

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 7/31/2024 5:26:10 PM

JOB DESCRIPTION

RED-HILL
PFAS
RUSH Weekly Red Hill

JOB NUMBER

380-105508-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



Generated
7/31/2024 5:26:10 PM

Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	22
Surrogate Summary	26
Isotope Dilution Summary	27
QC Sample Results	29
QC Association Summary	51
Lab Chronicle	53
Certification Summary	55
Method Summary	56
Sample Summary	57
Chain of Custody	58
Receipt Checklists	59

Definitions/Glossary

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

Job ID: 380-105508-1
SDG: 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.
α	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: 380-105508-1

Job ID: 380-105508-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-105508-1

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 7/24/2024 9:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C.

PFAS

Methods EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results. HALAWA WELLS UNITS 1 & 2 (331-206-TP065) (380-105508-4).

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

Detection Summary

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: MOANALUA WELLS (331-223-TP202)
PWSID Number: HI0000331

Lab Sample ID: 380-105508-1

No Detections.

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

Lab Sample ID: 380-105508-2

No Detections.

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

Lab Sample ID: 380-105508-3

No Detections.

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

Lab Sample ID: 380-105508-4

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)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.8		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-105508-5

No Detections.

Client Sample ID: FB: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-105508-6

No Detections.

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

Lab Sample ID: 380-105508-7

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-105508-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-105508-1

Date Collected: 07/22/24 09:58

Matrix: Drinking Water

Date Received: 07/24/24 09:37

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		07/25/24 14:42	07/26/24 19:42	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	84		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C6 PFDA	104		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C5 PFHxA	91		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C4 PFHpA	95		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C8 PFOA	98		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C9 PFNA	97		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C7 PFUnA	106		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C2 PFDoA	112		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C4 PFBA	100		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C5 PFPeA	104		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C3 PFBS	97		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C3 PFHxS	109		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C8 PFOS	108		50 - 200	07/25/24 14:42	07/26/24 19:42	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-105508-1

Date Collected: 07/22/24 09:58

Matrix: Drinking Water

Date Received: 07/24/24 09:37

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	129		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C2-6:2-FTS	129		50 - 200	07/25/24 14:42	07/26/24 19:42	1
13C2-8:2-FTS	116		50 - 200	07/25/24 14:42	07/26/24 19:42	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		07/26/24 08:20	07/26/24 23:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	112		70 - 130	07/26/24 08:20	07/26/24 23:24	1
d5-NEtFOSAA	111		70 - 130	07/26/24 08:20	07/27/24 00:02	1
13C2 PFHxA	109		70 - 130	07/26/24 08:20	07/26/24 23:24	1
13C2 PFHxA	102		70 - 130	07/26/24 08:20	07/27/24 00:02	1
13C2 PFDA	111		70 - 130	07/26/24 08:20	07/26/24 23:24	1
13C2 PFDA	107		70 - 130	07/26/24 08:20	07/27/24 00:02	1
13C3-GenX	106		70 - 130	07/26/24 08:20	07/26/24 23:24	1
13C3-GenX	98		70 - 130	07/26/24 08:20	07/27/24 00:02	1

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

Lab Sample ID: 380-105508-2

Date Collected: 07/22/24 10:56

Matrix: Drinking Water

Date Received: 07/24/24 09:37

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-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-2

Date Collected: 07/22/24 10:56

Matrix: Drinking Water

Date Received: 07/24/24 09:37

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		07/25/24 14:42	07/26/24 19:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 19:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C6 PFDA	100		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C5 PFHxA	83		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C4 PFHpA	90		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C8 PFOA	93		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C9 PFNA	90		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C7 PFUnA	102		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C2 PFDoA	106		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C4 PFBA	92		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C5 PFPeA	94		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C3 PFBS	100		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C3 PFHxS	108		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C8 PFOS	106		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C2-4:2-FTS	117		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C2-6:2-FTS	124		50 - 200	07/25/24 14:42	07/26/24 19:53	1
13C2-8:2-FTS	110		50 - 200	07/25/24 14:42	07/26/24 19:53	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-2

Date Collected: 07/22/24 10:56

Matrix: Drinking Water

Date Received: 07/24/24 09:37

PWSID Number: HI0000331

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		07/26/24 08:20	07/26/24 23:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130			07/26/24 08:20	07/26/24 23:33	1
13C2 PFHxA	105		70 - 130			07/26/24 08:20	07/26/24 23:33	1
13C2 PFDA	111		70 - 130			07/26/24 08:20	07/26/24 23:33	1
13C3-GenX	107		70 - 130			07/26/24 08:20	07/26/24 23:33	1

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

Lab Sample ID: 380-105508-3

Date Collected: 07/22/24 11:22

Matrix: Drinking Water

Date Received: 07/24/24 09:37

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-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-3

Date Collected: 07/22/24 11:22
Date Received: 07/24/24 09:37

Matrix: Drinking Water
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
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:04	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C6 PFDA	83		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C5 PFHxA	84		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C4 PFHpA	84		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C8 PFOA	82		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C9 PFNA	76		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C7 PFUnA	90		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C2 PFDoA	101		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C4 PFBA	101		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C5 PFPeA	97		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C3 PFBS	96		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C3 PFHxS	110		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C8 PFOS	109		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C2-4:2-FTS	122		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C2-6:2-FTS	118		50 - 200			07/25/24 14:42	07/26/24 20:04	1
13C2-8:2-FTS	107		50 - 200			07/25/24 14:42	07/26/24 20:04	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		07/26/24 08:20	07/26/24 23:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-3

