

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Aiea Gulch Wells Pump 2

JOB NUMBER

380-230407-1

Eurofins Pomona

Job Notes

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

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



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 380-230407-1

Job ID: 380-230407-1

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Job Narrative 380-230407-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 8/12/2026 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C.

PFAS

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

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Detection Summary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-1

☐ No Detections.

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

Lab Sample ID: 380-230407-2

☐ 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: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-1

Date Collected: 08/10/26 11:20

Matrix: Drinking Water

Date Received: 08/12/26 09:50

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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 18:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C6 PFDA	89		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C5 PFHxA	97		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C4 PFHpA	96		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C8 PFOA	93		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C9 PFNA	91		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C7 PFUnA	94		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C2 PFDoA	96		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C4 PFBA	91		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C5 PFPeA	87		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C3 PFBS	114		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C3 PFHxS	112		50 - 200	08/14/26 07:59	08/14/26 18:51	1

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Client Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-1

Date Collected: 08/10/26 11:20

Matrix: Drinking Water

Date Received: 08/12/26 09:50

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C2-4:2-FTS	107		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C2-6:2-FTS	91		50 - 200	08/14/26 07:59	08/14/26 18:51	1
13C2-8:2-FTS	85		50 - 200	08/14/26 07:59	08/14/26 18:51	1

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/13/26 01:47	08/14/26 14:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	97		70 - 130			08/13/26 01:47	08/14/26 14:50	1
13C2 PFHxA	102		70 - 130			08/13/26 01:47	08/14/26 14:50	1
13C2 PFDA	99		70 - 130			08/13/26 01:47	08/14/26 14:50	1
13C3-GenX	96		70 - 130			08/13/26 01:47	08/14/26 14:50	1

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

Lab Sample ID: 380-230407-2

Date Collected: 08/10/26 11:20

Matrix: Water

Date Received: 08/12/26 09:50

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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1

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Client Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-2

Date Collected: 08/10/26 11:20

Matrix: Water

Date Received: 08/12/26 09:50

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		08/14/26 07:59	08/14/26 19:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/14/26 07:59	08/14/26 19:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	76		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C6 PFDA	57		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C5 PFHxA	88		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C4 PFHpA	79		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C8 PFOA	73		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C9 PFNA	68		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C7 PFUnA	51		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C2 PFDoA	53		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C4 PFBA	82		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C5 PFPeA	83		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C3 PFBS	116		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C3 PFHxS	117		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C8 PFOS	109		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C2-4:2-FTS	111		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C2-6:2-FTS	92		50 - 200	08/14/26 07:59	08/14/26 19:02	1
13C2-8:2-FTS	81		50 - 200	08/14/26 07:59	08/14/26 19:02	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-2

Date Collected: 08/10/26 11:20

Matrix: Water

Date Received: 08/12/26 09:50

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/13/26 01:47	08/15/26 00:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130			08/13/26 01:47	08/15/26 00:42	1
13C2 PFHxA	103		70 - 130			08/13/26 01:47	08/15/26 00:42	1
13C2 PFDA	104		70 - 130			08/13/26 01:47	08/15/26 00:42	1
13C3-GenX	94		70 - 130			08/13/26 01:47	08/15/26 00:42	1

Action Limit Summary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-1

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 Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

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

Lab Sample ID: 380-230407-2

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 Limit	RL	Method	Prep Type
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Surrogate Summary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-230407-1	AIEA GULCH WELLS PUMP 2 (331	97	102	99	96
Surrogate Legend					
d5NEFOS = d5-NEtFOSAA					
PFHxA = 13C2 PFHxA					
PFDA = 13C2 PFDA					
GenX = 13C3-GenX					

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

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)
380-230315-E-1-A MS	Matrix Spike	100	107	101	107
380-230315-F-1-A MSD	Matrix Spike Duplicate	96	106	103	101
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	98	103	104	94
LCS 380-246199/22-A	Lab Control Sample	96	104	105	97
MBL 380-246199/20-A	Method Blank	91	101	103	94
MBL 380-246199/20-A	Method Blank	95	101	106	92
MRL 380-246199/21-A	Lab Control Sample	101	106	103	104
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: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Matrix: Drinking Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-230407-1	AIEA GULCH WELLS PUMP 2 (331	87	89	97	96	93	91	94	96

