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# ANALYTICAL REPORT

## PREPARED FOR

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City & County of Honolulu  
630 South Beretania Street  
Public Service Bldg. Room 310  
Honolulu, Hawaii 96843

Generated 11/14/2024 9:30:28 AM

## JOB DESCRIPTION

RED-HILL  
Weekly PFAS  
RUSH Weekly Red Hill

## JOB NUMBER

380-121094-1

# Eurofins Eaton Analytical Pomona

## Job Notes

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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: 380-121094-1  
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: 380-121094-1

**Job ID: 380-121094-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-121094-1

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 11/7/2024 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0°C and 3.2°C.

### PFAS

Method 537.1\_DW\_PREC: The following QC issues in preparation batch 380-118201 and analytical batch 380-118292 were observed: Surrogates 13C2 PFHxA and 13C3-GenX recoveries were below QC Acceptable criteria (low bias), and Perfluorohexanoic acid (PFHxA) and Perfluorobutanesulfonic acid (PFBS) and Perfluoro(2-propoxypropanoic) acid recoveries were below QC Acceptable criteria (low bias) on LCS for FB sample FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-121094-5), FB AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-121094-6), FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-121094-7) and FB KA'AMILO WELLS (380-121094-8). Results not acceptable per method. LCS Extract was re-analyzed for confirmation. FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-121094-5), FB AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-121094-6), FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-121094-7) and FB KA'AMILO WELLS (380-121094-8) insufficient volume for re-extraction / re-analysis. Analysis of the FRB is required only if a field sample contains a method analyte or analytes at, or above, the MRL. Field blank data excluded due to this QC failure. Field sample results that had detections were also excluded.

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

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# Detection Summary

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1**  
**(331-206-TP065)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.3		2.0	ng/L	1		533	Total/NA

**Client Sample ID: AIEA GULCH WELLS PUMP 2**  
**(331-202-TP072)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-2**

No Detections.

**Client Sample ID: AIEA WELLS PUMPS 1&2 P2 (260)**  
**(331-203-TP400)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-3**

No Detections.

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-121094-4**

No Detections.

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2**  
**(331-206-TP065)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-5**

No Detections.

**Client Sample ID: FB AIEA GULCH WELLS PUMP 2**  
**(331-202-TP072)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-6**

No Detections.

**Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260)**  
**(331-203-TP400)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-7**

No Detections.

**Client Sample ID: FB KA'AMILO WELLS**

**Lab Sample ID: 380-121094-8**

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: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1  
(331-206-TP065)**

**Lab Sample ID: 380-121094-1**

Date Collected: 11/04/24 09:36

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.4</b>		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.1</b>		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.5</b>		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.3</b>		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:51	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C3 HFPO-DA	81		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C6 PFDA	68		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C5 PFHxA	87		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C4 PFHpA	87		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C8 PFOA	76		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C9 PFNA	70		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C7 PFUnA	75		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C2 PFDoA	83		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C4 PFBA	96		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C5 PFPeA	94		50 - 200			11/08/24 16:57	11/10/24 05:51	1
13C3 PFBS	113		50 - 200			11/08/24 16:57	11/10/24 05:51	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1  
(331-206-TP065)**

**Lab Sample ID: 380-121094-1**

Date Collected: 11/04/24 09:36

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFHxS	114		50 - 200	11/08/24 16:57	11/10/24 05:51	1
13C8 PFOS	109		50 - 200	11/08/24 16:57	11/10/24 05:51	1
13C2-4:2-FTS	124		50 - 200	11/08/24 16:57	11/10/24 05:51	1
13C2-6:2-FTS	123		50 - 200	11/08/24 16:57	11/10/24 05:51	1
13C2-8:2-FTS	114		50 - 200	11/08/24 16:57	11/10/24 05:51	1

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-121094-2**

Date Collected: 11/04/24 09:59

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:34	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-121094-2**