Date Collected: 07/22/24 11:22
Date Received: 07/24/24 09:37

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130			07/26/24 08:20	07/26/24 23:43	1
13C2 PFHxA	111		70 - 130			07/26/24 08:20	07/26/24 23:43	1
13C2 PFDA	113		70 - 130			07/26/24 08:20	07/26/24 23:43	1
13C3-GenX	104		70 - 130			07/26/24 08:20	07/26/24 23:43	1

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

Lab Sample ID: 380-105508-4

Date Collected: 07/22/24 10:30
Date Received: 07/24/24 09:37

Matrix: Drinking Water
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		07/25/24 14:42	07/26/24 20:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorohexanesulfonic acid (PFHxS)	2.4		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-4

Date Collected: 07/22/24 10:30

Matrix: Drinking Water

Date Received: 07/24/24 09:37

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
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoropentanoic acid (PFPeA)	2.8		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/25/24 14:42	07/26/24 20:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	78		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C6 PFDA	96		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C5 PFHxA	86		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C4 PFHpA	86		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C8 PFOA	90		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C9 PFNA	88		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C7 PFUnA	101		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C2 PFDoA	106		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C4 PFBA	95		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C5 PFPeA	97		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C3 PFBS	95		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C3 PFHxS	108		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C8 PFOS	107		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C2-4:2-FTS	124		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C2-6:2-FTS	124		50 - 200	07/25/24 14:42	07/26/24 20:14	1
13C2-8:2-FTS	107		50 - 200	07/25/24 14:42	07/26/24 20:14	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		07/26/24 08:20	07/26/24 23:53	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorohexanoic acid (PFHxA)	2.3		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-4

Date Collected: 07/22/24 10:30

Matrix: Drinking Water

Date Received: 07/24/24 09:37

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/26/24 23:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130			07/26/24 08:20	07/26/24 23:53	1
13C2 PFHxA	109		70 - 130			07/26/24 08:20	07/26/24 23:53	1
13C2 PFDA	112		70 - 130			07/26/24 08:20	07/26/24 23:53	1
13C3-GenX	108		70 - 130			07/26/24 08:20	07/26/24 23:53	1

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-105508-5

Date Collected: 07/22/24 09:58

Matrix: Water

Date Received: 07/24/24 09:37

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		07/26/24 17:11	07/28/24 01:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-105508-5

Date Collected: 07/22/24 09:58

Matrix: Water

Date Received: 07/24/24 09:37

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:25	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C6 PFDA	110		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C5 PFHxA	103		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C4 PFHpA	105		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C8 PFOA	107		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C9 PFNA	105		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C7 PFUnA	113		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C2 PFDoA	121		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C4 PFBA	111		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C5 PFPeA	116		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C3 PFBS	99		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C3 PFHxS	109		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C8 PFOS	109		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C2-4:2-FTS	118		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C2-6:2-FTS	125		50 - 200			07/26/24 17:11	07/28/24 01:25	1
13C2-8:2-FTS	116		50 - 200			07/26/24 17:11	07/28/24 01:25	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		07/30/24 09:30	07/31/24 12:00	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-105508-5

Date Collected: 07/22/24 09:58

Matrix: Water

Date Received: 07/24/24 09:37

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/30/24 09:30	07/31/24 12:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	123		70 - 130			07/30/24 09:30	07/31/24 12:00	1
13C2 PFHxA	104		70 - 130			07/30/24 09:30	07/31/24 12:00	1
13C2 PFDA	108		70 - 130			07/30/24 09:30	07/31/24 12:00	1
13C3-GenX	98		70 - 130			07/30/24 09:30	07/31/24 12:00	1

Client Sample ID: FB: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-105508-6

Date Collected: 07/22/24 10:56

Matrix: Water

Date Received: 07/24/24 09:37

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-105508-6

Date Collected: 07/22/24 10:56

Matrix: Water

Date Received: 07/24/24 09:37

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:46	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C6 PFDA	110		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C5 PFHxA	104		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C4 PFHpA	106		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C8 PFOA	109		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C9 PFNA	104		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C7 PFUnA	114		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C2 PFDoA	120		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C4 PFBA	111		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C5 PFPeA	116		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C3 PFBS	97		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C3 PFHxS	107		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C8 PFOS	105		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C2-4:2-FTS	116		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C2-6:2-FTS	118		50 - 200			07/26/24 17:11	07/28/24 01:46	1
13C2-8:2-FTS	110		50 - 200			07/26/24 17:11	07/28/24 01:46	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		07/26/24 08:20	07/27/24 00:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:12	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-105508-6

Date Collected: 07/22/24 10:56

Matrix: Water

Date Received: 07/24/24 09:37

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130	07/26/24 08:20	07/27/24 00:12	1
13C2 PFHxA	105		70 - 130	07/26/24 08:20	07/27/24 00:12	1
13C2 PFDA	115		70 - 130	07/26/24 08:20	07/27/24 00:12	1
13C3-GenX	104		70 - 130	07/26/24 08:20	07/27/24 00:12	1

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

Lab Sample ID: 380-105508-7

Date Collected: 07/22/24 11:22

Matrix: Water

Date Received: 07/24/24 09:37

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		07/26/24 17:11	07/28/24 01:57	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 01:57	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C6 PFDA	110		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C5 PFHxA	103		50 - 200	07/26/24 17:11	07/28/24 01:57	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-7

