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ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-110626-1

Eurofins Eaton Analytical Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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: 380-110626-1

Job ID: 380-110626-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-110626-1

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 8/28/2024 9:54 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 3.0°C.

PFAS

Method 537.1_DW_PREC: Sample 380-110626-A-2-A was ND for all analytes, while sample 380-110626-A-6-A FRB has detection of analytes above 1/3 MRL. The containers for both samples were labeled properly and the samples were rerun for confirmation. FRB data excluded since analysis of the FRB is required only if a field sample contains a method analyte or analytes at, or above, the MRL.

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: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-2

No Detections.

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

Lab Sample ID: 380-110626-3

No Detections.

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-110626-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.3		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.9		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L	1		537.1	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-5

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-6

No Detections.

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

Lab Sample ID: 380-110626-7

No Detections.

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-110626-8

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-1

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C6 PFDA	95		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C5 PFHxA	90		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C4 PFHpA	97		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C8 PFOA	94		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C9 PFNA	93		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C7 PFUnA	99		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C2 PFDoA	94		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C4 PFBA	95		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C5 PFPeA	105		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C3 PFBS	107		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C3 PFHxS	105		50 - 200	09/06/24 15:32	09/07/24 22:39	1

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Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-1

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	108		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C2-4:2-FTS	130		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C2-6:2-FTS	140		50 - 200	09/06/24 15:32	09/07/24 22:39	1
13C2-8:2-FTS	121		50 - 200	09/06/24 15:32	09/07/24 22:39	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		08/29/24 13:00	08/30/24 10:21	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:21	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	117		70 - 130	08/29/24 13:00	08/30/24 10:21	1		
13C2 PFHxA	112		70 - 130	08/29/24 13:00	08/30/24 10:21	1		
13C2 PFDA	115		70 - 130	08/29/24 13:00	08/30/24 10:21	1		
13C3-GenX	113		70 - 130	08/29/24 13:00	08/30/24 10:21	1		

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-2

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

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		09/06/24 15:32	09/07/24 22:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1

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Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-2

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 22:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C6 PFDA	93		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C5 PFHxA	93		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C4 PFHpA	101		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C8 PFOA	99		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C9 PFNA	99		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C7 PFUnA	91		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C2 PFDoA	77		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C4 PFBA	93		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C5 PFPeA	101		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C3 PFBS	106		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C3 PFHxS	104		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C8 PFOS	106		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C2-4:2-FTS	124		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C2-6:2-FTS	128		50 - 200	09/06/24 15:32	09/07/24 22:58	1
13C2-8:2-FTS	109		50 - 200	09/06/24 15:32	09/07/24 22:58	1

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-2

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

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		08/29/24 13:00	08/30/24 10:30	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	122		70 - 130			08/29/24 13:00	08/30/24 10:30	1
13C2 PFHxA	114		70 - 130			08/29/24 13:00	08/30/24 10:30	1
13C2 PFDA	110		70 - 130			08/29/24 13:00	08/30/24 10:30	1
13C3-GenX	113		70 - 130			08/29/24 13:00	08/30/24 10:30	1

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

Lab Sample ID: 380-110626-3

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110626-3

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	72		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C6 PFDA	73		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C5 PFHxA	76		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C4 PFHpA	77		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C8 PFOA	78		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C9 PFNA	78		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C7 PFUnA	69		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C2 PFDoA	63		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C4 PFBA	82		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C5 PFPeA	85		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C3 PFBS	102		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C3 PFHxS	100		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C8 PFOS	98		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C2-4:2-FTS	121		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C2-6:2-FTS	128		50 - 200	09/06/24 15:32	09/07/24 23:07	1
13C2-8:2-FTS	101		50 - 200	09/06/24 15:32	09/07/24 23:07	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		08/29/24 13:00	08/30/24 10:40	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110626-3

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	119		70 - 130			08/29/24 13:00	08/30/24 10:40	1
13C2 PFHxA	115		70 - 130			08/29/24 13:00	08/30/24 10:40	1
13C2 PFDA	112		70 - 130			08/29/24 13:00	08/30/24 10:40	1
13C3-GenX	109		70 - 130			08/29/24 13:00	08/30/24 10:40	1

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-110626-4

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorooctanesulfonic acid (PFOS)	2.5		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorooctanoic acid (PFOA)	2.3		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-110626-4

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoropentanoic acid (PFPeA)	2.1		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/06/24 15:32	09/07/24 23:17	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C6 PFDA	95		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C5 PFHxA	91		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C4 PFHpA	95		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C8 PFOA	96		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C9 PFNA	98		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C7 PFUnA	98		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C2 PFDoA	94		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C4 PFBA	98		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C5 PFPeA	108		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C3 PFBS	99		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C3 PFHxS	103		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C8 PFOS	105		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C2-4:2-FTS	125		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C2-6:2-FTS	124		50 - 200			09/06/24 15:32	09/07/24 23:17	1
13C2-8:2-FTS	112		50 - 200			09/06/24 15:32	09/07/24 23:17	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		08/29/24 13:00	08/30/24 10:49	1
Perfluorooctanesulfonic acid (PFOS)	2.9		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorooctanoic acid (PFOA)	2.3		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorobutanesulfonic acid (PFBS)	2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-110626-4

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

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		08/29/24 13:00	08/30/24 10:49	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	121		70 - 130			08/29/24 13:00	08/30/24 10:49	1
13C2 PFHxA	116		70 - 130			08/29/24 13:00	08/30/24 10:49	1
13C2 PFDA	112		70 - 130			08/29/24 13:00	08/30/24 10:49	1
13C3-GenX	117		70 - 130			08/29/24 13:00	08/30/24 10:49	1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-5