Date Collected: 11/04/24 09:59  
Date Received: 11/07/24 10:20

Matrix: Water  
PWSID Number: HI0000331

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	62		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C6 PFDA	64		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C5 PFHxA	70		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C4 PFHpA	71		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C8 PFOA	65		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C9 PFNA	62		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C7 PFUnA	71		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C2 PFDoA	80		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C4 PFBA	74		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C5 PFPeA	72		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C3 PFBS	108		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C3 PFHxS	112		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C8 PFOS	107		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C2-4:2-FTS	120		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C2-6:2-FTS	111		50 - 200	11/08/24 16:57	11/10/24 06:34	1
13C2-8:2-FTS	112		50 - 200	11/08/24 16:57	11/10/24 06:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130	11/12/24 14:30	11/13/24 11:03	1
13C2 PFHxA	123		70 - 130	11/12/24 14:30	11/13/24 11:03	1
13C2 PFDA	108		70 - 130	11/12/24 14:30	11/13/24 11:03	1
13C3-GenX	118		70 - 130	11/12/24 14:30	11/13/24 11:03	1

# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA WELLS PUMPS 1&2 P2 (260)  
(331-203-TP400)**

**Lab Sample ID: 380-121094-3**

**Date Collected: 11/04/24 10:26**

**Matrix: Water**

**Date Received: 11/07/24 10:20**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:45	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	65		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C6 PFDA	62		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C5 PFHxA	72		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C4 PFHpA	73		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C8 PFOA	65		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C9 PFNA	60		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C7 PFUnA	67		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C2 PFDoA	79		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C4 PFBA	78		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C5 PFPeA	75		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C3 PFBS	109		50 - 200			11/08/24 16:57	11/10/24 06:45	1
13C3 PFHxS	111		50 - 200			11/08/24 16:57	11/10/24 06:45	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA WELLS PUMPS 1&2 P2 (260)  
(331-203-TP400)**

**Lab Sample ID: 380-121094-3**

Date Collected: 11/04/24 10:26

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	106		50 - 200	11/08/24 16:57	11/10/24 06:45	1
13C2-4:2-FTS	123		50 - 200	11/08/24 16:57	11/10/24 06:45	1
13C2-6:2-FTS	115		50 - 200	11/08/24 16:57	11/10/24 06:45	1
13C2-8:2-FTS	108		50 - 200	11/08/24 16:57	11/10/24 06:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:12	1

  

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	118		70 - 130	11/12/24 14:30	11/13/24 11:12	1
13C2 PFHxA	122		70 - 130	11/12/24 14:30	11/13/24 11:12	1
13C2 PFDA	104		70 - 130	11/12/24 14:30	11/13/24 11:12	1
13C3-GenX	118		70 - 130	11/12/24 14:30	11/13/24 11:12	1

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-121094-4**

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-121094-4**

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 06:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	73		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C6 PFDA	76		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C5 PFHxA	83		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C4 PFHpA	84		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C8 PFOA	81		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C9 PFNA	78		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C7 PFUnA	78		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C2 PFDoA	87		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C4 PFBA	91		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C5 PFPeA	90		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C3 PFBS	107		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C3 PFHxS	107		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C8 PFOS	107		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C2-4:2-FTS	130		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C2-6:2-FTS	168		50 - 200	11/08/24 16:57	11/10/24 06:55	1
13C2-8:2-FTS	120		50 - 200	11/08/24 16:57	11/10/24 06:55	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-121094-4**

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/12/24 14:30	11/13/24 11:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	119		70 - 130			11/12/24 14:30	11/13/24 11:22	1
13C2 PFHxA	126		70 - 130			11/12/24 14:30	11/13/24 11:22	1
13C2 PFDA	106		70 - 130			11/12/24 14:30	11/13/24 11:22	1
13C3-GenX	118		70 - 130			11/12/24 14:30	11/13/24 11:22	1

