

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Ka'amilo Wells Pump 1/Pump 2

JOB NUMBER

380-156049-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Qualifiers

LCMS

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

Glossary

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

Case Narrative

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

Job ID: 380-156049-1

Job ID: 380-156049-1

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Job Narrative 380-156049-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 6/18/2025 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3°C and 1.4°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: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.1		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	3.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.3		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L	1		537.1	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.7		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.8		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.7		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.7		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L	1		537.1	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.4		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-3

No Detections.

Client Sample ID: FB: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-4

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: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-1

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorohexanesulfonic acid (PFHxS)	3.1		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorooctanesulfonic acid (PFOS)	4.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorooctanoic acid (PFOA)	3.1		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoropentanoic acid (PFPeA)	3.1		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:36	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C6 PFDA	103		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C5 PFHxA	97		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C4 PFHpA	98		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C8 PFOA	104		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C9 PFNA	103		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C7 PFUnA	109		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C2 PFDoA	110		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C4 PFBA	105		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C5 PFPeA	111		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C3 PFBS	111		50 - 200	06/20/25 08:20	06/20/25 19:36	1

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Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-1

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFHxS	117		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C8 PFOS	117		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C2-4:2-FTS	125		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C2-6:2-FTS	114		50 - 200	06/20/25 08:20	06/20/25 19:36	1
13C2-8:2-FTS	110		50 - 200	06/20/25 08:20	06/20/25 19:36	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		06/19/25 07:03	06/19/25 20:30	1
Perfluorooctanesulfonic acid (PFOS)	4.3		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorohexanoic acid (PFHxA)	3.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorooctanoic acid (PFOA)	3.4		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorobutanesulfonic acid (PFBS)	2.8		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	06/19/25 07:03	06/19/25 20:30	1
13C2 PFHxA	101		70 - 130	06/19/25 07:03	06/19/25 20:30	1
13C2 PFDA	103		70 - 130	06/19/25 07:03	06/19/25 20:30	1
13C3-GenX	90		70 - 130	06/19/25 07:03	06/19/25 20:30	1

Client Sample ID: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-2

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

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		06/20/25 08:20	06/20/25 20:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1

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Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-2

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorobutanesulfonic acid (PFBS)	2.5		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorohexanoic acid (PFHxA)	2.7		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorooctanoic acid (PFOA)	2.8		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoropentanoic acid (PFPeA)	2.7		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C6 PFDA	106		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C5 PFHxA	104		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C4 PFHpA	105		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C8 PFOA	114		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C9 PFNA	107		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C7 PFUnA	109		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C2 PFDoA	107		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C4 PFBA	113		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C5 PFPeA	118		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C3 PFBS	107		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C3 PFHxS	114		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C8 PFOS	107		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C2-4:2-FTS	121		50 - 200	06/20/25 08:20	06/20/25 20:14	1
13C2-6:2-FTS	117		50 - 200	06/20/25 08:20	06/20/25 20:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-2

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-8:2-FTS	113		50 - 200	06/20/25 08:20	06/20/25 20:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorohexanoic acid (PFHxA)	2.7		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorooctanoic acid (PFOA)	3.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorohexanesulfonic acid (PFHxS)	3.4		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorobutanesulfonic acid (PFBS)	2.4		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			06/19/25 07:03	06/19/25 20:41	1
13C2 PFHxA	108		70 - 130			06/19/25 07:03	06/19/25 20:41	1
13C2 PFDA	110		70 - 130			06/19/25 07:03	06/19/25 20:41	1
13C3-GenX	96		70 - 130			06/19/25 07:03	06/19/25 20:41	1

Client Sample ID: FB: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-3

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

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		06/20/25 08:20	06/20/25 20:23	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: FB: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-3