Date Collected: 07/22/24 11:22

Matrix: Water

Date Received: 07/24/24 09:37

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	110		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C8 PFOA	110		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C9 PFNA	103		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C7 PFUnA	114		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C2 PFDoA	119		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C4 PFBA	111		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C5 PFPeA	116		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C3 PFBS	100		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C3 PFHxS	112		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C8 PFOS	108		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C2-4:2-FTS	118		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C2-6:2-FTS	124		50 - 200	07/26/24 17:11	07/28/24 01:57	1
13C2-8:2-FTS	116		50 - 200	07/26/24 17:11	07/28/24 01:57	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		07/26/24 08:20	07/27/24 00:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	113		70 - 130	07/26/24 08:20	07/27/24 00:22	1
13C2 PFHxA	107		70 - 130	07/26/24 08:20	07/27/24 00:22	1
13C2 PFDA	118		70 - 130	07/26/24 08:20	07/27/24 00:22	1
13C3-GenX	107		70 - 130	07/26/24 08:20	07/27/24 00:22	1

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-105508-8

Date Collected: 07/22/24 10:30

Matrix: Water

Date Received: 07/24/24 09:37

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/26/24 17:11	07/28/24 02:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C6 PFDA	107		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C5 PFHxA	97		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C4 PFHpA	104		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C8 PFOA	105		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C9 PFNA	101		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C7 PFUnA	110		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C2 PFDoA	115		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C4 PFBA	104		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C5 PFPeA	104		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C3 PFBS	96		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C3 PFHxS	103		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C8 PFOS	106		50 - 200	07/26/24 17:11	07/28/24 02:07	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-105508-8

Date Collected: 07/22/24 10:30

Matrix: Water

Date Received: 07/24/24 09:37

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	116		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C2-6:2-FTS	116		50 - 200	07/26/24 17:11	07/28/24 02:07	1
13C2-8:2-FTS	113		50 - 200	07/26/24 17:11	07/28/24 02:07	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		07/26/24 08:20	07/27/24 00:31	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/26/24 08:20	07/27/24 00:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	112		70 - 130	07/26/24 08:20	07/27/24 00:31	1
13C2 PFHxA	111		70 - 130	07/26/24 08:20	07/27/24 00:31	1
13C2 PFDA	121		70 - 130	07/26/24 08:20	07/27/24 00:31	1
13C3-GenX	106		70 - 130	07/26/24 08:20	07/27/24 00:31	1

Action Limit Summary

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-105508-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		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 GULCH WELLS PUMP 2

Lab Sample ID: 380-105508-2

(331-202-TP072)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	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 (260)

Lab Sample ID: 380-105508-3

(331-203-TP400)

PWSID Number: HI0000331

Compliance Check

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

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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105508-3

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			
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: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-105508-4

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)	2.4		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		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: MOANALUA WELLS

Lab Sample ID: 380-105508-5

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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: MOANALUA WELLS (Continued)

Lab Sample ID: 380-105508-5

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	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: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-105508-6

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
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: AIEA WELLS PUMPS 1&2 (260)

Lab Sample ID: 380-105508-7

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
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

Action Limit Summary

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

Job ID: 380-105508-1
 SDG: PFAS

Client Sample ID: FB: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-105508-8

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

Surrogate Summary

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

Job ID: 380-105508-1
SDG: PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-105508-1	MOANALUA WELLS (331-223-T	112	109	111	106
380-105508-1	MOANALUA WELLS (331-223-TP202)	111	102	107	98
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	114	105	111	107
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	116	111	113	104
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	113	109	112	108

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-105425-B-1-A MS	Matrix Spike	115	106	108	101
380-105425-C-1-A MSD	Matrix Spike Duplicate	114	109	115	102
380-105508-5	FB: MOANALUA WELLS	123	104	108	98
380-105508-6	FB: AIEA GULCH WELLS PUMP2	114	105	115	104
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	113	107	118	107
380-105508-8	FB: HALAWA WELLS UNITS 1&2	112	111	121	106
380-106072-AQ-1-A MS	Matrix Spike	117	108	109	102
380-106072-AR-1-A MSD	Matrix Spike Duplicate	114	109	111	101
LCS 380-100868/24-A	Lab Control Sample	119	116	124	114
LCS 380-101296/24-A	Lab Control Sample	116	110	113	104
MBL 380-100868/22-A	Method Blank	118	113	118	108
MBL 380-101296/22-A	Method Blank	122	117	117	112
MRL 380-100868/23-A	Lab Control Sample	118	113	124	109
MRL 380-101296/23-A	Lab Control Sample	117	108	109	105

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-105508-1
SDG: PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-105508-1	MOANALUA WELLS (331-223-T	84	104	91	95	98	97	106	112
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	76	100	83	90	93	90	102	106
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	78	83	84	84	82	76	90	101
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	78	96	86	86	90	88	101	106

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-105508-1	MOANALUA WELLS (331-223-T	100	104	97	109	108	129	129	116
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	92	94	100	108	106	117	124	110
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	101	97	96	110	109	122	118	107
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	95	97	95	108	107	124	124	107

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-105379-B-2-A MS	Matrix Spike	86	98	90	95	99	94	100	104
380-105379-C-2-A MSD	Matrix Spike Duplicate	87	96	89	97	97	94	98	104
380-105508-5	FB: MOANALUA WELLS	91	110	103	105	107	105	113	121
380-105508-6	FB: AIEA GULCH WELLS PUMP2	95	110	104	106	109	104	114	120
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	91	110	103	110	110	103	114	119
380-105508-8	FB: HALAWA WELLS UNITS 1&2	87	107	97	104	105	101	110	115
380-105635-B-1-A MS	Matrix Spike	89	104	91	95	100	96	108	111