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-230407-1	AIEA GULCH WELLS PUMP 2 (331	91	87	114	112	105	107	91	85

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-230403-B-11-A MS	Matrix Spike	105	89	112	107	103	97	87	85
380-230403-C-11-A MSD	Matrix Spike Duplicate	112	94	115	110	106	103	92	93
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	76	57	88	79	73	68	51	53
LCS 380-246477/22-A	Lab Control Sample	105	93	113	105	103	103	92	95
MBL 380-246477/20-A	Method Blank	74	69	87	81	79	77	62	69
MRL 380-246477/21-A	Lab Control Sample	88	77	95	95	87	84	76	81

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-230403-B-11-A MS	Matrix Spike	107	104	115	115	110	119	99	80
380-230403-C-11-A MSD	Matrix Spike Duplicate	105	106	113	115	108	111	90	78
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	82	83	116	117	109	111	92	81
LCS 380-246477/22-A	Lab Control Sample	86	101	109	111	105	109	86	74
MBL 380-246477/20-A	Method Blank	87	82	117	114	109	109	90	80
MRL 380-246477/21-A	Lab Control Sample	89	90	112	112	106	105	85	74

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA

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Isotope Dilution Summary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

- 13C5PHA = 13C5 PFHxA
- C4PFHA = 13C4 PFHpA
- C8PFOA = 13C8 PFOA
- C9PFNA = 13C9 PFNA
- 13C7PUA = 13C7 PFUnA
- PFD_oA = 13C2 PFD_oA
- PFBA = 13C4 PFBA
- PFP_eA = 13C5 PFP_eA
- C3PFBS = 13C3 PFBS
- C3PFHS = 13C3 PFHxS
- C8PFOS = 13C8 PFOS
- 42FTS = 13C2-4:2-FTS
- 62FTS = 13C2-6:2-FTS
- 82FTS = 13C2-8:2-FTS

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: MBL 380-246477/20-A

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 246477

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		08/14/26 07:59	08/14/26 16:14	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	74		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C6 PFDA	69		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C5 PFHxA	87		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C4 PFHpA	81		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C8 PFOA	79		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C9 PFNA	77		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C7 PFUnA	62		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C2 PFDoA	69		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C4 PFBA	87		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C5 PFPeA	82		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C3 PFBS	117		50 - 200			08/14/26 07:59	08/14/26 16:14	1
13C3 PFHxS	114		50 - 200			08/14/26 07:59	08/14/26 16:14	1

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: MBL 380-246477/20-A
Matrix: Water
Analysis Batch: 246604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 246477

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	109		50 - 200	08/14/26 07:59	08/14/26 16:14	1
13C2-4:2-FTS	109		50 - 200	08/14/26 07:59	08/14/26 16:14	1
13C2-6:2-FTS	90		50 - 200	08/14/26 07:59	08/14/26 16:14	1
13C2-8:2-FTS	80		50 - 200	08/14/26 07:59	08/14/26 16:14	1

Lab Sample ID: LCS 380-246477/22-A
Matrix: Water
Analysis Batch: 246604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246477

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.1	55.7		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	59.1	56.6		ng/L		96	70 - 130
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	59.1	57.0		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.1	58.9		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.1	60.9		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	59.1	60.6		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	59.1	58.1		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.1	58.2		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.1	55.3		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	59.1	53.5		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	59.1	58.6		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.1	54.4		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	59.1	58.9		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.1	58.9		ng/L		100	70 - 130
Perfluorobutanoic acid (PFBA)	59.1	61.0		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.1	59.6		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.1	55.6		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.1	56.5		ng/L		96	70 - 130
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	59.1	50.7		ng/L		86	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	59.1	59.0		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.1	56.8		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.1	55.8		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	59.1	57.8		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.1	55.2		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: LCS 380-246477/22-A

