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ANALYTICAL REPORT

PREPARED FOR

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

Generated 9/30/2025 5:36:00 PM

JOB DESCRIPTION

RED-HILL
PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1
RUSH Weekly Red Hill

JOB NUMBER

380-173542-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization

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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

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

Job Narrative
380-173542-1

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 9/25/2025 10:05 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 2.9°C.

PFAS
PFAS results by 533 for HALAWA WELLS UNITS 1 & 2 P1 (380-173542-2) collected on 09/23/25 is a resample for for HALAWA WELLS UNITS 1 & 2 P1 (331-206-TP065) (380-171937-2) collected on 09/15/25. (XWB4)

EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results (MOANALUA WELLS (380-173542-1))

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

Detection Summary

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-173542-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
PWSID Number: HI0000331

Lab Sample ID: 380-173542-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0		ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.2		2.0		ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0		ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0		ng/L	1		537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-173542-3

No Detections.

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
PWSID Number: HI0000331

Lab Sample ID: 380-173542-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MOANALUA WELLS
Date Collected: 09/23/25 09:47
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 11:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*109*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C6 PFDA	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C5 PFHxA	*118*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C4 PFHpA	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C8 PFOA	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C9 PFNA	*119*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C7 PFUnA	*116*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C2 PFDoA	*117*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C4 PFBA	*109*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C5 PFPeA	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C3 PFBS	*118*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C3 PFHxS	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C8 PFOS	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-173542-1
Date Collected: 09/23/25 09:47
Matrix: Drinking Water
Date Received: 09/25/25 10:05
PWSID Number: HI0000331

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2-4:2-FTS	*131*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C2-6:2-FTS	*120*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*
13C2-8:2-FTS	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 11:52*	*1*

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/28/25 09:43	09/29/25 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*114*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:05*	*1*
13C2 PFHxA	*112*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:05*	*1*
13C2 PFDA	*112*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:05*	*1*
13C3-GenX	*106*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:05*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-173542-2
Date Collected: 09/23/25 10:13
Matrix: Drinking Water
Date Received: 09/25/25 10:05
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/29/25 18:20	09/30/25 12:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/29/25 18:20	09/30/25 12:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/29/25 18:20	09/30/25 12:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/29/25 18:20	09/30/25 12:02	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 09/23/25 10:13
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-2

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorohexanesulfonic acid (PFHxS)	**2.5**		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorooctanesulfonic acid (PFOS)	**2.2**		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoropentanoic acid (PFPeA)	**2.2**		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*103*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C6 PFDA	*114*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C5 PFHxA	*110*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C4 PFHpA	*108*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C8 PFOA	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C9 PFNA	*117*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C7 PFUnA	*116*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C2 PFDoA	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C4 PFBA	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C5 PFPeA	*114*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C3 PFBS	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C3 PFHxS	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C8 PFOS	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C2-4:2-FTS	*128*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C2-6:2-FTS	*123*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*
13C2-8:2-FTS	*120*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:02*	*1*

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Date Collected: 09/23/25 10:13
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-2

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorohexanesulfonic acid (PFHxS)	**2.8**		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:15*	*1*
13C2 PFHxA	*119*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:15*	*1*
13C2 PFDA	*115*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:15*	*1*
13C3-GenX	*105*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:15*	*1*

Client Sample ID: FB: MOANALUA WELLS

Date Collected: 09/23/25 09:47
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-3

Matrix: Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1

Client Sample ID: FB: MOANALUA WELLS

Date Collected: 09/23/25 09:47
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-3

Matrix: Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*99*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C6 PFDA	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C5 PFHxA	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C4 PFHpA	*109*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C8 PFOA	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C9 PFNA	*116*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C7 PFUnA	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C2 PFDoA	*109*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C4 PFBA	*117*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C5 PFPeA	*120*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C3 PFBS	*118*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C3 PFHxS	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C8 PFOS	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C2-4:2-FTS	*120*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C2-6:2-FTS	*119*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*
13C2-8:2-FTS	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:13*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-173542-3
Date Collected: 09/23/25 09:47
Matrix: Water
Date Received: 09/25/25 10:05
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*104*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:24*	*1*
13C2 PFHxA	*112*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:24*	*1*
13C2 PFDA	*108*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:24*	*1*
13C3-GenX	*102*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:24*	*1*