Eurofins Eaton Analytical Pomona

Isotope Dilution Summary

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

Job ID: 380-105508-1
 SDG: PFAS

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-105635-C-1-A MSD	Matrix Spike Duplicate	89	105	93	97	100	99	111	116
LCS 380-100741/22-A	Lab Control Sample	91	109	94	101	104	100	112	118
LCS 380-100975/22-A	Lab Control Sample	92	106	99	104	107	102	112	119
MBL 380-100741/20-A	Method Blank	90	107	94	102	106	100	111	115
MBL 380-100975/20-A	Method Blank	88	107	98	104	108	100	110	118
MRL 380-100741/21-A	Lab Control Sample	87	106	91	99	103	99	109	115
MRL 380-100975/21-A	Lab Control Sample	89	108	99	107	106	102	110	118

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)
380-105379-B-2-A MS	Matrix Spike	103	151	89	101	101	145	141	121
380-105379-C-2-A MSD	Matrix Spike Duplicate	102	154	90	102	103	144	144	119
380-105508-5	FB: MOANALUA WELLS	111	116	99	109	109	118	125	116
380-105508-6	FB: AIEA GULCH WELLS PUMP2	111	116	97	107	105	116	118	110
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	111	116	100	112	108	118	124	116
380-105508-8	FB: HALAWA WELLS UNITS 1&2	104	104	96	103	106	116	116	113
380-105635-B-1-A MS	Matrix Spike	101	110	91	103	103	117	121	118
380-105635-C-1-A MSD	Matrix Spike Duplicate	104	113	96	106	105	118	121	119
LCS 380-100741/22-A	Lab Control Sample	105	105	95	106	103	105	115	106
LCS 380-100975/22-A	Lab Control Sample	108	108	98	109	108	116	124	110
MBL 380-100741/20-A	Method Blank	109	112	99	112	107	123	129	108
MBL 380-100975/20-A	Method Blank	107	104	93	107	105	117	119	114
MRL 380-100741/21-A	Lab Control Sample	104	105	96	108	108	114	119	112
MRL 380-100975/21-A	Lab Control Sample	114	108	95	109	105	113	121	109

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MBL 380-100741/20-A
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100741

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		07/25/24 14:42	07/26/24 16:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/25/24 14:42	07/26/24 16:17	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C6 PFDA	107		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C5 PFHxA	94		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C4 PFHpA	102		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C8 PFOA	106		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C9 PFNA	100		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C7 PFUnA	111		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C2 PFDoA	115		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C4 PFBA	109		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C5 PFPeA	112		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C3 PFBS	99		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C3 PFHxS	112		50 - 200	07/25/24 14:42	07/26/24 16:17	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MBL 380-100741/20-A
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100741

<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	107		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C2-4:2-FTS	123		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C2-6:2-FTS	129		50 - 200	07/25/24 14:42	07/26/24 16:17	1
13C2-8:2-FTS	108		50 - 200	07/25/24 14:42	07/26/24 16:17	1

Lab Sample ID: LCS 380-100741/22-A
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100741

<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)	120	132		ng/L		110	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	124		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	114		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	118		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	128		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	120	119		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	120	122		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	116		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	120		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	120	125		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	120	123		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	126		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	120	118		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	125		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	122		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	126		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	119		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	123		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	121		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	117		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	112		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	120	118		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	123		ng/L		103	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: LCS 380-100741/22-A
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100741

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	112		ng/L		93	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	91		50 - 200				
13C6 PFDA	109		50 - 200				
13C5 PFHxA	94		50 - 200				
13C4 PFHpA	101		50 - 200				
13C8 PFOA	104		50 - 200				
13C9 PFNA	100		50 - 200				
13C7 PFUnA	112		50 - 200				
13C2 PFDoA	118		50 - 200				
13C4 PFBA	105		50 - 200				
13C5 PFPeA	105		50 - 200				
13C3 PFBS	95		50 - 200				
13C3 PFHxS	106		50 - 200				
13C8 PFOS	103		50 - 200				
13C2-4:2-FTS	105		50 - 200				
13C2-6:2-FTS	115		50 - 200				
13C2-8:2-FTS	106		50 - 200				

Lab Sample ID: MRL 380-100741/21-A
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100741

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.22	J	ng/L		111	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.01	2.17	J	ng/L		108	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.06	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.28	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.27	J	ng/L		113	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.12	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.28	J	ng/L		113	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.26	J	ng/L		113	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.22	J	ng/L		111	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.06	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MRL 380-100741/21-A
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100741

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.32	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.19	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.40	J	ng/L		120	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.18	J	ng/L		108	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.94	J	ng/L		97	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	91		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	109		50 - 200
13C2 PFDoA	115		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	114		50 - 200
13C2-6:2-FTS	119		50 - 200
13C2-8:2-FTS	112		50 - 200

Lab Sample ID: 380-105379-B-2-A MS
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100741

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	67.1		ng/L		111	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	62.7		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	57.2		ng/L		95	70 - 130

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105379-B-2-A MS
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100741

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	60.7		ng/L		101	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	65.3		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	62.4		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	63.9		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	60.0		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	60.8		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	64.4		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	65.1		ng/L		108	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	66.7		ng/L		110	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	61.0		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	63.8		ng/L		106	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	63.3		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	63.4		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	64.9		ng/L		108	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	65.1		ng/L		108	70 - 130
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	<2.0		60.2	63.0		ng/L		105	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	62.2		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	75.3		ng/L		125	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	59.9		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	61.5		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	64.6		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	58.4		ng/L		97	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	86		50 - 200
13C6 PFDA	98		50 - 200
13C5 PFHxA	90		50 - 200
13C4 PFHpA	95		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	151		50 - 200
13C3 PFBS	89		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	101		50 - 200

