

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL
PFAS: Moanalua Wells

JOB NUMBER

380-236635-1

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
Maria Lopez, Project Manager
Maria.Lopez@et.eurofinsus.com
(626)386-1145

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Definitions/Glossary

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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: 380-236635-1

Job ID: 380-236635-1

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Job Narrative 380-236635-1

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 9/16/2026 9:47 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 1.9°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: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1

☐ No Detections.

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

Lab Sample ID: 380-236635-2

☐ 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: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1

Date Collected: 09/14/26 09:52

Matrix: Drinking Water

Date Received: 09/16/26 09:47

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		09/17/26 06:37	09/18/26 02:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C6 PFDA	116		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C5 PFHxA	104		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C4 PFHpA	104		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C8 PFOA	106		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C9 PFNA	116		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C7 PFUnA	114		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C2 PFDoA	110		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C4 PFBA	105		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C5 PFPeA	108		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C3 PFBS	97		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C3 PFHxS	95		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C8 PFOS	107		50 - 200	09/17/26 06:37	09/18/26 02:35	1

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Client Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1

Date Collected: 09/14/26 09:52

Matrix: Drinking Water

Date Received: 09/16/26 09:47

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	77		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C2-6:2-FTS	80		50 - 200	09/17/26 06:37	09/18/26 02:35	1
13C2-8:2-FTS	117		50 - 200	09/17/26 06:37	09/18/26 02:35	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		09/17/26 17:25	09/18/26 12:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 12:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			09/17/26 17:25	09/18/26 12:52	1
13C2 PFHxA	104		70 - 130			09/17/26 17:25	09/18/26 12:52	1
13C2 PFDA	111		70 - 130			09/17/26 17:25	09/18/26 12:52	1
13C3-GenX	99		70 - 130			09/17/26 17:25	09/18/26 12:52	1

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

Lab Sample ID: 380-236635-2

Date Collected: 09/14/26 09:52

Matrix: Water

Date Received: 09/16/26 09:47

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		09/17/26 06:37	09/18/26 02:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1

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Client Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-2

Date Collected: 09/14/26 09:52

Matrix: Water

Date Received: 09/16/26 09:47

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/17/26 06:37	09/18/26 02:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C6 PFDA	120		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C5 PFHxA	102		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C4 PFHpA	104		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C8 PFOA	101		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C9 PFNA	117		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C7 PFUnA	113		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C2 PFDoA	107		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C4 PFBA	105		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C5 PFPeA	110		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C3 PFBS	95		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C3 PFHxS	94		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C8 PFOS	105		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C2-4:2-FTS	83		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C2-6:2-FTS	76		50 - 200	09/17/26 06:37	09/18/26 02:49	1
13C2-8:2-FTS	111		50 - 200	09/17/26 06:37	09/18/26 02:49	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		09/17/26 17:25	09/18/26 15:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-2

Date Collected: 09/14/26 09:52

Matrix: Water

Date Received: 09/16/26 09:47

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/17/26 17:25	09/18/26 15:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130			09/17/26 17:25	09/18/26 15:05	1
13C2 PFHxA	106		70 - 130			09/17/26 17:25	09/18/26 15:05	1
13C2 PFDA	102		70 - 130			09/17/26 17:25	09/18/26 15:05	1
13C3-GenX	105		70 - 130			09/17/26 17:25	09/18/26 15:05	1

Action Limit Summary

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1

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: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-236635-2

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: 380-236635-1
SDG: PFAS: Moanalua Wells

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)
380-236635-1	MOANALUA WELLS (331-223-T	104	104	111	99
380-236635-1 MS	MOANALUA WELLS (331-223-TP202)	105	103	100	102
380-236635-1 MSD	MOANALUA WELLS (331-223-TP202)	103	98	110	100
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)
380-236635-2	FB: MOANALUA WELLS (331-2	105	106	102	105
LCS 380-253223/22-A	Lab Control Sample	100	100	117	97
MBL 380-253223/20-A	Method Blank	98	100	110	89
MRL 380-253223/21-A	Lab Control Sample	98	100	101	86
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: 380-236635-1
SDG: PFAS: Moanalua Wells

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)
380-236635-1	MOANALUA WELLS (331-223-T	105	116	104	104	106	116	114	110

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)
380-236635-1	MOANALUA WELLS (331-223-T	105	108	97	95	107	77	80	117