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

Lab Sample ID: 380-173542-4
Date Collected: 09/23/25 10:13
Matrix: Water
Date Received: 09/25/25 10:05
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
Date Collected: 09/23/25 10:13
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-4
Matrix: Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	2 0		2 0		ng/L		09/29/25 18 20	09/30/25 12 24	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		09/29/25 18:20	09/30/25 12:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*100*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C6 PFDA	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C5 PFHxA	*110*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C4 PFHpA	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C8 PFOA	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C9 PFNA	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C7 PFUnA	*119*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C2 PFDoA	*116*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C4 PFBA	*115*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C5 PFPeA	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C3 PFBS	*116*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C3 PFHxS	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C8 PFOS	*108*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C2-4:2-FTS	*121*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C2-6:2-FTS	*119*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*
13C2-8:2-FTS	*110*		*50 - 200*	*09/29/25 18:20*	*09/30/25 12:24*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
Date Collected: 09/23/25 10:13
Date Received: 09/25/25 10:05

Lab Sample ID: 380-173542-4
Matrix: Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		09/28/25 09:43	09/29/25 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*110*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:34*	*1*
13C2 PFHxA	*109*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:34*	*1*
13C2 PFDA	*108*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:34*	*1*
13C3-GenX	*101*		*70 - 130*	*09/28/25 09:43*	*09/29/25 15:34*	*1*

Action Limit Summary

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Client Sample ID: MOANALUA WELLS
Lab Sample ID: 380-173542-1
PWSID Number: HI0000331

Compliance Check

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

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

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
Lab Sample ID: 380-173542-2
PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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)	2.5		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: MOANALUA WELLS
Lab Sample ID: 380-173542-3
PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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

Action Limit Summary

Client: City & County of Honolulu
Job ID: 380-173542-1
Project/Site: RED-HILL
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Client Sample ID: FB: MOANALUA WELLS (Continued)
Lab Sample ID: 380-173542-3
PWSID Number: HI0000331

Compliance Check

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

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

Client Sample ID: FB: HALAWA WELLS UNITS 1 & 2
Lab Sample ID: 380-173542-4
PWSID Number: HI0000331

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-173542-1	MOANALUA WELLS	114	112	112	106
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	106	119	115	105

Surrogate Legend

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

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-173542-3	FB: MOANALUA WELLS	104	112	108	102
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	110	109	108	101
380-173550-B-1-A MS	Matrix Spike	107	113	107	107
380-173550-C-1-A MSD	Matrix Spike Duplicate	105	109	108	102
LCS 380-176651/24-A	Lab Control Sample	99	104	108	97
MBL 380-176651/22-A	Method Blank	126	126	123	119
MRL 380-176651/23-A	Lab Control Sample	112	116	111	107

Surrogate Legend

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

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-173542-1
Project/Site: RED-HILL
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

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)	PFDoA (50-200)
380-173542-1	MOANALUA WELLS	109	115	118	113	113	119	116	117
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	103	114	110	108	115	117	116	115

		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)
380-173542-1	MOANALUA WELLS	109	113	118	111	111	131	120	113
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	111	114	115	112	113	128	123	120

Surrogate Legend

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

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)	PFDoA (50-200)
380-173542-3	FB: MOANALUA WELLS	99	112	113	109	115	116	111	109
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	100	112	110	111	113	115	119	116
380-173552-B-1-A MS	Matrix Spike	108	114	109	109	114	112	113	111
380-173552-B-1-B MSD	Matrix Spike Duplicate	102	111	104	106	110	112	106	111
LCS 380-176923/22-A	Lab Control Sample	114	117	122	118	114	116	117	114
MBL 380-176923/20-A	Method Blank	102	110	103	105	109	106	106	106
MRL 380-176923/21-A	Lab Control Sample	94	108	107	105	108	109	106	104

		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)
380-173542-3	FB: MOANALUA WELLS	117	120	118	112	112	120	119	111
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	115	112	116	112	108	121	119	110
380-173552-B-1-A MS	Matrix Spike	112	114	108	106	108	116	111	109
380-173552-B-1-B MSD	Matrix Spike Duplicate	114	108	106	111	112	120	127	110
LCS 380-176923/22-A	Lab Control Sample	113	117	121	118	110	127	116	114

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-173542-1
Project/Site: RED-HILL
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

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

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
MBL 380-176923/20-A	Method Blank	108	111	113	112	105	117	111	110
MRL 380-176923/21-A	Lab Control Sample	111	113	108	112	113	117	118	113

Surrogate Legend

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

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

Lab Sample ID: MBL 380-176923/20-A
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 176923