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

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		08/30/24 16:41	09/02/24 12:58	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-5

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

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		08/30/24 16:41	09/02/24 12:58	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 12:58	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C6 PFDA	100		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C5 PFHxA	107		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C4 PFHpA	111		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C8 PFOA	103		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C9 PFNA	105		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C7 PFUnA	101		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C2 PFDoA	104		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C4 PFBA	103		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C5 PFPeA	101		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C3 PFBS	112		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C3 PFHxS	113		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C8 PFOS	106		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C2-4:2-FTS	127		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C2-6:2-FTS	115		50 - 200			08/30/24 16:41	09/02/24 12:58	1
13C2-8:2-FTS	104		50 - 200			08/30/24 16:41	09/02/24 12:58	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		08/29/24 13:00	08/30/24 10:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 10:59	1

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-5

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	115		70 - 130	08/29/24 13:00	08/30/24 10:59	1
13C2 PFHxA	116		70 - 130	08/29/24 13:00	08/30/24 10:59	1
13C2 PFDA	114		70 - 130	08/29/24 13:00	08/30/24 10:59	1
13C3-GenX	113		70 - 130	08/29/24 13:00	08/30/24 10:59	1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-6

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

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		08/30/24 16:41	09/02/24 13:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/30/24 16:41	09/02/24 13:08	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	90		50 - 200	08/30/24 16:41	09/02/24 13:08	1		
13C6 PFDA	101		50 - 200	08/30/24 16:41	09/02/24 13:08	1		
13C5 PFHxA	102		50 - 200	08/30/24 16:41	09/02/24 13:08	1		

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-6

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	106		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C8 PFOA	103		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C9 PFNA	105		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C7 PFUnA	100		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C2 PFDoA	103		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C4 PFBA	105		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C5 PFPeA	102		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C3 PFBS	116		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C3 PFHxS	114		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C8 PFOS	107		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C2-4:2-FTS	125		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C2-6:2-FTS	116		50 - 200	08/30/24 16:41	09/02/24 13:08	1
13C2-8:2-FTS	101		50 - 200	08/30/24 16:41	09/02/24 13:08	1

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

Lab Sample ID: 380-110626-7

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110626-7

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:33	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C6 PFDA	111		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C5 PFHxA	104		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C4 PFHpA	111		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C8 PFOA	107		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C9 PFNA	117		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C7 PFUnA	110		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C2 PFDoA	112		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C4 PFBA	109		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C5 PFPeA	101		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C3 PFBS	113		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C3 PFHxS	113		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C8 PFOS	108		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C2-4:2-FTS	121		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C2-6:2-FTS	114		50 - 200	08/30/24 16:25	09/02/24 07:33	1
13C2-8:2-FTS	106		50 - 200	08/30/24 16:25	09/02/24 07:33	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		08/29/24 13:00	08/30/24 11:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	118		70 - 130	08/29/24 13:00	08/30/24 11:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110626-7

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	115		70 - 130	08/29/24 13:00	08/30/24 11:18	1
13C2 PFDA	113		70 - 130	08/29/24 13:00	08/30/24 11:18	1
13C3-GenX	101		70 - 130	08/29/24 13:00	08/30/24 11:18	1

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-110626-8

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

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		08/30/24 16:25	09/02/24 07:42	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/30/24 16:25	09/02/24 07:42	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	83		50 - 200	08/30/24 16:25	09/02/24 07:42	1		
13C6 PFDA	102		50 - 200	08/30/24 16:25	09/02/24 07:42	1		
13C5 PFHxA	100		50 - 200	08/30/24 16:25	09/02/24 07:42	1		

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-110626-8

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	108		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C8 PFOA	106		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C9 PFNA	111		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C7 PFUnA	102		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C2 PFDoA	108		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C4 PFBA	108		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C5 PFPeA	110		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C3 PFBS	110		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C3 PFHxS	112		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C8 PFOS	107		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C2-4:2-FTS	132		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C2-6:2-FTS	120		50 - 200	08/30/24 16:25	09/02/24 07:42	1
13C2-8:2-FTS	102		50 - 200	08/30/24 16:25	09/02/24 07:42	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		08/29/24 13:00	08/30/24 11:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/29/24 13:00	08/30/24 11:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	118		70 - 130	08/29/24 13:00	08/30/24 11:28	1
13C2 PFHxA	115		70 - 130	08/29/24 13:00	08/30/24 11:28	1
13C2 PFDA	111		70 - 130	08/29/24 13:00	08/30/24 11:28	1
13C3-GenX	113		70 - 130	08/29/24 13:00	08/30/24 11:28	1

Action Limit Summary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		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)	2.4		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.6		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-2

Compliance Check

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

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

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

Lab Sample ID: 380-110626-3

Compliance Check

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

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

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110626-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-110626-4

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)	2.5		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.5		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.3		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)	2.9		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.3		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-5

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
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: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-6

Compliance Check

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

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

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

Lab Sample ID: 380-110626-7

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

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-110626-8

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
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: 380-110626-1
 SDG: Weekly PFAS