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246477

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	59.1	59.1		ng/L		100	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	105		50 - 200				
13C6 PFDA	93		50 - 200				
13C5 PFHxA	113		50 - 200				
13C4 PFHpA	105		50 - 200				
13C8 PFOA	103		50 - 200				
13C9 PFNA	103		50 - 200				
13C7 PFUnA	92		50 - 200				
13C2 PFDoA	95		50 - 200				
13C4 PFBA	86		50 - 200				
13C5 PFPeA	101		50 - 200				
13C3 PFBS	109		50 - 200				
13C3 PFHxS	111		50 - 200				
13C8 PFOS	105		50 - 200				
13C2-4:2-FTS	109		50 - 200				
13C2-6:2-FTS	86		50 - 200				
13C2-8:2-FTS	74		50 - 200				

Lab Sample ID: MRL 380-246477/21-A

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246477

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	2.13	J	ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.97	2.10	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	1.88	J	ng/L		95	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.98	J	ng/L		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	2.05	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.19	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.15	J	ng/L		109	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	1.95	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.88	J	ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.86	J	ng/L		94	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.07	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.85	J	ng/L		94	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.15	J	ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	2.12	J	ng/L		108	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.06	J	ng/L		104	50 - 150

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: MRL 380-246477/21-A

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246477

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.33	J	ng/L		119	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.08	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.21	J	ng/L		112	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	1.84	J	ng/L		94	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	1.97	2.00	J	ng/L		102	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	2.03	J	ng/L		103	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.95	J	ng/L		99	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	2.07	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.95	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	2.07	J	ng/L		105	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	77		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	95		50 - 200
13C8 PFOA	87		50 - 200
13C9 PFNA	84		50 - 200
13C7 PFUnA	76		50 - 200
13C2 PFDoA	81		50 - 200
13C4 PFBA	89		50 - 200
13C5 PFPeA	90		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	112		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	85		50 - 200
13C2-8:2-FTS	74		50 - 200

Lab Sample ID: 380-230403-B-11-A MS

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 246477

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		59.2	53.7		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	55.2		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	55.0		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230403-B-11-A MS

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 246477

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		59.2	59.1		ng/L		100	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	58.0		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.2	59.2		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	58.9		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	58.2		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	59.9		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	53.7		ng/L		91	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.2	58.7		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	55.2		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		59.2	56.3		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	56.3		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		59.2	58.4		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	57.6		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	56.1		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	56.0		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	55.7		ng/L		94	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		59.2	59.0		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	60.0		ng/L		101	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	57.7		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	57.8		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	57.5		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	58.3		ng/L		98	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	105		50 - 200
13C6 PFDA	89		50 - 200
13C5 PFHxA	112		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	97		50 - 200
13C7 PFUnA	87		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	115		50 - 200
13C8 PFOS	110		50 - 200

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230403-B-11-A MS

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 246477

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	80		50 - 200

Lab Sample ID: 380-230403-C-11-A MSD

Matrix: Water

Analysis Batch: 246604

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 246477

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		59.2	55.6		ng/L		94	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	56.7		ng/L		96	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	58.1		ng/L		98	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.2	56.0		ng/L		95	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	59.0		ng/L		99	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		59.2	61.1		ng/L		103	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	55.1		ng/L		93	70 - 130	7	30
Perfluorooheptanoic acid (PFHpA)	<2.0		59.2	60.6		ng/L		102	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	56.2		ng/L		94	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	53.3		ng/L		90	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		59.2	57.1		ng/L		96	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		59.2	55.0		ng/L		92	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		59.2	59.2		ng/L		99	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	55.5		ng/L		94	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		59.2	59.7		ng/L		101	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	57.8		ng/L		98	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	58.7		ng/L		99	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	57.1		ng/L		96	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	56.1		ng/L		95	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		59.2	58.0		ng/L		98	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	58.4		ng/L		99	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	58.2		ng/L		98	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	59.7		ng/L		101	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	55.6		ng/L		94	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	58.6		ng/L		99	70 - 130	1	30