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

**Lab Sample ID: 380-121094-5**

Date Collected: 11/04/24 09:36

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-121094-5**

Date Collected: 11/04/24 09:36

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:06	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C6 PFDA	105		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C5 PFHxA	104		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C4 PFHpA	108		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C8 PFOA	108		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C9 PFNA	107		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C7 PFUnA	105		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C2 PFDoA	106		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C4 PFBA	104		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C5 PFPeA	105		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C3 PFBS	108		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C3 PFHxS	107		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C8 PFOS	108		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C2-4:2-FTS	117		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C2-6:2-FTS	114		50 - 200			11/08/24 16:57	11/10/24 07:06	1
13C2-8:2-FTS	114		50 - 200			11/08/24 16:57	11/10/24 07:06	1

**Client Sample ID: FB AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-121094-6**

Date Collected: 11/04/24 09:59

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: FB AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-121094-6**

Date Collected: 11/04/24 09:59

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C6 PFDA	103		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C5 PFHxA	106		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C4 PFHpA	108		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C8 PFOA	108		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C9 PFNA	108		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C7 PFUnA	102		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C2 PFDoA	104		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C4 PFBA	108		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C5 PFPeA	108		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C3 PFBS	109		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C3 PFHxS	110		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C8 PFOS	108		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C2-4:2-FTS	117		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C2-6:2-FTS	114		50 - 200	11/08/24 16:57	11/10/24 07:17	1
13C2-8:2-FTS	109		50 - 200	11/08/24 16:57	11/10/24 07:17	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260)  
(331-203-TP400)**

**Lab Sample ID: 380-121094-7**

**Date Collected: 11/04/24 10:26**

**Matrix: Water**

**Date Received: 11/07/24 10:20**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C6 PFDA	104		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C5 PFHxA	106		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C4 PFHpA	109		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C8 PFOA	106		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C9 PFNA	104		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C7 PFUnA	102		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C2 PFDoA	104		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C4 PFBA	104		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C5 PFPeA	108		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C3 PFBS	109		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C3 PFHxS	112		50 - 200	11/08/24 16:57	11/10/24 07:28	1

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# Client Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260)  
(331-203-TP400)**

**Lab Sample ID: 380-121094-7**

Date Collected: 11/04/24 10:26

Matrix: Water

Date Received: 11/07/24 10:20

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	108		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C2-4:2-FTS	119		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C2-6:2-FTS	112		50 - 200	11/08/24 16:57	11/10/24 07:28	1
13C2-8:2-FTS	109		50 - 200	11/08/24 16:57	11/10/24 07:28	1

**Client Sample ID: FB KA'AMILO WELLS**

**Lab Sample ID: 380-121094-8**

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

**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		11/08/24 16:57	11/10/24 07:39	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/08/24 16:57	11/10/24 07:39	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C3 HFPO-DA	92		50 - 200			11/08/24 16:57	11/10/24 07:39	1
13C6 PFDA	109		50 - 200			11/08/24 16:57	11/10/24 07:39	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-121094-1  
 SDG: Weekly PFAS

**Client Sample ID: FB KA'AMILO WELLS**

**Lab Sample ID: 380-121094-8**

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C5 PFHxA	109		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C4 PFHpA	113		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C8 PFOA	108		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C9 PFNA	109		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C7 PFUnA	107		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C2 PFDoA	105		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C4 PFBA	111		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C5 PFPeA	113		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C3 PFBS	111		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C3 PFHxS	111		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C8 PFOS	108		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C2-4:2-FTS	123		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C2-6:2-FTS	113		50 - 200	11/08/24 16:57	11/10/24 07:39	1
13C2-8:2-FTS	109		50 - 200	11/08/24 16:57	11/10/24 07:39	1

# Action Limit Summary

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1**  
**(331-206-TP065)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-1**

## 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)	2.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA

**Client Sample ID: AIEA GULCH WELLS PUMP 2**  
**(331-202-TP072)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-2**

## Compliance Check

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

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

**Client Sample ID: AIEA WELLS PUMPS 1&2 P2 (260)**  
**(331-203-TP400)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-3**