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105379-B-2-A MS
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100741

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	145		50 - 200
13C2-6:2-FTS	141		50 - 200
13C2-8:2-FTS	121		50 - 200

Lab Sample ID: 380-105379-C-2-A MSD
Matrix: Water
Analysis Batch: 100886

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 100741

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	63.6		ng/L		106	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	60.6		ng/L		101	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	56.4		ng/L		94	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	58.4		ng/L		97	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	63.8		ng/L		106	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	61.9		ng/L		103	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	63.0		ng/L		104	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	60.0		ng/L		100	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	60.4		ng/L		100	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	63.7		ng/L		105	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	63.7		ng/L		106	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	63.8		ng/L		105	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	61.3		ng/L		101	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	64.7		ng/L		107	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	61.9		ng/L		103	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	65.4		ng/L		109	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.6		ng/L		104	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	61.5		ng/L		102	70 - 130	6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	64.6		ng/L		107	70 - 130	2	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	61.0		ng/L		101	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	75.4		ng/L		125	70 - 130	0	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	57.8		ng/L		96	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	60.6		ng/L		99	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	60.4		ng/L		100	70 - 130	7	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	58.8		ng/L		98	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	96		50 - 200
13C5 PFHxA	89		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	154		50 - 200
13C3 PFBS	90		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	144		50 - 200
13C2-6:2-FTS	144		50 - 200
13C2-8:2-FTS	119		50 - 200

Lab Sample ID: MBL 380-100975/20-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100975

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MBL 380-100975/20-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100975

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/26/24 17:11	07/27/24 22:54	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C6 PFDA	107		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C5 PFHxA	98		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C4 PFHpA	104		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C8 PFOA	108		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C9 PFNA	100		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C7 PFUnA	110		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C2 PFDoA	118		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C4 PFBA	107		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C5 PFPeA	104		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C3 PFBS	93		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C3 PFHxS	107		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C8 PFOS	105		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C2-4:2-FTS	117		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C2-6:2-FTS	119		50 - 200	07/26/24 17:11	07/27/24 22:54	1
13C2-8:2-FTS	114		50 - 200	07/26/24 17:11	07/27/24 22:54	1

Lab Sample ID: LCS 380-100975/22-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	65.2		ng/L		109	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	61.3		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	57.6		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	59.8		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.0	64.1		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	60.0	61.5		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	60.0	62.1		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.0	59.8		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.0	59.9		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	60.0	60.8		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	60.0	62.2		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.0	64.6		ng/L		108	70 - 130
Perfluorooctanoic acid (PFOA)	60.0	59.8		ng/L		100	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: LCS 380-100975/22-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.0	63.6		ng/L		106	70 - 130
Perfluorobutanoic acid (PFBA)	60.0	60.2		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	65.9		ng/L		110	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	62.0		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	61.3		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	61.9		ng/L		103	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.0	61.6		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	61.3		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	57.7		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	60.0	59.0		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.0	63.2		ng/L		105	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.0	57.2		ng/L		95	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	119		50 - 200
13C4 PFBA	108		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	109		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	124		50 - 200
13C2-8:2-FTS	110		50 - 200

Lab Sample ID: MRL 380-100975/21-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.29	J	ng/L		114	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	2.15	J	ng/L		107	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MRL 380-100975/21-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.07	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.25	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.43	J	ng/L		121	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.27	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.34	J	ng/L		117	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.21	J	ng/L		110	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.05	J	ng/L		102	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	110		50 - 200
13C2 PFDoA	118		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	109		50 - 200

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MRL 380-100975/21-A
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100975

<i>Isotope Dilution</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	113		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	109		50 - 200

Lab Sample ID: 380-105635-B-1-A MS
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	132		ng/L		109	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	124		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	113		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	115		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	130		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	125		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	117		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	120		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	124		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.3		121	133		ng/L		108	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	119		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	125		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	119		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	121		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	117		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	128		ng/L		106	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	125		ng/L		104	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	114		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	115		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	124		ng/L		103	70 - 130

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105635-B-1-A MS
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	115		ng/L		95	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	89		50 - 200						
13C6 PFDA	104		50 - 200						
13C5 PFHxA	91		50 - 200						
13C4 PFHpA	95		50 - 200						
13C8 PFOA	100		50 - 200						
13C9 PFNA	96		50 - 200						
13C7 PFUnA	108		50 - 200						
13C2 PFDoA	111		50 - 200						
13C4 PFBA	101		50 - 200						
13C5 PFPeA	110		50 - 200						
13C3 PFBS	91		50 - 200						
13C3 PFHxS	103		50 - 200						
13C8 PFOS	103		50 - 200						
13C2-4:2-FTS	117		50 - 200						
13C2-6:2-FTS	121		50 - 200						
13C2-8:2-FTS	118		50 - 200						

Lab Sample ID: 380-105635-C-1-A MSD
Matrix: Water
Analysis Batch: 101060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 100975

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	129		ng/L		106	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	120		ng/L		99	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	114		ng/L		94	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	117		ng/L		97	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	128		ng/L		105	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		121	119		ng/L		99	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	122		ng/L		101	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	116		ng/L		96	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	118		ng/L		97	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	120		ng/L		99	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		121	121		ng/L		100	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	3.3		121	127		ng/L		103	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		121	118		ng/L		97	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	125		ng/L		103	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	<2.0		121	122		ng/L		101	70 - 130	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105635-C-1-A MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 101060