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)
380-110626-1	HALAWA WELLS UNITS 1 & 2 F	117	112	115	113
380-110626-2	AIEA GULCH WELLS PUMP 2	122	114	110	113
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	119	115	112	109
380-110626-4	KA'AMILO WELLS	121	116	112	117
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	115	116	114	113
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	118	115	113	101
380-110626-8	FB KA'AMILO WELLS	118	115	111	113
380-110655-B-1-A MS	Matrix Spike	107	116	113	113
380-110655-C-1-A MSD	Matrix Spike Duplicate	115	116	116	113
LCS 380-106058/22-A	Lab Control Sample	111	114	111	110
MBL 380-106058/20-A	Method Blank	123	124	127	107
MRL 380-106058/21-A	Lab Control Sample	119	114	117	98

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: 380-110626-1
SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-110626-1	HALAWA WELLS UNITS 1 & 2 F	94	95	90	97	94	93	99	94
380-110626-2	AIEA GULCH WELLS PUMP 2	94	93	93	101	99	99	91	77
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	72	73	76	77	78	78	69	63
380-110626-4	KA'AMILO WELLS	86	95	91	95	96	98	98	94
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	89	100	107	111	103	105	101	104
380-110626-6	FB AIEA GULCH WELLS PUMP 2	90	101	102	106	103	105	100	103
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	99	111	104	111	107	117	110	112
380-110626-8	FB KA'AMILO WELLS	83	102	100	108	106	111	102	108
380-110640-E-3-A MS	Matrix Spike	59	48 *5-	59	60	57	52	56	73
380-110640-F-3-A MSD	Matrix Spike Duplicate	46 *5-	33 *5-	46 *5-	47 *5-	42 *5-	41 *5-	36 *5-	52
380-110869-B-1-A LMS	Matrix Spike	79	79	101	97	90	85	83	91
380-110869-C-1-A LMSD	Matrix Spike Duplicate	78	80	101	99	93	83	82	88
380-111075-B-3-A MS	Matrix Spike	111	106	106	106	107	106	109	104
380-111075-C-3-A MSD	Matrix Spike Duplicate	108	103	106	107	104	107	111	106
LCS 380-106325/24-A	Lab Control Sample	94	104	101	108	103	112	104	106
LCS 380-106328/24-A	Lab Control Sample	81	87	85	90	86	94	89	92
LCS 380-107235/22-A	Lab Control Sample	108	100	103	107	103	101	101	101
MBL 380-106325/22-A	Method Blank	96	106	99	103	106	111	101	106
MBL 380-106328/22-A	Method Blank	71	72	78	84	75	79	73	80
MBL 380-107235/20-A	Method Blank	104	100	100	103	100	100	100	99
MRL 380-106325/23-A	Lab Control Sample	98	108	103	111	109	114	107	110
MRL 380-106328/23-A	Lab Control Sample	84	85	90	94	89	90	84	89
MRL 380-107235/21-A	Lab Control Sample	91	97	98	104	102	102	97	96

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-110626-1	HALAWA WELLS UNITS 1 & 2 F	95	105	107	105	108	130	140	121
380-110626-2	AIEA GULCH WELLS PUMP 2	93	101	106	104	106	124	128	109
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	82	85	102	100	98	121	128	101
380-110626-4	KA'AMILO WELLS	98	108	99	103	105	125	124	112
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	103	101	112	113	106	127	115	104
380-110626-6	FB AIEA GULCH WELLS PUMP 2	105	102	116	114	107	125	116	101
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	109	101	113	113	108	121	114	106
380-110626-8	FB KA'AMILO WELLS	108	110	110	112	107	132	120	102
380-110640-E-3-A MS	Matrix Spike	64	62	110	104	105	115	119	104
380-110640-F-3-A MSD	Matrix Spike Duplicate	46 *5-	44 *5-	106	104	103	120	113	108
380-110869-B-1-A LMS	Matrix Spike	100	87	102	105	104	147	129	121
380-110869-C-1-A LMSD	Matrix Spike Duplicate	100	89	100	103	102	146	132	122
380-111075-B-3-A MS	Matrix Spike	106	108	104	103	105	113	120	105
380-111075-C-3-A MSD	Matrix Spike Duplicate	107	117	106	104	105	117	121	107
LCS 380-106325/24-A	Lab Control Sample	108	105	118	111	111	131	124	110
LCS 380-106328/24-A	Lab Control Sample	91	85	109	106	106	116	107	103
LCS 380-107235/22-A	Lab Control Sample	104	111	107	107	106	119	126	109

Isotope Dilution Summary

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

Job ID: 380-110626-1
 SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
MBL 380-106325/22-A	Method Blank	107	106	116	109	109	125	119	105
MBL 380-106328/22-A	Method Blank	84	81	113	112	113	128	116	108
MBL 380-107235/20-A	Method Blank	101	104	108	107	108	121	127	109
MRL 380-106325/23-A	Lab Control Sample	111	112	119	110	108	122	116	107
MRL 380-106328/23-A	Lab Control Sample	95	91	117	113	108	116	114	105
MRL 380-107235/21-A	Lab Control Sample	104	109	105	107	106	123	124	111

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- 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: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-106325/22-A
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106325

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		08/30/24 16:25	09/02/24 04:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/30/24 16:25	09/02/24 04:44	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C6 PFDA	106		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C5 PFHxA	99		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C4 PFHpA	103		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C8 PFOA	106		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C9 PFNA	111		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C7 PFUnA	101		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C2 PFDoA	106		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C4 PFBA	107		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C5 PFPeA	106		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C3 PFBS	116		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C3 PFHxS	109		50 - 200	08/30/24 16:25	09/02/24 04:44	1

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-106325/22-A
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106325

<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	109		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C2-4:2-FTS	125		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C2-6:2-FTS	119		50 - 200	08/30/24 16:25	09/02/24 04:44	1
13C2-8:2-FTS	105		50 - 200	08/30/24 16:25	09/02/24 04:44	1