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		09/29/25 18:20	09/30/25 10:26	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*102*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C6 PFDA	*110*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C5 PFHxA	*103*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C4 PFHpA	*105*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C8 PFOA	*109*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C9 PFNA	*106*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C7 PFUnA	*106*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C2 PFDoA	*106*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C4 PFBA	*108*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C5 PFPeA	*111*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C3 PFBS	*113*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*
13C3 PFHxS	*112*		*50 - 200*	*09/29/25 18:20*	*09/30/25 10:26*	*1*

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

Lab Sample ID: MBL 380-176923/20-A
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 176923

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	09/29/25 18:20	09/30/25 10:26	1
13C2-4:2-FTS	117		50 - 200	09/29/25 18:20	09/30/25 10:26	1
13C2-6:2-FTS	111		50 - 200	09/29/25 18:20	09/30/25 10:26	1
13C2-8:2-FTS	110		50 - 200	09/29/25 18:20	09/30/25 10:26	1

Lab Sample ID: LCS 380-176923/22-A
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.4	60.2		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.4	61.7		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.4	59.6		ng/L		99	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.4	62.5		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.4	58.4		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	60.4	57.8		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	60.4	59.1		ng/L		98	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.4	59.9		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.4	60.0		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	60.4	57.1		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	60.4	57.9		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.4	60.2		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	60.4	58.8		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.4	58.0		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	60.4	59.1		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.4	61.7		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.4	58.4		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.4	58.4		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.4	57.9		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.4	59.6		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.4	58.5		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.4	55.5		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	60.4	58.6		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.4	60.3		ng/L		100	70 - 130

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

Lab Sample ID: LCS 380-176923/22-A
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176923

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoropentanesulfonic acid (PFPeS)			60.4	57.9		ng/L		96	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*114*		*50 - 200*
13C6 PFDA	*117*		*50 - 200*
13C5 PFHxA	*122*		*50 - 200*
13C4 PFHpA	*118*		*50 - 200*
13C8 PFOA	*114*		*50 - 200*
13C9 PFNA	*116*		*50 - 200*
13C7 PFUnA	*117*		*50 - 200*
13C2 PFDoA	*114*		*50 - 200*
13C4 PFBA	*113*		*50 - 200*
13C5 PFPeA	*117*		*50 - 200*
13C3 PFBS	*121*		*50 - 200*
13C3 PFHxS	*118*		*50 - 200*
13C8 PFOS	*110*		*50 - 200*
13C2-4:2-FTS	*127*		*50 - 200*
13C2-6:2-FTS	*116*		*50 - 200*
13C2-8:2-FTS	*114*		*50 - 200*

Lab Sample ID: MRL 380-176923/21-A
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176923

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)			2.02	1.97	J	ng/L		98	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)			2.02	1.93	J	ng/L		96	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			2.02	1.87	J	ng/L		93	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)			2.02	2.12	J	ng/L		105	50 - 150		
Perfluorobutanesulfonic acid (PFBS)			2.02	2.10	J	ng/L		104	50 - 150		
Perfluorodecanoic acid (PFDA)			2.02	1.92	J	ng/L		95	50 - 150		
Perfluorododecanoic acid (PFDoA)			2.02	2.05	J	ng/L		101	50 - 150		
Perfluoroheptanoic acid (PFHpA)			2.02	2.11	J	ng/L		105	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)			2.02	2.05	J	ng/L		102	50 - 150		
Perfluorohexanoic acid (PFHxA)			2.02	1.92	J	ng/L		95	50 - 150		
Perfluorononanoic acid (PFNA)			2.02	1.95	J	ng/L		97	50 - 150		
Perfluorooctanesulfonic acid (PFOS)			2.02	2.10	J	ng/L		104	50 - 150		
Perfluorooctanoic acid (PFOA)			2.02	1.96	J	ng/L		97	50 - 150		
Perfluoroundecanoic acid (PFUnA)			2.02	2.01	J	ng/L		100	50 - 150		
Perfluorobutanoic acid (PFBA)			2.02	2.18	J	ng/L		108	50 - 150		

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

Lab Sample ID: MRL 380-176923/21-A
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176923

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.02	2.04	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.02	2.05	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.02	2.14	J	ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.02	1.96	J	ng/L		97	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.02	2.08	J	ng/L		103	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.02	2.03	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.02	1.93	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.02	2.11	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.02	1.99	J	ng/L		99	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.02	2.06	J	ng/L		102	50 - 150