Prep Batch: 100975

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	121		ng/L		100	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	110		ng/L		91	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	117		ng/L		97	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	122		ng/L		101	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	118		ng/L		98	70 - 130	8	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	121		ng/L		100	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	115		ng/L		95	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	115		ng/L		95	70 - 130	0	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	120		ng/L		100	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	113		ng/L		93	70 - 130	1	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	111		50 - 200
13C2 PFDoA	116		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	119		50 - 200

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

Lab Sample ID: MBL 380-100868/22-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 100957

Prep Batch: 100868

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MBL 380-100868/22-A
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100868

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/26/24 08:20	07/26/24 20:34	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	118		70 - 130	07/26/24 08:20	07/26/24 20:34	1
13C2 PFHxA	113		70 - 130	07/26/24 08:20	07/26/24 20:34	1
13C2 PFDA	118		70 - 130	07/26/24 08:20	07/26/24 20:34	1
13C3-GenX	108		70 - 130	07/26/24 08:20	07/26/24 20:34	1

Lab Sample ID: LCS 380-100868/24-A
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100868

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	28.3		ng/L		113	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	29.7		ng/L		119	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	29.3		ng/L		117	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	27.7		ng/L		111	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	28.6		ng/L		114	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	28.7		ng/L		115	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	29.4		ng/L		118	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	29.9		ng/L		120	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	29.9		ng/L		120	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	28.2		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	26.8		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	30.4		ng/L		122	70 - 130
Perfluorononanoic acid (PFNA)	25.0	30.7		ng/L		123	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: LCS 380-100868/24-A
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100868

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	25.0	28.4		ng/L		114	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	29.7		ng/L		119	70 - 130
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	25.0	27.4		ng/L		110	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	28.6		ng/L		114	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	29.5		ng/L		118	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	119		70 - 130				
13C2 PFHxA	116		70 - 130				
13C2 PFDA	124		70 - 130				
13C3-GenX	114		70 - 130				

Lab Sample ID: MRL 380-100868/23-A
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100868

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.33	J	ng/L		116	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.61	J	ng/L		131	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.38	J	ng/L		119	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.41	J	ng/L		121	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.47	J	ng/L		124	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.49	J	ng/L		125	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.49	J	ng/L		125	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.11	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.58	J	ng/L		129	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.61	J	ng/L		131	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.58	J	ng/L		129	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.46	J	ng/L		123	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.38	J	ng/L		119	50 - 150

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MRL 380-100868/23-A
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100868

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.27	J	ng/L		114	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.48	J	ng/L		124	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
d5-NEtFOSAA	118		70 - 130				
13C2 PFHxA	113		70 - 130				
13C2 PFDA	124		70 - 130				
13C3-GenX	109		70 - 130				

Lab Sample ID: 380-105425-B-1-A MS
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100868

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	24.9		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	27.6		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.2		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	27.2		ng/L		108	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.3		ng/L		109	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	25.3		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.3		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.4		ng/L		113	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.5		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	27.7		ng/L		111	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	25.6		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.0		25.1	27.7		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.5		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	26.4		ng/L		105	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	27.1		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	27.1		ng/L		108	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	26.9		ng/L		107	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	25.8		ng/L		103	70 - 130

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-105425-B-1-A MS
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 100868

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	115		70 - 130
13C2 PFHxA	106		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	101		70 - 130

Lab Sample ID: 380-105425-C-1-A MSD
Matrix: Water
Analysis Batch: 100957

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 100868

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec		RPD	RPD Limit
				Result	Qualifier				Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	26.5		ng/L		105	70 - 130	6	30	
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.7		ng/L		106	70 - 130	3	30	
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	27.4		ng/L		109	70 - 130	1	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	28.1		ng/L		112	70 - 130	3	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	27.5		ng/L		109	70 - 130	1	30	
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	26.7		ng/L		106	70 - 130	5	30	
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	27.9		ng/L		111	70 - 130	6	30	
Perfluorooctanoic acid (PFOA)	<2.0		25.2	28.7		ng/L		114	70 - 130	1	30	
Perfluorodecanoic acid (PFDA)	<2.0		25.2	28.6		ng/L		114	70 - 130	4	30	
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	28.1		ng/L		112	70 - 130	1	30	
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	23.7		ng/L		94	70 - 130	8	30	
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	30.5		ng/L		121	70 - 130	10	30	
Perfluorononanoic acid (PFNA)	<2.0		25.2	28.7		ng/L		114	70 - 130	8	30	
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	27.1		ng/L		108	70 - 130	3	30	
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	28.5		ng/L		113	70 - 130	5	30	
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	27.8		ng/L		110	70 - 130	2	30	
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	26.1		ng/L		104	70 - 130	3	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	27.4		ng/L		109	70 - 130	6	30	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	114		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	115		70 - 130
13C3-GenX	102		70 - 130

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MBL 380-101296/22-A
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101296

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/30/24 09:30	07/31/24 10:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	122		70 - 130			07/30/24 09:30	07/31/24 10:56	1
13C2 PFHxA	117		70 - 130			07/30/24 09:30	07/31/24 10:56	1
13C2 PFDA	117		70 - 130			07/30/24 09:30	07/31/24 10:56	1
13C3-GenX	112		70 - 130			07/30/24 09:30	07/31/24 10:56	1

Lab Sample ID: LCS 380-101296/24-A
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101296

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.0	24.2		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.0	26.8		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	27.0		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	26.6		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	27.7		ng/L		111	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	25.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	26.6		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	26.2		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	26.2		ng/L		105	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: LCS 380-101296/24-A
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101296