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)
380-236635-2	FB: MOANALUA WELLS (331-2	102	120	102	104	101	117	113	107
380-236711-B-1-A MS	Matrix Spike	112	128	108	110	109	121	125	121
380-236711-C-1-A MSD	Matrix Spike Duplicate	112	126	108	107	105	119	124	117
LCS 380-253074/22-A	Lab Control Sample	109	128	109	110	106	118	125	116
MBL 380-253074/20-A	Method Blank	96	112	95	97	95	111	106	101
MRL 380-253074/21-A	Lab Control Sample	100	120	104	100	99	118	118	113

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)
380-236635-2	FB: MOANALUA WELLS (331-2	105	110	95	94	105	83	76	111
380-236711-B-1-A MS	Matrix Spike	109	112	101	98	110	83	86	115
380-236711-C-1-A MSD	Matrix Spike Duplicate	109	112	99	93	108	84	84	113
LCS 380-253074/22-A	Lab Control Sample	99	111	100	95	106	81	87	117
MBL 380-253074/20-A	Method Blank	101	108	94	95	103	76	82	112
MRL 380-253074/21-A	Lab Control Sample	102	112	90	93	106	82	80	110

Surrogate Legend

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

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Isotope Dilution Summary

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

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

QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: MBL 380-253074/20-A

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 253074

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<0.29		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<0.30		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.24		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		09/17/26 06:37	09/17/26 23:47	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C6 PFDA	112		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C5 PFHxA	95		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C4 PFHpA	97		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C8 PFOA	95		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C9 PFNA	111		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C7 PFUnA	106		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C2 PFDoA	101		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C4 PFBA	101		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C5 PFPeA	108		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C3 PFBS	94		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C3 PFHxS	95		50 - 200	09/17/26 06:37	09/17/26 23:47	1

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QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: MBL 380-253074/20-A

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 253074

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	103		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C2-4:2-FTS	76		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C2-6:2-FTS	82		50 - 200	09/17/26 06:37	09/17/26 23:47	1
13C2-8:2-FTS	112		50 - 200	09/17/26 06:37	09/17/26 23:47	1

Lab Sample ID: LCS 380-253074/22-A

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 253074

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	118	102		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	118	110		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	118	105		ng/L		89	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	118	107		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	118	106		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	118	103		ng/L		87	70 - 130
Perfluorododecanoic acid (PFDaA)	118	110		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	118	108		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	118	106		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	118	106		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	118	109		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	118	106		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	118	111		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	118	102		ng/L		86	70 - 130
Perfluorobutanoic acid (PFBA)	118	105		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	118	108		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	118	106		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	118	97.1		ng/L		82	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	118	102		ng/L		87	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	118	107		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	118	105		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	118	108		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	118	101		ng/L		86	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	118	100		ng/L		85	70 - 130

Eurofins Pomona

QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: LCS 380-253074/22-A

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 253074

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	118	105		ng/L		89	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	109		50 - 200				
13C6 PFDA	128		50 - 200				
13C5 PFHxA	109		50 - 200				
13C4 PFHpA	110		50 - 200				
13C8 PFOA	106		50 - 200				
13C9 PFNA	118		50 - 200				
13C7 PFUnA	125		50 - 200				
13C2 PFDoA	116		50 - 200				
13C4 PFBA	99		50 - 200				
13C5 PFPeA	111		50 - 200				
13C3 PFBS	100		50 - 200				
13C3 PFHxS	95		50 - 200				
13C8 PFOS	106		50 - 200				
13C2-4:2-FTS	81		50 - 200				
13C2-6:2-FTS	87		50 - 200				
13C2-8:2-FTS	117		50 - 200				

Lab Sample ID: MRL 380-253074/21-A

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 253074

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	1.84	J	ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	1.97	1.92	J	ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	2.01	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	1.91	J	ng/L		97	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	1.95	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	1.97	J	ng/L		100	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	1.89	J	ng/L		96	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	2.03	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.89	J	ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	1.85	J	ng/L		94	50 - 150
Perfluorononanoic acid (PFNA)	1.97	1.86	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	2.05	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.17	J	ng/L		110	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	1.85	J	ng/L		94	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	1.91	J	ng/L		97	50 - 150

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QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: MRL 380-253074/21-A