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*94*		*50 - 200*
13C6 PFDA	*108*		*50 - 200*
13C5 PFHxA	*107*		*50 - 200*
13C4 PFHpA	*105*		*50 - 200*
13C8 PFOA	*108*		*50 - 200*
13C9 PFNA	*109*		*50 - 200*
13C7 PFUnA	*106*		*50 - 200*
13C2 PFDoA	*104*		*50 - 200*
13C4 PFBA	*111*		*50 - 200*
13C5 PFPeA	*113*		*50 - 200*
13C3 PFBS	*108*		*50 - 200*
13C3 PFHxS	*112*		*50 - 200*
13C8 PFOS	*113*		*50 - 200*
13C2-4:2-FTS	*117*		*50 - 200*
13C2-6:2-FTS	*118*		*50 - 200*
13C2-8:2-FTS	*113*		*50 - 200*

Lab Sample ID: 380-173552-B-1-A MS
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 176923

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.5	57.5		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.5	61.5		ng/L		102	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.5	58.2		ng/L		96	70 - 130

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

Lab Sample ID: 380-173552-B-1-A MS
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 176923

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		60.5	60.5		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.5	60.8		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.5	57.8		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.5	57.8		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.5	58.3		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.5	61.6		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.5	60.1		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.5	58.8		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.4		60.5	60.6		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.5	57.4		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.5	56.6		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.5	58.4		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.5	58.0		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.5	58.3		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.5	60.0		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.5	60.4		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.5	60.6		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.5	57.9		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.5	55.5		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.5	57.3		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.5	59.8		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.5	58.0		ng/L		96	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*108*		*50 - 200*
13C6 PFDA	*114*		*50 - 200*
13C5 PFHxA	*109*		*50 - 200*
13C4 PFHpA	*109*		*50 - 200*
13C8 PFOA	*114*		*50 - 200*
13C9 PFNA	*112*		*50 - 200*
13C7 PFUnA	*113*		*50 - 200*
13C2 PFDoA	*111*		*50 - 200*
13C4 PFBA	*112*		*50 - 200*
13C5 PFPeA	*114*		*50 - 200*
13C3 PFBS	*108*		*50 - 200*
13C3 PFHxS	*106*		*50 - 200*
13C8 PFOS	*108*		*50 - 200*

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

Lab Sample ID: 380-173552-B-1-A MS
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 176923

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	109		50 - 200

Lab Sample ID: 380-173552-B-1-B MSD
Matrix: Water
Analysis Batch: 177003

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 176923

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		60.2	57.4		ng/L		95	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	60.5		ng/L		100	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	59.0		ng/L		98	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	59.9		ng/L		99	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	61.3		ng/L		101	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	54.5		ng/L		90	70 - 130	6	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	56.0		ng/L		93	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	59.9		ng/L		99	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	62.5		ng/L		102	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	60.6		ng/L		100	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	57.2		ng/L		95	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	2.4		60.2	61.8		ng/L		99	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.1		ng/L		98	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	59.3		ng/L		98	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	58.5		ng/L		97	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	61.6		ng/L		102	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	60.4		ng/L		100	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	59.7		ng/L		99	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	60.1		ng/L		100	70 - 130	0	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	60.2		ng/L		100	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	59.1		ng/L		98	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	60.1		ng/L		100	70 - 130	8	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	61.9		ng/L		102	70 - 130	8	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	59.3		ng/L		98	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	56.9		ng/L		95	70 - 130	2	30

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	104		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	110		50 - 200
13C9 PFNA	112		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	111		50 - 200
13C8 PFOS	112		50 - 200
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	127		50 - 200
13C2-8:2-FTS	110		50 - 200

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

Lab Sample ID: MBL 380-176651/22-A
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 176651

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		09/28/25 09:43	09/29/25 12:16	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	126		70 - 130	09/28/25 09:43	09/29/25 12:16	1
13C2 PFHxA	126		70 - 130	09/28/25 09:43	09/29/25 12:16	1
13C2 PFDA	123		70 - 130	09/28/25 09:43	09/29/25 12:16	1

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

Lab Sample ID: MBL 380-176651/22-A
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 176651

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	119		70 - 130	09/28/25 09:43	09/29/25 12:16	1

Lab Sample ID: LCS 380-176651/24-A
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176651