## 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
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA

Eurofins Eaton Analytical Pomona

# Action Limit Summary

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: AIEA WELLS PUMPS 1&2 P2 (260)**  
**(331-203-TP400) (Continued)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-3**

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

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-121094-4**

## Compliance Check

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

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

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2**  
**(331-206-TP065)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-5**

## 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

# Action Limit Summary

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: FB AIEA GULCH WELLS PUMP 2**  
**(331-202-TP072)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-6**

## 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)**  
**(331-203-TP400)**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-121094-7**

## 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: 380-121094-8**

## 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

# Surrogate Summary

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

Job ID: 380-121094-1  
 SDG: Weekly PFAS

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

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-121094-2	AIEA GULCH WELLS PUMP 2 (	116	123	108	118
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP400)	118	122	104	118
380-121094-4	KA'AMILO WELLS	119	126	106	118
380-121158-E-1-A MS	Matrix Spike	110	122	104	116
380-121158-F-1-A MSD	Matrix Spike Duplicate	112	121	107	124
LCS 380-118544/22-A	Lab Control Sample	119	122	107	120
MBL 380-118544/20-A	Method Blank	121	127	109	121
MRL 380-118544/21-A	Lab Control Sample	118	122	106	121

**Surrogate Legend**

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

# Isotope Dilution Summary

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

Job ID: 380-121094-1  
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-121094-1	HALAWA WELLS UNITS 1 & 2 F	81	68	87	87	76	70	75	83
380-121094-1 MS	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	89	87	88	91	85	86	93	99
380-121094-1 MSD	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	85	86	87	87	82	83	92	98
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	62	64	70	71	65	62	71	80
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP400)	65	62	72	73	65	60	67	79
380-121094-4	KA'AMILO WELLS	73	76	83	84	81	78	78	87
380-121094-5	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	91	105	104	108	108	107	105	106
380-121094-6	FB AIEA GULCH WELLS PUMP 2 (331-202-TP072)	92	103	106	108	108	108	102	104
380-121094-7	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	89	104	106	109	106	104	102	104
380-121094-8	FB KA'AMILO WELLS	92	109	109	113	108	109	107	105
LCS 380-118101/22-A	Lab Control Sample	96	108	103	108	108	108	108	108
MBL 380-118101/20-A	Method Blank	99	104	111	114	110	107	95	98
MRL 380-118101/21-A	Lab Control Sample	92	110	103	108	108	108	106	108

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-121094-1	HALAWA WELLS UNITS 1 & 2 F	96	94	113	114	109	124	123	114
380-121094-1 MS	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	97	98	103	109	105	111	120	113
380-121094-1 MSD	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	93	89	106	106	104	109	104	105
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	74	72	108	112	107	120	111	112
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP400)	78	75	109	111	106	123	115	108
380-121094-4	KA'AMILO WELLS	91	90	107	107	107	130	168	120
380-121094-5	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	104	105	108	107	108	117	114	114
380-121094-6	FB AIEA GULCH WELLS PUMP 2 (331-202-TP072)	108	108	109	110	108	117	114	109
380-121094-7	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	104	108	109	112	108	119	112	109
380-121094-8	FB KA'AMILO WELLS	111	113	111	111	108	123	113	109
LCS 380-118101/22-A	Lab Control Sample	107	110	105	106	103	107	110	106
MBL 380-118101/20-A	Method Blank	111	110	107	107	105	121	115	107
MRL 380-118101/21-A	Lab Control Sample	107	103	106	106	104	119	112	108

#### Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFDaA = 13C2 PFDoA

# Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

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: 380-121094-1

SDG: Weekly PFAS

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# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-118101/20-A**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