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	112		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	115		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	103		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	113		50 - 200
13C3 PFHxS	115		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	90		50 - 200
13C2-8:2-FTS	78		50 - 200

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020

Lab Sample ID: MBL 380-246199/20-A
Matrix: Water
Analysis Batch: 246275

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 246199

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Perfluorotridecanoic acid (PFTTrDA)	<0.35		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.29		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/13/26 01:47	08/13/26 15:23	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	91		70 - 130			08/13/26 01:47	08/13/26 15:23	1
13C2 PFHxA	101		70 - 130			08/13/26 01:47	08/13/26 15:23	1
13C2 PFDA	103		70 - 130			08/13/26 01:47	08/13/26 15:23	1

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MBL 380-246199/20-A

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 246199

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	94		70 - 130	08/13/26 01:47	08/13/26 15:23	1

Lab Sample ID: MBL 380-246199/20-A

Matrix: Water

Analysis Batch: 246602

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 246199

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.29		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		08/13/26 01:47	08/15/26 00:31	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	08/13/26 01:47	08/15/26 00:31	1
13C2 PFHxA	101		70 - 130	08/13/26 01:47	08/15/26 00:31	1
13C2 PFDA	106		70 - 130	08/13/26 01:47	08/15/26 00:31	1
13C3-GenX	92		70 - 130	08/13/26 01:47	08/15/26 00:31	1

Lab Sample ID: LCS 380-246199/22-A

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.1	46.3		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.1	50.1		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.1	49.9		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.1	47.8		ng/L		97	70 - 130

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QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: LCS 380-246199/22-A

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	49.1	45.9		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	49.1	49.2		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	49.1	48.9		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	49.1	50.5		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	49.1	50.3		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.1	52.2		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.1	52.8		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.1	50.3		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	49.1	51.1		ng/L		104	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.1	47.3		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.1	50.9		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.1	50.0		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.1	48.9		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.1	49.2		ng/L		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NETFOSAA	96		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	97		70 - 130

Lab Sample ID: MRL 380-246199/21-A

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	2.06	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	2.16	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.13	J	ng/L		109	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	2.00	J	ng/L		102	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	1.96	2.07	J	ng/L		106	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	2.13	J	ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.08	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	2.12	J	ng/L		108	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	2.08	J	ng/L		106	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: MRL 380-246199/21-A

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.22	J	ng/L		113	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.09	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	2.18	J	ng/L		111	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.10	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	1.84	J	ng/L		94	50 - 150
Perfluorotridecanoic acid (PFTDA)	1.96	2.14	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	2.00	J	ng/L		102	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.97	J	ng/L		100	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	2.08	J	ng/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	106		70 - 130
13C2 PFDA	103		70 - 130
13C3-GenX	104		70 - 130

Lab Sample ID: 380-230315-E-1-A MS

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 246199

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		24.7	25.1		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	25.6		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	25.3		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.7	25.1		ng/L		102	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.7	24.3		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		24.7	25.6		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	25.3		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		24.7	26.7		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		24.7	25.7		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.7	26.5		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.7	25.4		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	27.8		ng/L		109	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		24.7	26.2		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	24.0		ng/L		97	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-230315-E-1-A MS

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTTrDA)	<2.0		24.7	26.7		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.7	25.9		ng/L		105	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.7	24.7		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	25.8		ng/L		105	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
d5-NEtFOSAA	100		70 - 130						
13C2 PFHxA	107		70 - 130						
13C2 PFDA	101		70 - 130						
13C3-GenX	107		70 - 130						