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.3	42.9		ng/L		85	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.3	49.3		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.3	48.3		ng/L		96	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.3	46.3		ng/L		92	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.3	45.4		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	50.3	45.3		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	50.3	48.0		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	50.3	48.5		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	50.3	49.5		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.3	51.0		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.3	50.2		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.3	48.3		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	50.3	49.1		ng/L		98	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.3	46.2		ng/L		92	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.3	48.4		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.3	49.7		ng/L		99	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.3	48.9		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.3	45.6		ng/L		91	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	97		70 - 130

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

Lab Sample ID: MRL 380-176651/23-A
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176651

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.31	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.24	J	ng/L		112	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.24	J	ng/L		112	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.51	J	ng/L		125	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.33	J	ng/L		116	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.29	J	ng/L		114	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.34	J	ng/L		117	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.15	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.26	J	ng/L		113	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*112*		*70 - 130*
13C2 PFHxA	*116*		*70 - 130*
13C2 PFDA	*111*		*70 - 130*
13C3-GenX	*107*		*70 - 130*

Lab Sample ID: 380-173550-B-1-A MS
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 176651

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		50.2	47.7		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.4		50.2	51.6		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	48.5		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	47.6		ng/L		95	70 - 130

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

Lab Sample ID: 380-173550-B-1-A MS
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 176651

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.2		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	49.4		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	47.4		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	50.1		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	49.3		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.8		50.2	53.8		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	50.2		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	48.9		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	49.3		ng/L		98	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	43.8		ng/L		87	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	48.3		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	49.0		ng/L		98	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	48.0		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	48.0		ng/L		96	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
d5-NEtFOSAA	*107*		*70 - 130*
13C2 PFHxA	*113*		*70 - 130*
13C2 PFDA	*107*		*70 - 130*
13C3-GenX	*107*		*70 - 130*

Lab Sample ID: 380-173550-C-1-A MSD
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 176651

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		50.2	46.0		ng/L		92	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	3.4		50.2	53.7		ng/L		100	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.8		ng/L		99	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	47.2		ng/L		94	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	47.7		ng/L		95	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	49.2		ng/L		95	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	48.6		ng/L		97	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.3		ng/L		100	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	49.8		ng/L		99	70 - 130	1	30

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

Lab Sample ID: 380-173550-C-1-A MSD
Matrix: Water
Analysis Batch: 176796

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 176651

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	3.8		50.2	54.4		ng/L		101	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	51.6		ng/L		102	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	50.1		ng/L		99	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	50.4		ng/L		100	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	45.3		ng/L		90	70 - 130	3	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	49.1		ng/L		98	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	50.0		ng/L		100	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	48.5		ng/L		97	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	47.2		ng/L		94	70 - 130	2	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*105*		*70 - 130*
13C2 PFHxA	*109*		*70 - 130*
13C2 PFDA	*108*		*70 - 130*
13C3-GenX	*102*		*70 - 130*

LCMS

Prep Batch: 176651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-173542-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-173542-3	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1 DW	
MBL 380-176651/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-176651/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-176651/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-173550-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-173550-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 176796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-173542-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	176651
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	176651
380-173542-3	FB: MOANALUA WELLS	Total/NA	Water	537.1	176651
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1	176651
MBL 380-176651/22-A	Method Blank	Total/NA	Water	537.1	176651
LCS 380-176651/24-A	Lab Control Sample	Total/NA	Water	537.1	176651
MRL 380-176651/23-A	Lab Control Sample	Total/NA	Water	537.1	176651
380-173550-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	176651
380-173550-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	176651

Prep Batch: 176923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-173542-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	
380-173542-3	FB: MOANALUA WELLS	Total/NA	Water	533	
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	
MBL 380-176923/20-A	Method Blank	Total/NA	Water	533	
LCS 380-176923/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-176923/21-A	Lab Control Sample	Total/NA	Water	533	
380-173552-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-173552-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 177003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-173542-1	MOANALUA WELLS	Total/NA	Drinking Water	533	176923
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	176923
380-173542-3	FB: MOANALUA WELLS	Total/NA	Water	533	176923
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	176923
MBL 380-176923/20-A	Method Blank	Total/NA	Water	533	176923
LCS 380-176923/22-A	Lab Control Sample	Total/NA	Water	533	176923
MRL 380-176923/21-A	Lab Control Sample	Total/NA	Water	533	176923
380-173552-B-1-A MS	Matrix Spike	Total/NA	Water	533	176923
380-173552-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	533	176923