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 253074

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.10	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	1.95	J	ng/L		99	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.16	J	ng/L		110	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	1.95	J	ng/L		99	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.97	1.93	J	ng/L		98	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	1.81	J	ng/L		92	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	1.87	J	ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	1.89	J	ng/L		96	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.76	J	ng/L		90	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.83	J	ng/L		93	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	100		50 - 200
13C6 PFDA	120		50 - 200
13C5 PFHxA	104		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	118		50 - 200
13C7 PFUnA	118		50 - 200
13C2 PFDoA	113		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	90		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	82		50 - 200
13C2-6:2-FTS	80		50 - 200
13C2-8:2-FTS	110		50 - 200

Lab Sample ID: 380-236711-B-1-A MS

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 253074

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		118	99.2		ng/L		84	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		118	108		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	110		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236711-B-1-A MS

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 253074

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		118	109		ng/L		92	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	108		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		118	102		ng/L		86	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		118	107		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	4.6		118	115		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	9.0		118	111		ng/L		86	70 - 130
Perfluorohexanoic acid (PFHxA)	5.8		118	116		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		118	109		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	41		118	144		ng/L		88	70 - 130
Perfluorooctanoic acid (PFOA)	14		118	122		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		118	106		ng/L		90	70 - 130
Perfluorobutanoic acid (PFBA)	2.3		118	110		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	115		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	108		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	104		ng/L		88	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		118	107		ng/L		90	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		118	108		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	107		ng/L		90	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	107		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	7.5		118	112		ng/L		88	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	96.0		ng/L		81	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	104		ng/L		87	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C3 HFPO-DA	112		50 - 200
13C6 PFDA	128		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	109		50 - 200
13C9 PFNA	121		50 - 200
13C7 PFUnA	125		50 - 200
13C2 PFDoA	121		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	98		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: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236711-B-1-A MS

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 253074

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	83		50 - 200
13C2-6:2-FTS	86		50 - 200
13C2-8:2-FTS	115		50 - 200

Lab Sample ID: 380-236711-C-1-A MSD

Matrix: Water

Analysis Batch: 253196

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 253074

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		118	104		ng/L		88	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		118	106		ng/L		90	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		118	113		ng/L		95	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		118	109		ng/L		92	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		118	111		ng/L		93	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		118	112		ng/L		94	70 - 130	10	30
Perfluorododecanoic acid (PFDaA)	<2.0		118	111		ng/L		94	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	4.6		118	117		ng/L		95	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	9.0		118	120		ng/L		94	70 - 130	8	30
Perfluorohexanoic acid (PFHxA)	5.8		118	115		ng/L		92	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		118	112		ng/L		94	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	41		118	151		ng/L		93	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	14		118	126		ng/L		95	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		118	107		ng/L		90	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	2.3		118	110		ng/L		91	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		118	118		ng/L		100	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		118	106		ng/L		90	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		118	107		ng/L		90	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		118	110		ng/L		93	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		118	106		ng/L		90	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		118	108		ng/L		91	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		118	110		ng/L		93	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	7.5		118	117		ng/L		92	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		118	99.3		ng/L		83	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		118	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: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	112		50 - 200
13C6 PFDA	126		50 - 200
13C5 PFHxA	108		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	119		50 - 200
13C7 PFUnA	124		50 - 200
13C2 PFDoA	117		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	84		50 - 200
13C2-6:2-FTS	84		50 - 200
13C2-8:2-FTS	113		50 - 200

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

Lab Sample ID: MBL 380-253223/20-A
Matrix: Water
Analysis Batch: 253357

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253223

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		09/17/26 17:25	09/18/26 12:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Perfluorotridecanoic acid (PFTrDA)	<0.35		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		09/17/26 17:25	09/18/26 12:23	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130			09/17/26 17:25	09/18/26 12:23	1
13C2 PFHxA	100		70 - 130			09/17/26 17:25	09/18/26 12:23	1
13C2 PFDA	110		70 - 130			09/17/26 17:25	09/18/26 12:23	1

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QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: MBL 380-253223/20-A

Matrix: Water

Analysis Batch: 253357

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 253223

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	89		70 - 130	09/17/26 17:25	09/18/26 12:23	1