Lab Sample ID: 380-230315-F-1-A MSD

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		24.7	25.1		ng/L		102	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		24.7	25.5		ng/L		103	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		24.7	25.5		ng/L		103	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		24.7	24.7		ng/L		100	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		24.7	24.8		ng/L		101	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		24.7	26.0		ng/L		105	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		24.7	25.6		ng/L		104	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		24.7	27.0		ng/L		110	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		24.7	25.8		ng/L		104	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		24.7	25.4		ng/L		103	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		24.7	25.5		ng/L		104	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		24.7	26.8		ng/L		105	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		24.7	25.2		ng/L		102	70 - 130	4	30
Perfluorotetradecanoic acid (PFTA)	<2.0		24.7	23.7		ng/L		96	70 - 130	1	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		24.7	26.3		ng/L		107	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		24.7	24.9		ng/L		101	70 - 130	4	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		24.7	24.8		ng/L		101	70 - 130	0	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method: EPA 537.1 V2 - EPA 537.1 Ver. 2.0 March 2020 (Continued)

Lab Sample ID: 380-230315-F-1-A MSD

Matrix: Water

Analysis Batch: 246275

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 246199

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		24.7	24.8		ng/L		100	70 - 130	4	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	96		70 - 130								
13C2 PFHxA	106		70 - 130								
13C2 PFDA	103		70 - 130								
13C3-GenX	101		70 - 130								

QC Association Summary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

LCMS

Prep Batch: 246199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-230407-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	537.1 DW	
MBL 380-246199/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-246199/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-246199/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-230315-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-230315-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 246275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-246199/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	246199
LCS 380-246199/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	246199
MRL 380-246199/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	246199
380-230315-E-1-A MS	Matrix Spike	Total/NA	Water	EPA 537.1 V2	246199
380-230315-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 537.1 V2	246199

Prep Batch: 246477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-230407-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	533	
MBL 380-246477/20-A	Method Blank	Total/NA	Water	533	
LCS 380-246477/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-246477/21-A	Lab Control Sample	Total/NA	Water	533	
380-230403-B-11-A MS	Matrix Spike	Total/NA	Water	533	
380-230403-C-11-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 246536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-230407-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA 537.1 V2	246199

Analysis Batch: 246602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	EPA 537.1 V2	246199
MBL 380-246199/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	246199

Analysis Batch: 246604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-230407-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	246477
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	533	246477
MBL 380-246477/20-A	Method Blank	Total/NA	Water	533	246477
LCS 380-246477/22-A	Lab Control Sample	Total/NA	Water	533	246477
MRL 380-246477/21-A	Lab Control Sample	Total/NA	Water	533	246477
380-230403-B-11-A MS	Matrix Spike	Total/NA	Water	533	246477
380-230403-C-11-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	246477

Lab Chronicle

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

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

Lab Sample ID: 380-230407-1

Date Collected: 08/10/26 11:20

Matrix: Drinking Water

Date Received: 08/12/26 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			246477	XTD8	EA POM	08/14/26 07:59
Total/NA	Analysis	533		1	246604	Y5FM	EA POM	08/14/26 18:51
Total/NA	Prep	537.1 DW			246199	G9MN	EA POM	08/13/26 01:47
Total/NA	Analysis	EPA 537.1 V2		1	246536	Y5FM	EA POM	08/14/26 14:50

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

Lab Sample ID: 380-230407-2

Date Collected: 08/10/26 11:20

Matrix: Water

Date Received: 08/12/26 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			246477	XTD8	EA POM	08/14/26 07:59
Total/NA	Analysis	533		1	246604	Y5FM	EA POM	08/14/26 19:02
Total/NA	Prep	537.1 DW			246199	G9MN	EA POM	08/13/26 01:47
Total/NA	Analysis	EPA 537.1 V2		1	246602	Y5FM	EA POM	08/15/26 00:42

Laboratory References:

EA POM = Eurofins 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: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Laboratory: Eurofins Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-26 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

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

Job ID: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
EPA 537.1 V2	EPA 537.1 Ver. 2.0 March 2020	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 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: 380-230407-1
SDG: PFAS: Aiea Gulch Wells Pump 2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-230407-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	08/10/26 11:20	08/12/26 09:50	Hawaii
380-230407-2	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	08/10/26 11:20	08/12/26 09:50	Hawaii

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

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-230407-1

SDG Number: PFAS: Aiea Gulch Wells Pump 2

Login Number: 230407

List Number: 1

Creator: Tran, Kristine

List Source: Eurofins Pomona

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