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	25.0	27.2		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	24.1		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	27.0		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	25.0	26.9		ng/L		108	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.0	28.2		ng/L		113	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.0	26.9		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.0	24.8		ng/L		99	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	25.5		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	24.4		ng/L		97	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	116		70 - 130				
13C2 PFHxA	110		70 - 130				
13C2 PFDA	113		70 - 130				
13C3-GenX	104		70 - 130				

Lab Sample ID: MRL 380-101296/23-A
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101296

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.30	J	ng/L		115	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.46	J	ng/L		123	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.35	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.45	J	ng/L		122	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.56	J	ng/L		128	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: MRL 380-101296/23-A
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101296

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits	
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.32	J	ng/L		116	50 - 150	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.09	J	ng/L		104	50 - 150	
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.09	J	ng/L		104	50 - 150	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.17	J	ng/L		108	50 - 150	
Surrogate								
	%Recovery	MRL	MRL Qualifier					Limits
d5-NEtFOSAA	117							70 - 130
13C2 PFHxA	108							70 - 130
13C2 PFDA	109							70 - 130
13C3-GenX	105							70 - 130

Lab Sample ID: 380-106072-AQ-1-A MS
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 101296

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	23.4		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	27.0		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.7		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	28.1		ng/L		112	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	27.9		ng/L		111	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	25.6		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	27.2		ng/L		108	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.2		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	26.3		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	27.4		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	22.2		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	27.3		ng/L		109	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.9		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	29.2		ng/L		117	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	27.4		ng/L		109	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	24.7		ng/L		98	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	25.4		ng/L		101	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-106072-AQ-1-A MS

Matrix: Water

Analysis Batch: 101541

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 101296

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	24.6		ng/L		98	70 - 130
Surrogate									
	%Recovery	MS MS Qualifier	Limits						
d5-NEtFOSAA	117		70 - 130						
13C2 PFHxA	108		70 - 130						
13C2 PFDA	109		70 - 130						
13C3-GenX	102		70 - 130						

Lab Sample ID: 380-106072-AR-1-A MSD

Matrix: Water

Analysis Batch: 101541

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 101296

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.0	24.4		ng/L		98	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.0	27.0		ng/L		108	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.0	27.1		ng/L		109	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.0	27.3		ng/L		109	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.0	27.6		ng/L		111	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.0	25.7		ng/L		103	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.0	26.6		ng/L		107	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		25.0	26.8		ng/L		107	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		25.0	26.4		ng/L		106	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.0	28.1		ng/L		112	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.0	22.6		ng/L		90	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.0	27.4		ng/L		110	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		25.0	28.3		ng/L		113	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.0	29.3		ng/L		117	70 - 130	0	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.0	27.2		ng/L		109	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.0	25.5		ng/L		102	70 - 130	3	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.0	25.4		ng/L		101	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.0	25.1		ng/L		100	70 - 130	2	30
Surrogate											
	%Recovery	MSD MSD Qualifier	Limits								
d5-NEtFOSAA	114		70 - 130								
13C2 PFHxA	109		70 - 130								
13C2 PFDA	111		70 - 130								

QC Sample Results

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

Job ID: 380-105508-1
SDG: PFAS

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

Lab Sample ID: 380-106072-AR-1-A MSD
Matrix: Water
Analysis Batch: 101541

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 101296

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C3-GenX	101		70 - 130

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

QC Association Summary

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

Job ID: 380-105508-1
SDG: PFAS

LCMS

Prep Batch: 100741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	533	
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
MBL 380-100741/20-A	Method Blank	Total/NA	Water	533	
LCS 380-100741/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-100741/21-A	Lab Control Sample	Total/NA	Water	533	
380-105379-B-2-A MS	Matrix Spike	Total/NA	Water	533	
380-105379-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 100868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-105508-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	537.1 DW	
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-105508-6	FB: AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1 DW	
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1 DW	
380-105508-8	FB: HALAWA WELLS UNITS 1&2	Total/NA	Water	537.1 DW	
MBL 380-100868/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-100868/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-100868/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-105425-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-105425-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 100886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	100741
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	100741
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	533	100741
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	100741
MBL 380-100741/20-A	Method Blank	Total/NA	Water	533	100741
LCS 380-100741/22-A	Lab Control Sample	Total/NA	Water	533	100741
MRL 380-100741/21-A	Lab Control Sample	Total/NA	Water	533	100741
380-105379-B-2-A MS	Matrix Spike	Total/NA	Water	533	100741
380-105379-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	100741

Analysis Batch: 100957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	100868
380-105508-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	100868
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	100868
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Total/NA	Drinking Water	537.1	100868
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	100868
380-105508-6	FB: AIEA GULCH WELLS PUMP2	Total/NA	Water	537.1	100868
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	537.1	100868
380-105508-8	FB: HALAWA WELLS UNITS 1&2	Total/NA	Water	537.1	100868
MBL 380-100868/22-A	Method Blank	Total/NA	Water	537.1	100868
LCS 380-100868/24-A	Lab Control Sample	Total/NA	Water	537.1	100868
MRL 380-100868/23-A	Lab Control Sample	Total/NA	Water	537.1	100868

QC Association Summary

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

Job ID: 380-105508-1
SDG: PFAS

LCMS (Continued)

Analysis Batch: 100957 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105425-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	100868
380-105425-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	100868