Lab Chronicle

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-173542-1
Matrix: Drinking Water
Date Collected: 09/23/25 09:47
Date Received: 09/25/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			176923	E2HD	EA POM	09/29/25 18:20
Total/NA	Analysis	533		1	177003	M7ML	EA POM	09/30/25 11:52
Total/NA	Prep	537.1 DW			176651	E9PK	EA POM	09/28/25 09:43
Total/NA	Analysis	537.1		1	176796	M7ML	EA POM	09/29/25 15:05

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-173542-2
Matrix: Drinking Water
Date Collected: 09/23/25 10:13
Date Received: 09/25/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			176923	E2HD	EA POM	09/29/25 18:20
Total/NA	Analysis	533		1	177003	M7ML	EA POM	09/30/25 12:02
Total/NA	Prep	537.1 DW			176651	E9PK	EA POM	09/28/25 09:43
Total/NA	Analysis	537.1		1	176796	M7ML	EA POM	09/29/25 15:15

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-173542-3
Matrix: Water
Date Collected: 09/23/25 09:47
Date Received: 09/25/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			176923	E2HD	EA POM	09/29/25 18:20
Total/NA	Analysis	533		1	177003	M7ML	EA POM	09/30/25 12:13
Total/NA	Prep	537.1 DW			176651	E9PK	EA POM	09/28/25 09:43
Total/NA	Analysis	537.1		1	176796	M7ML	EA POM	09/29/25 15:24

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

Lab Sample ID: 380-173542-4
Matrix: Water
Date Collected: 09/23/25 10:13
Date Received: 09/25/25 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			176923	E2HD	EA POM	09/29/25 18:20
Total/NA	Analysis	533		1	177003	M7ML	EA POM	09/30/25 12:24
Total/NA	Prep	537.1 DW			176651	E9PK	EA POM	09/28/25 09:43
Total/NA	Analysis	537.1		1	176796	M7ML	EA POM	09/29/25 15:34

Laboratory References:

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

Accreditation/Certification Summary

Client: City & County of Honolulu
Job ID: 380-173542-1
Project/Site: RED-HILL
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

Method Summary

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-173542-1
SDG: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-173542-1	MOANALUA WELLS	Drinking Water	09/23/25 09:47	09/25/25 10:05	HI0000331
380-173542-2	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	09/23/25 10:13	09/25/25 10:05	HI0000331
380-173542-3	FB: MOANALUA WELLS	Water	09/23/25 09:47	09/25/25 10:05	HI0000331
380-173542-4	FB: HALAWA WELLS UNITS 1 & 2	Water	09/23/25 10:13	09/25/25 10:05	HI0000331

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: bailey	Lab PM: Lopez, Maria	380-173542 COC	Carrier Tracking No(s):	COC No: 380-27941-2757 2
Client Contact: kirk Iwamoto	Phone: +1 808 748 5840	E-Mail: Maria.Lopez@et.eurofinsus.com		State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:	Analysis Requested			Job #:
Address: 630 South Beretania Street; Chemistry Lab	Due Date Requested:				Preservation Codes:
City: Honolulu	TAT Requested (days):				
State, Zip: HI 96843	Compliance Project: Δ No				
Phone: 808-748-5840 (tel)	PO #: C20525101 exp 05312023				
Email: kiwamoto@hbws.org	WO #:				
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111				
Site:	SSOW#:				

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	8015B_GRO_LL - (MOD) GRO	8015B_DRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8-C18	525.2_PREC (MOD) 525plus PLUS TICs	537 1_DW_PREC 537 1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note
				Preservation Code:	X	X	R	A	Q	QA	Y	I	X	
Moanalua Wells	23-Sep-2025	0947	G	Water							3	3		chlorinated
Halawa Wells Units 1&2 P1	23-Sep-2025	1013	G	Water							3	3		
FB Moanalua Wells	23-Sep-2025	0947									1	1		
FB Halawa Wells Units 1&2	23-Sep-2025	1013									1	1		

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

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

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment: FedX 8016 4378 2263	
[redacted]	Date/Time: 24 Sep 2025 1400	Company: HBWS	Received by: [signature] Mack Urrutia	Date/Time: 9/25/25 1005	Company: EE/HI
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks: (6310) 2.4/0.0-2.9 gel. frozen

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-173542-1
SDG Number: PFAS: Moanalua Wells, Halawa Wells Units 1&2 P1

Login Number: 173542
List Number: 1
Creator: Tran, Kristine

List Source: Eurofins Eaton Analytical 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	
ClO4 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	