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		11/08/24 16:57	11/10/24 05:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.61		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorohexanoic acid (PFHxA)	<0.47		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorooctanesulfonic acid (PFOS)	<0.44		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoroundecanoic acid (PFUnA)	<0.43		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluorobutanoic acid (PFBA)	<0.70		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.39		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.47		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		11/08/24 16:57	11/10/24 05:18	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C6 PFDA	104		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C5 PFHxA	111		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C4 PFHpA	114		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C8 PFOA	110		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C9 PFNA	107		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C7 PFUnA	95		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C2 PFDoA	98		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C4 PFBA	111		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C5 PFPeA	110		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C3 PFBS	107		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C3 PFHxS	107		50 - 200	11/08/24 16:57	11/10/24 05:18	1

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# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-118101/20-A**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	105		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C2-4:2-FTS	121		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C2-6:2-FTS	115		50 - 200	11/08/24 16:57	11/10/24 05:18	1
13C2-8:2-FTS	107		50 - 200	11/08/24 16:57	11/10/24 05:18	1

**Lab Sample ID: LCS 380-118101/22-A**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	121	111		ng/L		92	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	121	114		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	114		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	121	112		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	121	119		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	121	119		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	121	117		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	121	118		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	121	121		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	121	120		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	121	118		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	121	123		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	121	115		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	121	115		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	121	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	121	117		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	121	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	121	120		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	121	116		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	121	116		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	121	114		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	121	113		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	121	114		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	121	120		ng/L		99	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: LCS 380-118101/22-A**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	121	117		ng/L		97	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	96		50 - 200				
13C6 PFDA	108		50 - 200				
13C5 PFHxA	103		50 - 200				
13C4 PFHpA	108		50 - 200				
13C8 PFOA	108		50 - 200				
13C9 PFNA	108		50 - 200				
13C7 PFUnA	108		50 - 200				
13C2 PFDoA	108		50 - 200				
13C4 PFBA	107		50 - 200				
13C5 PFPeA	110		50 - 200				
13C3 PFBS	105		50 - 200				
13C3 PFHxS	106		50 - 200				
13C8 PFOS	103		50 - 200				
13C2-4:2-FTS	107		50 - 200				
13C2-6:2-FTS	110		50 - 200				
13C2-8:2-FTS	106		50 - 200				

**Lab Sample ID: MRL 380-118101/21-A**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.98	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.08	J	ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.14	J	ng/L		107	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.18	J	ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.31	J	ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.12	J	ng/L		105	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.38	J	ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.32	J	ng/L		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.34	J	ng/L		117	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.24	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.24	J	ng/L		111	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.14	J	ng/L		107	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MRL 380-118101/21-A**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.31	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.43	J	ng/L		121	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.43	J	ng/L		121	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.08	J	ng/L		103	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.14	J	ng/L		107	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.11	J	ng/L		105	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	110		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	108		50 - 200

**Lab Sample ID: 380-121094-1 MS**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

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		121	109		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	111		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	110		ng/L		91	70 - 130

# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

Lab Sample ID: 380-121094-1 MS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 118179

Prep Batch: 118101

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		121	116		ng/L		96	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	120		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	117		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	119		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.4		121	121		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	2.1		121	128		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	122		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.5		121	123		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	122		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	119		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	118		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	120		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	122		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	112		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	120		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	118		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	115		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	2.3		121	116		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	120		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	114		ng/L		95	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	87		50 - 200
13C5 PFHxA	88		50 - 200
13C4 PFHpA	91		50 - 200
13C8 PFOA	85		50 - 200
13C9 PFNA	86		50 - 200
13C7 PFUnA	93		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	98		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	105		50 - 200

# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: 380-121094-1 MS**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	120		50 - 200
13C2-8:2-FTS	113		50 - 200