Lab Sample ID: LCS 380-106325/24-A
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106325

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	50.4		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	52.3		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	53.9		ng/L		90	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	58.9		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	54.5		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	56.0		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	59.2		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	56.4		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	57.6		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	57.3		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	60.1	53.8		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	57.7		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	57.4		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	57.0		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	54.6		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	56.4		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	57.1		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	54.0		ng/L		90	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	58.8		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	50.7		ng/L		84	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	53.6		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	57.4		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	58.8		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	56.1		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-106325/24-A
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106325

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.1	55.9		ng/L		93	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	94		50 - 200				
13C6 PFDA	104		50 - 200				
13C5 PFHxA	101		50 - 200				
13C4 PFHpA	108		50 - 200				
13C8 PFOA	103		50 - 200				
13C9 PFNA	112		50 - 200				
13C7 PFUnA	104		50 - 200				
13C2 PFDoA	106		50 - 200				
13C4 PFBA	108		50 - 200				
13C5 PFPeA	105		50 - 200				
13C3 PFBS	118		50 - 200				
13C3 PFHxS	111		50 - 200				
13C8 PFOS	111		50 - 200				
13C2-4:2-FTS	131		50 - 200				
13C2-6:2-FTS	124		50 - 200				
13C2-8:2-FTS	110		50 - 200				

Lab Sample ID: MRL 380-106325/23-A
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106325

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.72	J	ng/L		86	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.85	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.92	J	ng/L		96	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.74	J	ng/L		87	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.06	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-106325/23-A
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106325

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.11	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.01	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.14	J	ng/L		107	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.74	J	ng/L		87	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.95	J	ng/L		98	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.89	J	ng/L		94	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	111		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	114		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	110		50 - 200
13C4 PFBA	111		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	119		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	122		50 - 200
13C2-6:2-FTS	116		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: 380-110640-E-3-A MS
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 106325

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		120	99.0		ng/L		82	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	109		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	104		ng/L		87	70 - 130

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110640-E-3-A MS
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 106325

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	*5-	120	115		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	111		ng/L		91	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0	*5-	120	112	*5-	ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	121		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	117		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	115		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	123		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0	*5-	120	110		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.4		120	119		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0	*5-	120	116		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0	*5-	120	114		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	108		ng/L		90	70 - 130
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	<2.0		120	120		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	98.1		ng/L		82	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	107		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	121		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	113		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	111		ng/L		92	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	59		50 - 200
13C6 PFDA	48	*5-	50 - 200
13C5 PFHxA	59		50 - 200
13C4 PFHpA	60		50 - 200
13C8 PFOA	57		50 - 200
13C9 PFNA	52		50 - 200
13C7 PFUnA	56		50 - 200
13C2 PFDoA	73		50 - 200
13C4 PFBA	64		50 - 200
13C5 PFPeA	62		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	105		50 - 200

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110640-E-3-A MS
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 106325

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	119		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 380-110640-F-3-A MSD
Matrix: Water
Analysis Batch: 106448

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 106325

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	103		ng/L		85	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	107		ng/L		89	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	101	*5-	ng/L		84	70 - 130	4	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0	*5-	120	111	*5-	ng/L		93	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	108		ng/L		89	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0	*5-	120	110	*5-	ng/L		91	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	120		ng/L		100	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	114	*5-	ng/L		95	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	113		ng/L		94	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	119	*5-	ng/L		97	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0	*5-	120	112	*5-	ng/L		93	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	2.4		120	118		ng/L		96	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0	*5-	120	119	*5-	ng/L		98	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0	*5-	120	118	*5-	ng/L		98	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		120	110	*5-	ng/L		91	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	111		ng/L		92	70 - 130	4	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	114		ng/L		95	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	108		ng/L		90	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	105	*5-	ng/L		87	70 - 130	14	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	107		ng/L		89	70 - 130	8	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	105	*5-	ng/L		88	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	114	*5-	ng/L		95	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	120	*5-	ng/L		98	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	112		ng/L		93	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	108		ng/L		90	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	46	*5-	50 - 200
13C6 PFDA	33	*5-	50 - 200
13C5 PFHxA	46	*5-	50 - 200
13C4 PFHpA	47	*5-	50 - 200
13C8 PFOA	42	*5-	50 - 200
13C9 PFNA	41	*5-	50 - 200
13C7 PFUnA	36	*5-	50 - 200
13C2 PFDoA	52		50 - 200
13C4 PFBA	46	*5-	50 - 200
13C5 PFPeA	44	*5-	50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	103		50 - 200
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	113		50 - 200
13C2-8:2-FTS	108		50 - 200

Lab Sample ID: MBL 380-106328/22-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106328

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		08/30/24 16:41	09/02/24 09:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-106328/22-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106328

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/30/24 16:41	09/02/24 09:11	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	71		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C6 PFDA	72		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C5 PFHxA	78		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C4 PFHpA	84		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C8 PFOA	75		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C9 PFNA	79		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C7 PFUnA	73		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C2 PFDoA	80		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C4 PFBA	84		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C5 PFPeA	81		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C3 PFBS	113		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C3 PFHxS	112		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C8 PFOS	113		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C2-4:2-FTS	128		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C2-6:2-FTS	116		50 - 200	08/30/24 16:41	09/02/24 09:11	1
13C2-8:2-FTS	108		50 - 200	08/30/24 16:41	09/02/24 09:11	1