Lab Sample ID: LCS 380-253223/22-A

Matrix: Water

Analysis Batch: 253357

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 253223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	49.0	41.0		ng/L		84	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	49.0	47.1		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.0	48.4		ng/L		99	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.0	46.0		ng/L		94	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.0	44.7		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	49.0	47.5		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	49.0	48.7		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	49.0	47.4		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	49.0	51.8		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.0	47.7		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.0	46.6		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.0	47.4		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	49.0	49.2		ng/L		100	70 - 130
Perfluorotetradecanoic acid (PFTA)	49.0	50.8		ng/L		104	70 - 130
Perfluorotridecanoic acid (PFTrDA)	49.0	47.7		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	49.0	47.3		ng/L		96	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.0	46.2		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.0	44.9		ng/L		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	100		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	97		70 - 130

QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: MRL 380-253223/21-A

Matrix: Water

Analysis Batch: 253357

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 253223

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	1.76	J	ng/L		90	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	2.11	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.05	J	ng/L		105	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	1.90	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	1.89	J	ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	1.91	J	ng/L		97	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	2.12	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	1.79	J	ng/L		91	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	1.95	J	ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	2.01	J	ng/L		102	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.09	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	2.02	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.09	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	2.01	J	ng/L		102	50 - 150
Perfluorotridecanoic acid (PFTrDA)	1.96	1.93	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	1.97	J	ng/L		101	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.89	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.87	J	ng/L		96	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	98		70 - 130
13C2 PFHxA	100		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	86		70 - 130

Lab Sample ID: 380-236635-1 MS

Matrix: Drinking Water

Analysis Batch: 253357

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

Prep Type: Total/NA

Prep Batch: 253223

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		49.2	46.0		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.2	51.6		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		49.2	49.2		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.2	48.4		ng/L		98	70 - 130

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QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1 MS

Matrix: Drinking Water

Analysis Batch: 253357

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

Prep Type: Total/NA

Prep Batch: 253223

Sample Data									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.2	48.3		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		49.2	50.7		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		49.2	50.4		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		49.2	49.3		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		49.2	49.3		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.2	51.8		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.2	51.0		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		49.2	48.9		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		49.2	50.2		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		49.2	48.9		ng/L		99	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.2	48.5		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.2	49.8		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.2	49.2		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.2	46.9		ng/L		95	70 - 130
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
d5-NEtFOSAA	105		70 - 130						
13C2 PFHxA	103		70 - 130						
13C2 PFDA	100		70 - 130						
13C3-GenX	102		70 - 130						

Lab Sample ID: 380-236635-1 MSD

Matrix: Drinking Water

Analysis Batch: 253357

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

Prep Type: Total/NA

Prep Batch: 253223

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		49.1	45.9		ng/L		93	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		49.1	52.0		ng/L		103	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		49.1	47.2		ng/L		96	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.1	49.0		ng/L		100	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.1	48.4		ng/L		99	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		49.1	49.4		ng/L		98	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		49.1	49.1		ng/L		100	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		49.1	49.1		ng/L		98	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		49.1	52.3		ng/L		106	70 - 130	6	30

Eurofins Pomona

QC Sample Results

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1 MSD

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

Matrix: Drinking Water

Prep Type: Total/NA

Analysis Batch: 253357

Prep Batch: 253223

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		49.1	51.0		ng/L		100	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		49.1	50.8		ng/L		102	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		49.1	48.7		ng/L		98	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		49.1	48.8		ng/L		99	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		49.1	45.4		ng/L		93	70 - 130	7	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		49.1	46.6		ng/L		95	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.1	49.5		ng/L		101	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.1	48.0		ng/L		98	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.1	47.7		ng/L		97	70 - 130	2	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	103		70 - 130								
13C2 PFHxA	98		70 - 130								
13C2 PFDA	110		70 - 130								
13C3-GenX	100		70 - 130								

QC Association Summary

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

LCMS

Prep Batch: 253074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-236635-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	
380-236635-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	533	
MBL 380-253074/20-A	Method Blank	Total/NA	Water	533	
LCS 380-253074/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-253074/21-A	Lab Control Sample	Total/NA	Water	533	
380-236711-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-236711-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 253196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-236635-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	253074
380-236635-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	533	253074
MBL 380-253074/20-A	Method Blank	Total/NA	Water	533	253074
LCS 380-253074/22-A	Lab Control Sample	Total/NA	Water	533	253074
MRL 380-253074/21-A	Lab Control Sample	Total/NA	Water	533	253074
380-236711-B-1-A MS	Matrix Spike	Total/NA	Water	533	253074
380-236711-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	253074