**Lab Sample ID: 380-121094-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 118179**

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)**  
**Prep Type: Total/NA**  
**Prep Batch: 118101**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>Spike Added</b>	<b>MSD Result</b>	<b>MSD Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	106		ng/L		88	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	111		ng/L		92	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	109		ng/L		91	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	120		ng/L		99	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	120		ng/L		98	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		121	120		ng/L		100	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	115		ng/L		95	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	119		ng/L		98	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	2.4		121	120		ng/L		98	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	2.1		121	125		ng/L		102	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		121	120		ng/L		99	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	2.5		121	122		ng/L		99	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		121	117		ng/L		95	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	117		ng/L		97	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		121	118		ng/L		97	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	119		ng/L		99	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	121		ng/L		100	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	125		ng/L		103	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	116		ng/L		96	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	114		ng/L		94	70 - 130	5	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	114		ng/L		94	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	121		ng/L		100	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)	2.3		121	125		ng/L		101	70 - 130	8	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	116		ng/L		96	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	115		ng/L		95	70 - 130	1	30

# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	85		50 - 200
13C6 PFDA	86		50 - 200
13C5 PFHxA	87		50 - 200
13C4 PFHpA	87		50 - 200
13C8 PFOA	82		50 - 200
13C9 PFNA	83		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	98		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	89		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	105		50 - 200

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

**Lab Sample ID: MBL 380-118544/20-A**  
**Matrix: Water**  
**Analysis Batch: 118672**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 118544**

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/12/24 14:30	11/13/24 08:58	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	121		70 - 130			11/12/24 14:30	11/13/24 08:58	1
13C2 PFHxA	127		70 - 130			11/12/24 14:30	11/13/24 08:58	1
13C2 PFDA	109		70 - 130			11/12/24 14:30	11/13/24 08:58	1

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MBL 380-118544/20-A**  
**Matrix: Water**  
**Analysis Batch: 118672**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 118544**

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	121		70 - 130	11/12/24 14:30	11/13/24 08:58	1

**Lab Sample ID: LCS 380-118544/22-A**  
**Matrix: Water**  
**Analysis Batch: 118672**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118544**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.2	55.2		ng/L		110	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.2	53.1		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.2	52.2		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.2	52.5		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.2	55.3		ng/L		110	70 - 130
Perfluorohexanoic acid (PFHxA)	50.2	57.8		ng/L		115	70 - 130
Perfluorododecanoic acid (PFDoA)	50.2	49.3		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	50.2	55.5		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	50.2	48.8		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.2	52.1		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.2	54.5		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.2	53.5		ng/L		107	70 - 130
Perfluorononanoic acid (PFNA)	50.2	50.2		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.2	48.9		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.2	50.7		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	50.2	53.1		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.2	52.4		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.2	57.9		ng/L		115	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	119		70 - 130
13C2 PFHxA	122		70 - 130
13C2 PFDA	107		70 - 130
13C3-GenX	120		70 - 130



# QC Sample Results

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

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

**Lab Sample ID: MRL 380-118544/21-A**  
**Matrix: Water**  
**Analysis Batch: 118672**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 118544**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.10	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.34	J	ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.13	J	ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.29	J	ng/L		114	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.38	J	ng/L		119	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.46	J	ng/L		122	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.22	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.28	J	ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.32	J	ng/L		115	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.01	2.10	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.25	J	ng/L		112	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.22	J	ng/L		111	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.43	J	ng/L		121	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	118		70 - 130
13C2 PFHxA	122		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	121		70 - 130

**Lab Sample ID: 380-121158-E-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 118672**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 118544**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	54.5		ng/L		109	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.1	53.0		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	50.4		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	49.3		ng/L		98	70 - 130

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# QC Association Summary

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

## LCMS

### Prep Batch: 118101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-121094-1	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP01	Total/NA	Water	533	
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	533	
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP	Total/NA	Water	533	
380-121094-4	KA'AMILO WELLS	Total/NA	Water	533	
380-121094-5	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP01	Total/NA	Water	533	
380-121094-6	FB AIEA GULCH WELLS PUMP 2 (331-202-TP07	Total/NA	Water	533	
380-121094-7	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP	Total/NA	Water	533	
380-121094-8	FB KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-118101/20-A	Method Blank	Total/NA	Water	533	
LCS 380-118101/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-118101/21-A	Lab Control Sample	Total/NA	Water	533	
380-121094-1 MS	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP01	Total/NA	Water	533	
380-121094-1 MSD	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP01	Total/NA	Water	533	