Lab Sample ID: LCS 380-106328/24-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	49.9		ng/L		83	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	53.4		ng/L		89	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	53.6		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	56.2		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	55.7		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	55.4		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	58.3		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	57.2		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	57.3		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	55.8		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	60.2	53.7		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	58.0		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	58.5		ng/L		97	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-106328/24-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.2	56.9		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	54.9		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	56.4		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	56.7		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	56.7		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	60.2		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.2	52.0		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	55.6		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	57.8		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	58.8		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	56.9		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	54.5		ng/L		90	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	81		50 - 200
13C6 PFDA	87		50 - 200
13C5 PFHxA	85		50 - 200
13C4 PFHpA	90		50 - 200
13C8 PFOA	86		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	89		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	91		50 - 200
13C5 PFPeA	85		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	103		50 - 200

Lab Sample ID: MRL 380-106328/23-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.79	J	ng/L		89	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.89	J	ng/L		94	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-106328/23-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.79	J	ng/L		89	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.93	J	ng/L		96	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.98	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.04	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.02	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.05	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.11	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.08	J	ng/L		104	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.38	J	ng/L		119	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.76	J	ng/L		88	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.94	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.79	J	ng/L		89	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	84		50 - 200
13C6 PFDA	85		50 - 200
13C5 PFHxA	90		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	89		50 - 200
13C9 PFNA	90		50 - 200
13C7 PFUnA	84		50 - 200
13C2 PFDoA	89		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	91		50 - 200
13C3 PFBS	117		50 - 200
13C3 PFHxS	113		50 - 200

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-106328/23-A
Matrix: Water
Analysis Batch: 106449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106328

<i>Isotope Dilution</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: 380-110869-B-1-A LMS
Matrix: Water
Analysis Batch: 106675

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 106328

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>LMS Result</i>	<i>LMS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	1.93	J	ng/L		96	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	1.86	J	ng/L		93	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	1.96	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	1.85	J	ng/L		92	50 - 150
Perfluorobutanesulfonic acid (PFBS)	12		2.01	13.5	4	ng/L		87	50 - 150
Perfluorodecanoic acid (PFDA)	3.3		2.01	5.34		ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.17		ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	7.8		2.01	9.83		ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	10		2.01	11.8	4	ng/L		74	50 - 150
Perfluorohexanoic acid (PFHxA)	17		2.01	19.0	4	ng/L		95	50 - 150
Perfluorononanoic acid (PFNA)	3.1		2.01	4.99		ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	15		2.01	16.5	4	ng/L		78	50 - 150
Perfluorooctanoic acid (PFOA)	18		2.01	20.5	4	ng/L		126	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.37		ng/L		118	50 - 150
Perfluorobutanoic acid (PFBA)	13		2.01	14.7	4	ng/L		80	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.21		ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.18		ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.38		ng/L		119	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.93	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.01	1.93	J	ng/L		96	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	1.20	J	ng/L		60	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.17		ng/L		108	50 - 150
Perfluoropentanoic acid (PFPeA)	14		2.01	15.9	4	ng/L		69	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	1.96	J	ng/L		98	50 - 150

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110869-B-1-A LMS
Matrix: Water
Analysis Batch: 106675

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	3.23		ng/L		101	50 - 150
LMS LMS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	79		50 - 200						
13C6 PFDA	79		50 - 200						
13C5 PFHxA	101		50 - 200						
13C4 PFHpA	97		50 - 200						
13C8 PFOA	90		50 - 200						
13C9 PFNA	85		50 - 200						
13C7 PFUnA	83		50 - 200						
13C2 PFDoA	91		50 - 200						
13C4 PFBA	100		50 - 200						
13C5 PFPeA	87		50 - 200						
13C3 PFBS	102		50 - 200						
13C3 PFHxS	105		50 - 200						
13C8 PFOS	104		50 - 200						
13C2-4:2-FTS	147		50 - 200						
13C2-6:2-FTS	129		50 - 200						
13C2-8:2-FTS	121		50 - 200						

Lab Sample ID: 380-110869-C-1-A LMSD
Matrix: Water
Analysis Batch: 106675

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.02	1.95	J	ng/L		97	50 - 150	1	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.02	1.88	J	ng/L		93	50 - 150	1	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.02	1.89	J	ng/L		94	50 - 150	4	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.02	1.67	J	ng/L		83	50 - 150	10	50
Perfluorobutanesulfonic acid (PFBS)	12		2.02	13.7	4	ng/L		93	50 - 150	1	50
Perfluorodecanoic acid (PFDA)	3.3		2.02	5.01		ng/L		84	50 - 150	6	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.02	2.19		ng/L		108	50 - 150	1	50
Perfluoroheptanoic acid (PFHpA)	7.8		2.02	9.32		ng/L		77	50 - 150	5	50
Perfluorohexanesulfonic acid (PFHxS)	10		2.02	11.8	4	ng/L		71	50 - 150	0	50
Perfluorohexanoic acid (PFHxA)	17		2.02	19.9	4	ng/L		139	50 - 150	5	50
Perfluorononanoic acid (PFNA)	3.1		2.02	4.87		ng/L		89	50 - 150	3	50
Perfluorooctanesulfonic acid (PFOS)	15		2.02	16.7	4	ng/L		89	50 - 150	1	50
Perfluorooctanoic acid (PFOA)	18		2.02	19.0	4	ng/L		54	50 - 150	7	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.02	2.23		ng/L		111	50 - 150	6	50
Perfluorobutanoic acid (PFBA)	13		2.02	14.6	4	ng/L		78	50 - 150	0	50

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-110869-C-1-A LMSD
Matrix: Water
Analysis Batch: 106675

