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	59.6		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	58.2		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	61.9		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	57.1		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	59.6		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.4	55.1		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	55.9		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	56.3		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	59.3		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	57.7		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	58.7		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	54.8		ng/L		91	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	81		50 - 200
13C6 PFDA	69		50 - 200
13C5 PFHxA	89		50 - 200
13C4 PFHpA	85		50 - 200
13C8 PFOA	82		50 - 200
13C9 PFNA	77		50 - 200
13C7 PFUnA	72		50 - 200
13C2 PFDoA	77		50 - 200
13C4 PFBA	98		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	106		50 - 200

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-114675-B-1-A MS
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 110917

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	133		50 - 200
13C2-8:2-FTS	113		50 - 200

Lab Sample ID: 380-114675-C-1-A MSD
Matrix: Water
Analysis Batch: 111136

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 110917

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	57.3		ng/L		95	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	55.4		ng/L		92	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	56.5		ng/L		94	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	58.9		ng/L		98	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	57.6		ng/L		95	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	56.9		ng/L		94	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	60.5		ng/L		101	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	55.2		ng/L		91	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	55.4		ng/L		92	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	61.2		ng/L		99	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	56.7		ng/L		94	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	55.4		ng/L		92	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	58.7		ng/L		96	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	57.9		ng/L		96	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	58.6		ng/L		97	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	55.5		ng/L		92	70 - 130	11	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	59.4		ng/L		99	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	60.5		ng/L		100	70 - 130	1	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	53.2		ng/L		88	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	57.1		ng/L		95	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	56.6		ng/L		94	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	59.0		ng/L		98	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	54.8		ng/L		89	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	56.2		ng/L		93	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	55.8		ng/L		93	70 - 130	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	84		50 - 200
13C6 PFDA	71		50 - 200
13C5 PFHxA	92		50 - 200
13C4 PFHpA	89		50 - 200
13C8 PFOA	82		50 - 200
13C9 PFNA	76		50 - 200
13C7 PFUnA	74		50 - 200
13C2 PFDoA	78		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	120		50 - 200
13C2-8:2-FTS	120		50 - 200

Lab Sample ID: MBL 380-111862/20-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111862

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-111862/20-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111862

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		10/04/24 16:49	10/05/24 13:17	1
Isotope Dilution	%Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C6 PFDA	111		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C5 PFHxA	117		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C4 PFHpA	114		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C8 PFOA	116		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C9 PFNA	114		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C7 PFUnA	113		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C2 PFDoA	111		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C4 PFBA	114		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C5 PFPeA	108		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C3 PFBS	109		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C3 PFHxS	112		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C8 PFOS	111		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C2-4:2-FTS	106		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C2-6:2-FTS	105		50 - 200			10/04/24 16:49	10/05/24 13:17	1
13C2-8:2-FTS	101		50 - 200			10/04/24 16:49	10/05/24 13:17	1

Lab Sample ID: LCS 380-111862/22-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.9	58.4		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.9	58.3		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.9	59.6		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.9	62.5		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.9	60.4		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	59.9	58.7		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	59.9	62.4		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.9	57.0		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.9	55.6		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	59.9	62.1		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	59.9	60.5		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.9	57.9		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	59.9	61.8		ng/L		103	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-111862/22-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	59.9	64.3		ng/L		107	70 - 130
Perfluorobutanoic acid (PFBA)	59.9	57.9		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.9	60.4		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.9	63.7		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.9	58.4		ng/L		98	70 - 130
Nonafluoro-3,6-dioxiheptanoic acid (NFDHA)	59.9	57.4		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.9	58.9		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.9	57.5		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.9	65.0		ng/L		109	70 - 130
Perfluoropentanoic acid (PFPeA)	59.9	61.6		ng/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.9	59.1		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	59.9	60.4		ng/L		101	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	102		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: MRL 380-111862/21-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111862

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.00	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.92	J	ng/L		96	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-111862/21-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111862

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.05	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.97	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.91	J	ng/L		96	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.07	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.11	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.13	J	ng/L		107	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.06	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.13	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.24	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	1.96	J	ng/L		98	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.93	J	ng/L		97	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	102		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	103		50 - 200
13C8 PFOA	102		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	103		50 - 200
13C2 PFDoA	103		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	104		50 - 200

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-111862/21-A
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111862

<i>Isotope Dilution</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	101		50 - 200
13C2-6:2-FTS	100		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: 380-115630-B-6-A MS
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 111862