Prep Batch: 100975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-5	FB: MOANALUA WELLS	Total/NA	Water	533	
380-105508-6	FB: AIEA GULCH WELLS PUMP2	Total/NA	Water	533	
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	
380-105508-8	FB: HALAWA WELLS UNITS 1&2	Total/NA	Water	533	
MBL 380-100975/20-A	Method Blank	Total/NA	Water	533	
LCS 380-100975/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-100975/21-A	Lab Control Sample	Total/NA	Water	533	
380-105635-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-105635-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 101060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-5	FB: MOANALUA WELLS	Total/NA	Water	533	100975
380-105508-6	FB: AIEA GULCH WELLS PUMP2	Total/NA	Water	533	100975
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	533	100975
380-105508-8	FB: HALAWA WELLS UNITS 1&2	Total/NA	Water	533	100975
MBL 380-100975/20-A	Method Blank	Total/NA	Water	533	100975
LCS 380-100975/22-A	Lab Control Sample	Total/NA	Water	533	100975
MRL 380-100975/21-A	Lab Control Sample	Total/NA	Water	533	100975
380-105635-B-1-A MS	Matrix Spike	Total/NA	Water	533	100975
380-105635-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	100975

Prep Batch: 101296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-5	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
MBL 380-101296/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-101296/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-101296/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-106072-AQ-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-106072-AR-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 101541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-105508-5	FB: MOANALUA WELLS	Total/NA	Water	537.1	101296
MBL 380-101296/22-A	Method Blank	Total/NA	Water	537.1	101296
LCS 380-101296/24-A	Lab Control Sample	Total/NA	Water	537.1	101296
MRL 380-101296/23-A	Lab Control Sample	Total/NA	Water	537.1	101296
380-106072-AQ-1-A MS	Matrix Spike	Total/NA	Water	537.1	101296
380-106072-AR-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	101296

Lab Chronicle

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-105508-1

Date Collected: 07/22/24 09:58

Matrix: Drinking Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100741	N8NE	EA POM	07/25/24 14:42
Total/NA	Analysis	533		1	100886	Y5FM	EA POM	07/26/24 19:42
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/26/24 23:24
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/27/24 00:02

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

Lab Sample ID: 380-105508-2

Date Collected: 07/22/24 10:56

Matrix: Drinking Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100741	N8NE	EA POM	07/25/24 14:42
Total/NA	Analysis	533		1	100886	Y5FM	EA POM	07/26/24 19:53
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/26/24 23:33

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

Lab Sample ID: 380-105508-3

Date Collected: 07/22/24 11:22

Matrix: Drinking Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100741	N8NE	EA POM	07/25/24 14:42
Total/NA	Analysis	533		1	100886	Y5FM	EA POM	07/26/24 20:04
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/26/24 23:43

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

Lab Sample ID: 380-105508-4

Date Collected: 07/22/24 10:30

Matrix: Drinking Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100741	N8NE	EA POM	07/25/24 14:42
Total/NA	Analysis	533		1	100886	Y5FM	EA POM	07/26/24 20:14
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/26/24 23:53

Lab Chronicle

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

Job ID: 380-105508-1
SDG: PFAS

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-105508-5

Date Collected: 07/22/24 09:58

Matrix: Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100975	N8NE	EA POM	07/26/24 17:11
Total/NA	Analysis	533		1	101060	Y7BM	EA POM	07/28/24 01:25
Total/NA	Prep	537.1 DW			101296	A5GB	EA POM	07/30/24 09:30
Total/NA	Analysis	537.1		1	101541	Y5FM	EA POM	07/31/24 12:00

Client Sample ID: FB: AIEA GULCH WELLS PUMP2

Lab Sample ID: 380-105508-6

Date Collected: 07/22/24 10:56

Matrix: Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100975	N8NE	EA POM	07/26/24 17:11
Total/NA	Analysis	533		1	101060	Y7BM	EA POM	07/28/24 01:46
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/27/24 00:12

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

Lab Sample ID: 380-105508-7

Date Collected: 07/22/24 11:22

Matrix: Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100975	N8NE	EA POM	07/26/24 17:11
Total/NA	Analysis	533		1	101060	Y7BM	EA POM	07/28/24 01:57
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/27/24 00:22

Client Sample ID: FB: HALAWA WELLS UNITS 1&2

Lab Sample ID: 380-105508-8

Date Collected: 07/22/24 10:30

Matrix: Water

Date Received: 07/24/24 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			100975	N8NE	EA POM	07/26/24 17:11
Total/NA	Analysis	533		1	101060	Y7BM	EA POM	07/28/24 02:07
Total/NA	Prep	537.1 DW			100868	A5GB	EA POM	07/26/24 08:20
Total/NA	Analysis	537.1		1	100957	R6YA	EA POM	07/27/24 00:31

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: 380-105508-1
SDG: 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: 380-105508-1
SDG: 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: 380-105508-1
 SDG: PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-105508-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	07/22/24 09:58	07/24/24 09:37	HI0000331
380-105508-2	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	07/22/24 10:56	07/24/24 09:37	HI0000331
380-105508-3	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	07/22/24 11:22	07/24/24 09:37	HI0000331
380-105508-4	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	07/22/24 10:30	07/24/24 09:37	HI0000331
380-105508-5	FB: MOANALUA WELLS	Water	07/22/24 09:58	07/24/24 09:37	
380-105508-6	FB: AIEA GULCH WELLS PUMP2	Water	07/22/24 10:56	07/24/24 09:37	
380-105508-7	FB: AIEA WELLS PUMPS 1&2 (260)	Water	07/22/24 11:22	07/24/24 09:37	
380-105508-8	FB: HALAWA WELLS UNITS 1&2	Water	07/22/24 10:30	07/24/24 09:37	

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

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-105508-1

SDG Number: PFAS

Login Number: 105508

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Gerfen, Chris

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

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