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 106328

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.02	2.15		ng/L		106	50 - 150	3	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.02	2.16		ng/L		107	50 - 150	1	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.02	2.39		ng/L		119	50 - 150	0	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.02	1.80	J	ng/L		89	50 - 150	7	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.02	2.00		ng/L		99	50 - 150	4	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.02	1.14	J	ng/L		56	50 - 150	5	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.02	2.08		ng/L		103	50 - 150	4	50
Perfluoropentanoic acid (PFPeA)	14		2.02	15.8	4	ng/L		67	50 - 150	0	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.02	1.91	J	ng/L		95	50 - 150	3	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.02	3.21		ng/L		99	50 - 150	0	50

Isotope Dilution	LMSD %Recovery	LMSD Qualifier	Limits
13C3 HFPO-DA	78		50 - 200
13C6 PFDA	80		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	93		50 - 200
13C9 PFNA	83		50 - 200
13C7 PFUnA	82		50 - 200
13C2 PFDoA	88		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	89		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	102		50 - 200
13C2-4:2-FTS	146		50 - 200
13C2-6:2-FTS	132		50 - 200
13C2-8:2-FTS	122		50 - 200

Lab Sample ID: MBL 380-107235/20-A
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107235

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-107235/20-A
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107235

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/06/24 15:32	09/07/24 20:25	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	104		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C6 PFDA	100		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C5 PFHxA	100		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C4 PFHpA	103		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C8 PFOA	100		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C9 PFNA	100		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C7 PFUnA	100		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C2 PFDoA	99		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C4 PFBA	101		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C5 PFPeA	104		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C3 PFBS	108		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C3 PFHxS	107		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C8 PFOS	108		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C2-4:2-FTS	121		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C2-6:2-FTS	127		50 - 200	09/06/24 15:32	09/07/24 20:25	1
13C2-8:2-FTS	109		50 - 200	09/06/24 15:32	09/07/24 20:25	1

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-107235/22-A
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107235

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	55.8		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	55.7		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	57.7		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	58.2		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	60.2		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	57.5		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	58.4		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	57.5		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	59.2		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	59.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	60.1	57.9		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	56.8		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	61.1		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	59.5		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	61.9		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	59.1		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	61.4		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	57.3		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	56.8		ng/L		95	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	57.9		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	60.0		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	57.7		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	58.5		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	58.5		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	57.4		ng/L		95	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	108		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	101		50 - 200

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-107235/22-A
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107235

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C7 PFUnA	101		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	126		50 - 200
13C2-8:2-FTS	109		50 - 200

Lab Sample ID: MRL 380-107235/21-A
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107235

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.86	J	ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.75	J	ng/L		87	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.92	J	ng/L		96	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.96	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.10	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.11	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.31	J	ng/L		115	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.87	J	ng/L		94	50 - 150

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-107235/21-A
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107235

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.81	J	ng/L		90	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.85	J	ng/L		92	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	98		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	102		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	97		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	124		50 - 200
13C2-8:2-FTS	111		50 - 200

Lab Sample ID: 380-111075-B-3-A MS
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 107235

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		120	109		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	114		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	112		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	116		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	109		ng/L		91	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	111		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	115		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	113		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111075-C-3-A MSD
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 107235

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	110		ng/L		91	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		92	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	110		ng/L		92	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	104		ng/L		86	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	114		ng/L		95	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		120	114		ng/L		95	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	112		ng/L		93	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	112		ng/L		93	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	114		ng/L		95	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	115		ng/L		95	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		120	109		ng/L		91	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	110		ng/L		92	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		120	117		ng/L		97	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	112		ng/L		93	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		120	117		ng/L		98	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	115		ng/L		95	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	110		ng/L		91	70 - 130	7	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	114		ng/L		94	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	117		ng/L		97	70 - 130	27	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	111		ng/L		92	70 - 130	4	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	117		ng/L		98	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	111		ng/L		92	70 - 130	7	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	109		ng/L		91	70 - 130	7	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	113		ng/L		94	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	113		ng/L		94	70 - 130	2	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	108		50 - 200
13C6 PFDA	103		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	107		50 - 200

QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-111075-C-3-A MSD
Matrix: Water
Analysis Batch: 107314

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 107235

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C7 PFUnA	111		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	117		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	107		50 - 200

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

Lab Sample ID: MBL 380-106058/20-A
Matrix: Water
Analysis Batch: 106185

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106058

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/29/24 13:00	08/30/24 09:14	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	123		70 - 130			08/29/24 13:00	08/30/24 09:14	1
13C2 PFHxA	124		70 - 130			08/29/24 13:00	08/30/24 09:14	1
13C2 PFDA	127		70 - 130			08/29/24 13:00	08/30/24 09:14	1
13C3-GenX	107		70 - 130			08/29/24 13:00	08/30/24 09:14	1

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-106058/22-A
Matrix: Water
Analysis Batch: 106185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106058

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	27.5		ng/L		110	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	27.8		ng/L		111	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	26.6		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	27.1		ng/L		108	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	28.1		ng/L		112	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.8		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	24.7		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	26.5		ng/L		106	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.4		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	28.3		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	26.9		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	28.1		ng/L		112	70 - 130
Perfluorononanoic acid (PFNA)	25.1	27.2		ng/L		108	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	27.4		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	26.6		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	28.7		ng/L		115	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	28.1		ng/L		112	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	27.6		ng/L		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	114		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	110		70 - 130

Lab Sample ID: MRL 380-106058/21-A
Matrix: Water
Analysis Batch: 106185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106058