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	114		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	116		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	121		ng/L		101	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	115		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	118		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	116		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	124		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	116		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	114		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	111		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	115		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	114		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	116		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	119		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	117		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	110		ng/L		92	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	106		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	117		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	124		ng/L		103	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	123		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	119		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	116		ng/L		97	70 - 130

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-115630-B-6-A MS
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 111862

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	118		ng/L		98	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	105		50 - 200						
13C6 PFDA	104		50 - 200						
13C5 PFHxA	108		50 - 200						
13C4 PFHpA	100		50 - 200						
13C8 PFOA	103		50 - 200						
13C9 PFNA	104		50 - 200						
13C7 PFUnA	105		50 - 200						
13C2 PFDoA	99		50 - 200						
13C4 PFBA	105		50 - 200						
13C5 PFPeA	122		50 - 200						
13C3 PFBS	103		50 - 200						
13C3 PFHxS	104		50 - 200						
13C8 PFOS	106		50 - 200						
13C2-4:2-FTS	109		50 - 200						
13C2-6:2-FTS	114		50 - 200						
13C2-8:2-FTS	103		50 - 200						

Lab Sample ID: 380-115630-C-6-A MSD
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 111862

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		120	124		ng/L		103	70 - 130	8	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	112		ng/L		93	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	120		ng/L		99	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	117		ng/L		97	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	117		ng/L		96	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		120	116		ng/L		96	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	124		ng/L		103	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	117		ng/L		97	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	110		ng/L		91	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	121		ng/L		100	70 - 130	8	30
Perfluorononanoic acid (PFNA)	<2.0		120	118		ng/L		98	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	116		ng/L		95	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		120	116		ng/L		96	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	117		ng/L		97	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	120		ng/L		99	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-114671-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-115630-C-6-A MSD
Matrix: Water
Analysis Batch: 111961

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 111862

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	120		ng/L		99	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	121		ng/L		101	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	114		ng/L		95	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	108		ng/L		90	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	107		ng/L		89	70 - 130	9	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	125		ng/L		104	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	120		ng/L		100	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	114		ng/L		95	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	117		ng/L		97	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	114		ng/L		94	70 - 130	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	108		50 - 200
13C2 PFDoA	103		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	125		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	108		50 - 200
13C2-6:2-FTS	115		50 - 200
13C2-8:2-FTS	104		50 - 200

QC Association Summary

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

Job ID: 380-114671-1
SDG: Weekly PFAS

LCMS

Prep Batch: 110917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-114671-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-114671-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-114671-4	KA'AMILO WELLS	Total/NA	Water	533	
380-114671-5	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	
380-114671-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-114671-7	FB AIEA WELLS PUMPS 1 & 2 (260)	Total/NA	Water	533	
380-114671-8	FB KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-110917/20-A	Method Blank	Total/NA	Water	533	
LCS 380-110917/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-110917/21-A	Lab Control Sample	Total/NA	Water	533	
380-114675-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-114675-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 111136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-114671-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	110917
380-114671-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	110917
380-114671-4	KA'AMILO WELLS	Total/NA	Water	533	110917
380-114671-5	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	110917
380-114671-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	110917
380-114671-7	FB AIEA WELLS PUMPS 1 & 2 (260)	Total/NA	Water	533	110917
380-114671-8	FB KA'AMILO WELLS	Total/NA	Water	533	110917
MBL 380-110917/20-A	Method Blank	Total/NA	Water	533	110917
LCS 380-110917/22-A	Lab Control Sample	Total/NA	Water	533	110917
MRL 380-110917/21-A	Lab Control Sample	Total/NA	Water	533	110917
380-114675-B-1-A MS	Matrix Spike	Total/NA	Water	533	110917
380-114675-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	110917

Prep Batch: 111862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-114671-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Total/NA	Water	533	
MBL 380-111862/20-A	Method Blank	Total/NA	Water	533	
LCS 380-111862/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-111862/21-A	Lab Control Sample	Total/NA	Water	533	
380-115630-B-6-A MS	Matrix Spike	Total/NA	Water	533	
380-115630-C-6-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 111961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-114671-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Total/NA	Water	533	111862
MBL 380-111862/20-A	Method Blank	Total/NA	Water	533	111862
LCS 380-111862/22-A	Lab Control Sample	Total/NA	Water	533	111862
MRL 380-111862/21-A	Lab Control Sample	Total/NA	Water	533	111862
380-115630-B-6-A MS	Matrix Spike	Total/NA	Water	533	111862
380-115630-C-6-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	111862