Prep Batch: 253223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-236635-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-236635-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	537.1 DW	
MBL 380-253223/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-253223/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-253223/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-236635-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
380-236635-1 MSD	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 253357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-236635-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA 537.1 V2	253223
380-236635-2	FB: MOANALUA WELLS (331-223-TP202)	Total/NA	Water	EPA 537.1 V2	253223
MBL 380-253223/20-A	Method Blank	Total/NA	Water	EPA 537.1 V2	253223
LCS 380-253223/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	253223
MRL 380-253223/21-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	253223
380-236635-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA 537.1 V2	253223
380-236635-1 MSD	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA 537.1 V2	253223

Lab Chronicle

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

Job ID: 380-236635-1
SDG: PFAS: Moanalua Wells

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

Lab Sample ID: 380-236635-1

Date Collected: 09/14/26 09:52

Matrix: Drinking Water

Date Received: 09/16/26 09:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			253074	XTD8	EA POM	09/17/26 06:37
Total/NA	Analysis	533		1	253196	UKDT	EA POM	09/18/26 02:35
Total/NA	Prep	537.1 DW			253223	E2HD	EA POM	09/17/26 17:25
Total/NA	Analysis	EPA 537.1 V2		1	253357	Y5FM	EA POM	09/18/26 12:52

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

Lab Sample ID: 380-236635-2

Date Collected: 09/14/26 09:52

Matrix: Water

Date Received: 09/16/26 09:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			253074	XTD8	EA POM	09/17/26 06:37
Total/NA	Analysis	533		1	253196	UKDT	EA POM	09/18/26 02:49
Total/NA	Prep	537.1 DW			253223	E2HD	EA POM	09/17/26 17:25
Total/NA	Analysis	EPA 537.1 V2		1	253357	Y5FM	EA POM	09/18/26 15:05

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: 380-236635-1
SDG: PFAS: Moanalua Wells

Laboratory: Eurofins Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-27

- 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: 380-236635-1
SDG: PFAS: Moanalua Wells

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: 380-236635-1
SDG: PFAS: Moanalua Wells

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-236635-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	09/14/26 09:52	09/16/26 09:47	Hawaii
380-236635-2	FB: MOANALUA WELLS (331-223-TP202)	Water	09/14/26 09:52	09/16/26 09:47	Hawaii

Chain of Custody Record



380-236635 COC

Client Information		Sampler bailey	Lab PM: Lopez, Maria	Carrier Tracking No(s):	COC No:										
Client Contact: Kirk Iwamoto		Phone: +1 808 748 5840	E-Mail: Maria.Lopez@et.eurofinsus.com	State of Origin:	Page: 1 of 1										
City & County of Honolulu		PWSID:													
Analysis Requested															
Due Date Requested:															
TAT Requested (days):															
Compliance Project: Δ No															
PO #: C20525101 exp 05312023															
WO #:															
Project #: 38001111															
SSOW#:															
Address: 630 South Beretania Street, Chemistry Lab Honolulu Hawaii, Zip: HI, 96843															
Phone: 808-748-5840 (tel)															
Email: kiwamotok@hbws.org															
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill															
Site:															
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Weather, Specific, On-site/ Off-site) (BT-Tissue, Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform HPLC/MSD (Yes or No)	SUBCONTRACT - 626 PAH Physile LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_ORO_LL_C8 - HNL Ranges: C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525plus PLUS TICs	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of Containers	Special Instructions/Note:
Moanalua Wells (331-223-TP202)	14-Sep-2026	0952	G	Water		X	X								chlorinated
FB: Moanalua Wells (331-223-TP202)	14-Sep-2026	0952											1 1		
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological															
Deliverable Requested: i, II, III, IV, Other (specify)															
Empty Kit Relinquished by															
Date/Time:	15500.2026	1400	Company HBWS	Date/Time:	Received by	Method of Shipment:	877257489985	Date/Time:	9/16/26	947	Company	ETAP			
Date/Time:			Company	Date/Time:	Received by			Date/Time:			Company				
Date/Time:			Company	Date/Time:	Received by			Date/Time:			Company				
Custody Seal No.: A Yes A No A Yes A No															

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-236635-1
SDG Number: PFAS: Moanalua Wells

Login Number: 236635

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	