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.30	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.16	J	ng/L		108	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.14	J	ng/L		107	50 - 150

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QC Sample Results

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-106058/21-A
Matrix: Water
Analysis Batch: 106185

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106058

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.39	J	ng/L		119	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.17	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.24	J	ng/L		112	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.23	J	ng/L		111	50 - 150
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.16	J	ng/L		108	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.21	J	ng/L		110	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	119		70 - 130
13C2 PFHxA	114		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	98		70 - 130

Lab Sample ID: 380-110655-B-1-A MS
Matrix: Water
Analysis Batch: 106185

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 106058

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	25.6		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	28.3		ng/L		113	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.7		ng/L		106	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.4		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.6		ng/L		106	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	28.4		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.3		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.1		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.7		ng/L		110	70 - 130

QC Sample Results

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

Job ID: 380-110626-1
 SDG: Weekly PFAS

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

Lab Sample ID: 380-110655-C-1-A MSD

Matrix: Water

Analysis Batch: 106185

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 106058

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	27.2		ng/L		108	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	29.1		ng/L		116	70 - 130	5	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	28.4		ng/L		113	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	29.2		ng/L		116	70 - 130	4	30
Surrogate											
	%Recovery	Qualifier									Limits
d5-NEtFOSAA	115										70 - 130
13C2 PFHxA	116										70 - 130
13C2 PFDA	116										70 - 130
13C3-GenX	113										70 - 130

QC Association Summary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

LCMS

Prep Batch: 106058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-110626-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-110626-4	KA'AMILO WELLS	Total/NA	Water	537.1 DW	
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-110626-8	FB KA'AMILO WELLS	Total/NA	Water	537.1 DW	
MBL 380-106058/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-106058/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-106058/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-110655-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-110655-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 106185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	106058
380-110626-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	106058
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	106058
380-110626-4	KA'AMILO WELLS	Total/NA	Water	537.1	106058
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	106058
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	106058
380-110626-8	FB KA'AMILO WELLS	Total/NA	Water	537.1	106058
MBL 380-106058/20-A	Method Blank	Total/NA	Water	537.1	106058
LCS 380-106058/22-A	Lab Control Sample	Total/NA	Water	537.1	106058
MRL 380-106058/21-A	Lab Control Sample	Total/NA	Water	537.1	106058
380-110655-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	106058
380-110655-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	106058

Prep Batch: 106325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-110626-8	FB KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-106325/22-A	Method Blank	Total/NA	Water	533	
LCS 380-106325/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-106325/23-A	Lab Control Sample	Total/NA	Water	533	
380-110640-E-3-A MS	Matrix Spike	Total/NA	Water	533	
380-110640-F-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 106328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-110626-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
MBL 380-106328/22-A	Method Blank	Total/NA	Water	533	
LCS 380-106328/24-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-106328/23-A	Lab Control Sample	Total/NA	Water	533	
380-110869-B-1-A LMS	Matrix Spike	Total/NA	Water	533	
380-110869-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 106448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	106325

QC Association Summary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

LCMS (Continued)

Analysis Batch: 106448 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-8	FB KA'AMILO WELLS	Total/NA	Water	533	106325
MBL 380-106325/22-A	Method Blank	Total/NA	Water	533	106325
LCS 380-106325/24-A	Lab Control Sample	Total/NA	Water	533	106325
MRL 380-106325/23-A	Lab Control Sample	Total/NA	Water	533	106325
380-110640-E-3-A MS	Matrix Spike	Total/NA	Water	533	106325
380-110640-F-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	106325

Analysis Batch: 106449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	106328
380-110626-6	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	106328
MBL 380-106328/22-A	Method Blank	Total/NA	Water	533	106328
LCS 380-106328/24-A	Lab Control Sample	Total/NA	Water	533	106328
MRL 380-106328/23-A	Lab Control Sample	Total/NA	Water	533	106328

Analysis Batch: 106675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110869-B-1-A LMS	Matrix Spike	Total/NA	Water	533	106328
380-110869-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	106328

Prep Batch: 107235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
380-110626-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-110626-4	KA'AMILO WELLS	Total/NA	Water	533	
MBL 380-107235/20-A	Method Blank	Total/NA	Water	533	
LCS 380-107235/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-107235/21-A	Lab Control Sample	Total/NA	Water	533	
380-111075-B-3-A MS	Matrix Spike	Total/NA	Water	533	
380-111075-C-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 107314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-110626-1	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	107235
380-110626-2	AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	107235
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	107235
380-110626-4	KA'AMILO WELLS	Total/NA	Water	533	107235
MBL 380-107235/20-A	Method Blank	Total/NA	Water	533	107235
LCS 380-107235/22-A	Lab Control Sample	Total/NA	Water	533	107235
MRL 380-107235/21-A	Lab Control Sample	Total/NA	Water	533	107235
380-111075-B-3-A MS	Matrix Spike	Total/NA	Water	533	107235
380-111075-C-3-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	107235

Lab Chronicle

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-1

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107235	N8NE	EA POM	09/06/24 15:32
Total/NA	Analysis	533		1	107314	M7ML	EA POM	09/07/24 22:39
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 10:21

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-2

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107235	N8NE	EA POM	09/06/24 15:32
Total/NA	Analysis	533		1	107314	M7ML	EA POM	09/07/24 22:58
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 10:30

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

Lab Sample ID: 380-110626-3

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107235	N8NE	EA POM	09/06/24 15:32
Total/NA	Analysis	533		1	107314	M7ML	EA POM	09/07/24 23:07
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 10:40