### Analysis Batch: 118179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-121094-1	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP01	Total/NA	Water	533	118101
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	533	118101
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP	Total/NA	Water	533	118101
380-121094-4	KA'AMILO WELLS	Total/NA	Water	533	118101
380-121094-5	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP01	Total/NA	Water	533	118101
380-121094-6	FB AIEA GULCH WELLS PUMP 2 (331-202-TP07	Total/NA	Water	533	118101
380-121094-7	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP	Total/NA	Water	533	118101
380-121094-8	FB KA'AMILO WELLS	Total/NA	Water	533	118101
MBL 380-118101/20-A	Method Blank	Total/NA	Water	533	118101
LCS 380-118101/22-A	Lab Control Sample	Total/NA	Water	533	118101
MRL 380-118101/21-A	Lab Control Sample	Total/NA	Water	533	118101
380-121094-1 MS	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP01	Total/NA	Water	533	118101
380-121094-1 MSD	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP01	Total/NA	Water	533	118101

### Prep Batch: 118544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	537.1 DW	
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP	Total/NA	Water	537.1 DW	
380-121094-4	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
MBL 380-118544/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-118544/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-118544/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-121158-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-121158-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 118672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	537.1	118544
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP	Total/NA	Water	537.1	118544
380-121094-4	KA'AMILO WELLS	Total/NA	Water	537.1	118544
MBL 380-118544/20-A	Method Blank	Total/NA	Water	537.1	118544
LCS 380-118544/22-A	Lab Control Sample	Total/NA	Water	537.1	118544
MRL 380-118544/21-A	Lab Control Sample	Total/NA	Water	537.1	118544
380-121158-E-1-A MS	Matrix Spike	Total/NA	Water	537.1	118544
380-121158-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	118544

Eurofins Eaton Analytical Pomona

# Lab Chronicle

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1  
(331-206-TP065)**

**Lab Sample ID: 380-121094-1**

Date Collected: 11/04/24 09:36

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 05:51

**Client Sample ID: AIEA GULCH WELLS PUMP 2  
(331-202-TP072)**

**Lab Sample ID: 380-121094-2**

Date Collected: 11/04/24 09:59

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 06:34
Total/NA	Prep	537.1 DW			118544	HM3M	EA POM	11/12/24 14:30
Total/NA	Analysis	537.1		1	118672	SZ9R	EA POM	11/13/24 11:03

**Client Sample ID: AIEA WELLS PUMPS 1&2 P2 (260)  
(331-203-TP400)**

**Lab Sample ID: 380-121094-3**

Date Collected: 11/04/24 10:26

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 06:45
Total/NA	Prep	537.1 DW			118544	HM3M	EA POM	11/12/24 14:30
Total/NA	Analysis	537.1		1	118672	SZ9R	EA POM	11/13/24 11:12

**Client Sample ID: KA'AMILO WELLS**

**Lab Sample ID: 380-121094-4**

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 06:55
Total/NA	Prep	537.1 DW			118544	HM3M	EA POM	11/12/24 14:30
Total/NA	Analysis	537.1		1	118672	SZ9R	EA POM	11/13/24 11:22

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

**Lab Sample ID: 380-121094-5**

Date Collected: 11/04/24 09:36

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 07:06

# Lab Chronicle

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

## Client Sample ID: FB AIEA GULCH WELLS PUMP 2 (331-202-TP072)

Lab Sample ID: 380-121094-6

Date Collected: 11/04/24 09:59

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 07:17

## Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)

Lab Sample ID: 380-121094-7

Date Collected: 11/04/24 10:26

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 07:28

## Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-121094-8

Date Collected: 11/04/24 10:53

Matrix: Water

Date Received: 11/07/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			118101	HM3M	EA POM	11/08/24 16:57
Total/NA	Analysis	533		1	118179	M7ML	EA POM	11/10/24 07:39