Lab Chronicle

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-114671-1

Date Collected: 09/23/24 10:07

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 15:56

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-2

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 16:18

Client Sample ID: AIEA WELLS PUMPS 1 & 2 (260) P2

Lab Sample ID: 380-114671-3

Date Collected: 09/23/24 11:05

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			111862	N8NE	EA POM	10/04/24 16:49
Total/NA	Analysis	533		1	111961	M7ML	EA POM	10/05/24 14:43

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-114671-4

Date Collected: 09/23/24 11:28

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 16:40

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-114671-5

Date Collected: 09/23/24 10:07

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 16:50

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-114671-6

Date Collected: 09/23/24 10:36

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 17:01

Lab Chronicle

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA WELLS PUMPS 1 & 2 (260)

Lab Sample ID: 380-114671-7

Date Collected: 09/23/24 11:05

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 17:12

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-114671-8

Date Collected: 09/23/24 11:28

Matrix: Water

Date Received: 09/25/24 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			110917	XTD8	EA POM	09/30/24 06:47
Total/NA	Analysis	533		1	111136	Y5FM	EA POM	10/01/24 17:23

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: 380-114671-1
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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Method Summary

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

Job ID: 380-114671-1
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated 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: 380-114671-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-114671-1	HALAWA WELLS UNITS 1 & 2 P1	Water	09/23/24 10:07	09/25/24 09:48
380-114671-2	AIEA GULCH WELLS PUMP 2	Water	09/23/24 10:36	09/25/24 09:48
380-114671-3	AIEA WELLS PUMPS 1 & 2 (260) P2	Water	09/23/24 11:05	09/25/24 09:48
380-114671-4	KA'AMILO WELLS	Water	09/23/24 11:28	09/25/24 09:48
380-114671-5	FB HALAWA WELLS UNITS 1 & 2	Water	09/23/24 10:07	09/25/24 09:48
380-114671-6	FB AIEA GULCH WELLS PUMP 2	Water	09/23/24 10:36	09/25/24 09:48
380-114671-7	FB AIEA WELLS PUMPS 1 & 2 (260)	Water	09/23/24 11:05	09/25/24 09:48
380-114671-8	FB KA'AMILO WELLS	Water	09/23/24 11:28	09/25/24 09:48

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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		Lab PM Arada Rachelle		COC No 380 27941 2757 2	
Client Contact Dr Ron Fenstermacher		E-Mail Rachelle.Arada@et.eurofins.com		Page: Page 2 of 2	
Company City & County of Honolulu		PWSID		Job #	
Address: 650 South Beretania Street, Chemistry Lab		Due Date Requested		Total Number of Containers	
City: Honolulu		TAT Requested (days)		Analysis Requested	
State, Zip: HI 96843		Compliance Project: Δ No		537 1_DM_PREC 537 1 Full List	
Phone: 808-748-5091 (tel)		PO # C20525101 exp 05312023		555_2_PREC (MOD) 525plus PLUS TICs	
E-mail: rfenstermacher@hbws.org		WO #		8015B_DRO_LL_CS HNL Ranges C10-C24/C24 C36/C8	
Project Name RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		Project # 38001111		8015B_GRO_LL (MOD) GRO	
Site: SOW#		SOW#		SUBCONTRACT 625 PAH Physic LL (EAL) + TICs	
Sample Identification		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)	
Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code (R-T, S, A, Air)	R	A
23 Sep-2024	1007	G	Water	Y	I
23-Sep-2024	1036	G	Water	3	3
23 Sep-2024	1105	G	Water	3	3
23 Sep-2024	1128	G	Water	3	3
HALAWA WELLS UNITS 1&2 P1 AIEA GULCH WELLS PUMP 2 AIEA WELLS PUMPS 1&2 (260) P2 KA'AMILO WELLS FB HALAWA WELLS UNITS 1&2 FB AIEA GULCH WELLS PUMP 2 FB AIEA WELLS PUMPS 1&2 (260) FB KA'AMILO WELLS 380-114671 COC					
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					
Deliverable Requested I II III IV Other (specify) _____					
Empty Kit Relinquished by _____ Date _____ Time _____					
Relinquished _____ Date/Time _____ Company HBWS					
Relinquished _____ Date/Time _____ Company HBWS					
Relinquished by _____ Date/Time _____ Company					
Custody Seals Intact: Custody Seal No Δ Yes Δ No					
Special Instructions/QC Requirements <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Method of Shipment: _____					
Received by: _____ Date/Time 9/28/24 09:48 Company BEAP					
Received by: _____ Date/Time _____ Company					
Cooler Temperature(s), C and Other Remarks: 4.1-0.0 = 4.7 630A Grel					

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-114671-1

SDG Number: Weekly PFAS

Login Number: 114671

List Number: 1

Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