Client Sample ID: KA'AMILO WELLS

Lab Sample ID: 380-110626-4

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			107235	N8NE	EA POM	09/06/24 15:32
Total/NA	Analysis	533		1	107314	M7ML	EA POM	09/07/24 23:17
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 10:49

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-110626-5

Date Collected: 08/26/24 10:13

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			106328	E9PK	EA POM	08/30/24 16:41
Total/NA	Analysis	533		1	106449	SZ9R	EA POM	09/02/24 12:58
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 10:59

Lab Chronicle

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-110626-6

Date Collected: 08/26/24 10:36

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			106328	E9PK	EA POM	08/30/24 16:41
Total/NA	Analysis	533		1	106449	SZ9R	EA POM	09/02/24 13:08

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

Lab Sample ID: 380-110626-7

Date Collected: 08/26/24 11:04

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			106325	E9PK	EA POM	08/30/24 16:25
Total/NA	Analysis	533		1	106448	SZ9R	EA POM	09/02/24 07:33
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 11:18

Client Sample ID: FB KA'AMILO WELLS

Lab Sample ID: 380-110626-8

Date Collected: 08/26/24 11:33

Matrix: Water

Date Received: 08/28/24 09:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			106325	E9PK	EA POM	08/30/24 16:25
Total/NA	Analysis	533		1	106448	SZ9R	EA POM	09/02/24 07:42
Total/NA	Prep	537.1 DW			106058	G9MN	EA POM	08/29/24 13:00
Total/NA	Analysis	537.1		1	106185	SZ9R	EA POM	08/30/24 11:28

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: 380-110626-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

Method Summary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

Job ID: 380-110626-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-110626-1	HALAWA WELLS UNITS 1 & 2 P1	Water	08/26/24 10:13	08/28/24 09:54
380-110626-2	AIEA GULCH WELLS PUMP 2	Water	08/26/24 10:36	08/28/24 09:54
380-110626-3	AIEA WELLS PUMPS 1&2 (260) P2	Water	08/26/24 11:04	08/28/24 09:54
380-110626-4	KA'AMILO WELLS	Water	08/26/24 11:33	08/28/24 09:54
380-110626-5	FB HALAWA WELLS UNITS 1 & 2 P1	Water	08/26/24 10:13	08/28/24 09:54
380-110626-6	FB AIEA GULCH WELLS PUMP 2	Water	08/26/24 10:36	08/28/24 09:54
380-110626-7	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	08/26/24 11:04	08/28/24 09:54
380-110626-8	FB KA'AMILO WELLS	Water	08/26/24 11:33	08/28/24 09:54

- 1
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Chain of Custody Record

Client Information		Lab P/N: Arada Rachelle	Carrier Tracking No(s): 380-27941-2757.2
Client Contact: Dr Ron Fenstermacher		State of Origin: Hawaii	Page: Page 2 of 2
Company: City & County of Honolulu		Job #: 380-110626 COC	
Address: 630 South Beretania Street, Chemistry Lab		Analysis Requested	
City: Honolulu		Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>	
State Zip: HI, 96843		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	
Phone: 808-748-5091 (tel)		SUBCONTRACT 625 PAH Physis LL (EAL) + TICs	
Email: rfenstermacher@hbws.org		80158_GRO_LL - (MOD) GRO	
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		80158_PRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-	
Site:		525_2_PREC (MOD) s25plus PLUS TICs	
		537_1_DW_PREC - 537 1 Full List	
		533 - All Analytes	
		Total Number of Containers	
		Special Instructions/Note:	
		Preservation Codes	
		M - Hexane	
		N - None	
		O - AsNaO2	
		P - Na2O4S	
		Q - Nitric Acid	
		R - Na2SO3	
		S - H2SO4	
		T - TSP Dodecahydrate	
		U - Acetone	
		V - NCAAA	
		W - pH 4-5	
		Y - Trizma	
		Z other (specify)	
		Other	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Soil, Other)	Preservation Code	R	A	Q	OA	Y	I	Special Instructions/Note
HALAWA WELLS UNITS 1&2 P1	26-Aug-2024	1013	G	Water						3	3	
AIEA GULCH WELLS PUMP 2	26-Aug-2024	1036	G	Water						3	3	
AIEA WELLS PUMPS 1&2 (260) PZ	26-Aug-2024	1104	G	Water						3	3	
KA'AMILO WELLS	26-Aug-2024	1133	G	Water						3	3	
FB HALAWA WELLS UNITS 1&2	26-Aug-2024	1013								1	1	
FB AIEA GULCH WELLS PUMP 2	26-Aug-2024	1036								1	1	
FB AIEA WELLS PUMPS 1&2 (260)	26-Aug-2024	1104								1	1	
FB KA'AMILO WELLS	26-Aug-2024	1133								1	1	

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested I, II, III, IV Other (specify)

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by _____ Date: _____
 Relinquished by _____ Date/Time: 1400 21 AUG 2024 Company: HBWS
 Relinquished by _____ Date/Time: _____ Company: _____
 Relinquished by _____ Date/Time: _____ Company: _____

Method of Shipment: FEDEX 9782 2165 6661
 Date/Time: 08/25/2024 09:54 Company: FEAR
 Date/Time: _____ Company: _____
 Date/Time: _____ Company: _____

Cooler Temperature(s) °C and Other Remarks: (751A) 3.1°-0.1°-3.0° BELT-FROZEN



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-110626-1

SDG Number: Weekly PFAS

Login Number: 110626

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Edrosa, Rey

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	