### 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: 380-121094-1  
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
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

# Method Summary

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

Job ID: 380-121094-1  
SDG: Weekly PFAS

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100





# Sample Summary

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

Job ID: 380-121094-1  
 SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-121094-1	HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065)	Water	11/04/24 09:36	11/07/24 10:20	HI0000331
380-121094-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	11/04/24 09:59	11/07/24 10:20	HI0000331
380-121094-3	AIEA WELLS PUMPS 1&2 P2 (260) (331-203-TP400)	Water	11/04/24 10:26	11/07/24 10:20	HI0000331
380-121094-4	KA'AMILO WELLS	Water	11/04/24 10:53	11/07/24 10:20	
380-121094-5	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Water	11/04/24 09:36	11/07/24 10:20	HI0000331
380-121094-6	FB AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	11/04/24 09:59	11/07/24 10:20	HI0000331
380-121094-7	FB AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	11/04/24 10:26	11/07/24 10:20	HI0000331
380-121094-8	FB KA'AMILO WELLS	Water	11/04/24 10:53	11/07/24 10:20	





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

# Chain of Custody Record



<b>Client Information</b>		Lab PM: Arada Rachelle	Carrier Tracking No(s): 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: 630 South Beretania Street, Chemistry Lab		Analysis Requested	
City: Honolulu	State: HI, 96843	Due Date Requested:	Preservation Codes:
Phone: 808-748-5091 (tel)	PO #: C20525101 exp 05312023	TAT Requested (days):	M Hioxane
Email: rfenstermacher@hbws.org	Compliance Project: Δ No	Project #: 38001111	N None
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	WO #:	SSOW#:	O AsNaO2
Site:			P Na2O4S
			Q Na2SO3
			R - Na2S2O3
			S H2SO4
			T - TSP Dodecahydrate
			U - Acetone
			V MCAA
			W pH 4-5
			X EDTA
			Y Trizma
			Z - other (specify)
			Other:

  

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste, B=soil, T=tissue, A=air)	Field Filtered Sample (Yes or No)	Form MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL (MOD) GRO	8015B_DRO_LL_CS HNL Ranges C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537_1_DW_PREC 537 1 Full List	533 All Analytes	Total Number of containers	Special Instructions/Note
HALAWA WELLS UNITS 1&2 P1	4-Nov-2024	0936	G	Water	X	X								
AIEA GULCH WELLS PUMP 2	4-Nov-2024	0959	G	Water										chlorinated
AIEA WELLS PUMPS 1&2 (260) P2	4-Nov-2024	1026	G	Water										chlorinated
K'A'MILO WELLS	4-Nov-2024	1053	G	Water										chlorinated
FB HALAWA WELLS UNITS 1&2	4-Nov-2024	0936												
FB AIEA GULCH WELLS PUMP 2	4-Nov-2024	0959												
FB AIEA WELLS PUMPS 1&2 (260)	4-Nov-2024	1026												
FB K'A'MILO WELLS	4-Nov-2024	1053												.80-121094 COC

  

**Possible Hazard Identification**  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

Deliverable Requested I, II, III, IV Other (specify)

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 06 NOV 2024 1400 Company: HBWS

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals intact: Δ Yes Δ No Custody Seal No

Special Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements: ① 7797 8254 2080 ② 7797 8254 2090

Received by: \_\_\_\_\_ Date/Time: 11/17/24 10:20 Company: BEAF

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Colder Temperature(s) °C and Other Remarks: (75.1) 01.0°-0.0°=1.0° (2) 3.2°-0.0°=3.2° (BEC FOR 2024)



# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-121094-1

SDG Number: Weekly PFAS

**Login Number: 121094**

**List Number: 1**

**Creator: Ngo, Theodore**

**List Source: Eurofins Eaton Analytical Pomona**

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

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