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

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		06/20/25 08:20	06/20/25 20:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C6 PFDA	104		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C5 PFHxA	105		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C4 PFHpA	107		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C8 PFOA	115		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C9 PFNA	110		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C7 PFUnA	110		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C2 PFDoA	109		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C4 PFBA	108		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C5 PFPeA	118		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C3 PFBS	107		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C3 PFHxS	109		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C8 PFOS	112		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C2-4:2-FTS	115		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C2-6:2-FTS	114		50 - 200	06/20/25 08:20	06/20/25 20:23	1
13C2-8:2-FTS	110		50 - 200	06/20/25 08:20	06/20/25 20:23	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		06/19/25 07:03	06/19/25 20:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: FB: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-3

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 20:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	129		70 - 130			06/19/25 07:03	06/19/25 20:52	1
13C2 PFHxA	116		70 - 130			06/19/25 07:03	06/19/25 20:52	1
13C2 PFDA	116		70 - 130			06/19/25 07:03	06/19/25 20:52	1
13C3-GenX	104		70 - 130			06/19/25 07:03	06/19/25 20:52	1

Client Sample ID: FB: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-4

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

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		06/20/25 08:20	06/20/25 20:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: FB: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-4

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

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-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/20/25 08:20	06/20/25 20:33	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C6 PFDA	108		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C5 PFHxA	108		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C4 PFHpA	110		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C8 PFOA	117		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C9 PFNA	110		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C7 PFUnA	110		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C2 PFDoA	110		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C4 PFBA	110		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C5 PFPeA	119		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C3 PFBS	109		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C3 PFHxS	112		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C8 PFOS	111		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C2-4:2-FTS	109		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C2-6:2-FTS	111		50 - 200			06/20/25 08:20	06/20/25 20:33	1
13C2-8:2-FTS	107		50 - 200			06/20/25 08:20	06/20/25 20:33	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: FB: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-4

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/19/25 07:03	06/19/25 21:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			06/19/25 07:03	06/19/25 21:02	1
13C2 PFHxA	110		70 - 130			06/19/25 07:03	06/19/25 21:02	1
13C2 PFDA	113		70 - 130			06/19/25 07:03	06/19/25 21:02	1
13C3-GenX	97		70 - 130			06/19/25 07:03	06/19/25 21:02	1

Action Limit Summary

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-1

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)	3.1		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.0		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		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)	4.3		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.4		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-2

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)	2.8		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	2.8		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)	3.5		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	3.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.4		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-3

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL 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

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Action Limit Summary

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: FB: Ka'amilo Wells Pump 1 (Continued)

Lab Sample ID: 380-156049-3

Compliance Check

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

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

Client Sample ID: FB: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-4

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	<2.0		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: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-156049-1	Ka'amilo Wells Pump 1	107	101	103	90
380-156049-2	Ka'amilo Wells Pump 2	104	108	110	96
380-156049-3	FB: Ka'amilo Wells Pump 1	129	116	116	104
380-156049-4	FB: Ka'amilo Wells Pump 2	109	110	113	97
380-156099-B-1-A MS	Matrix Spike	104	122	121	104
380-156099-C-1-A MSD	Matrix Spike Duplicate	106	114	112	103
LCS 380-158771/22-A	Lab Control Sample	105	108	108	101
MBL 380-158771/20-A	Method Blank	103	107	108	95
MRL 380-158771/21-A	Lab Control Sample	96	99	102	87

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: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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)
380-156049-1	Ka'amilo Wells Pump 1	92	103	97	98	104	103	109	110
380-156049-1 MS	Ka'amilo Wells Pump 1	79	83	78	79	83	79	92	96
380-156049-1 MSD	Ka'amilo Wells Pump 1	82	78	78	76	81	74	88	95
380-156049-2	Ka'amilo Wells Pump 2	105	106	104	105	114	107	109	107
380-156049-3	FB: Ka'amilo Wells Pump 1	102	104	105	107	115	110	110	109
380-156049-4	FB: Ka'amilo Wells Pump 2	97	108	108	110	117	110	110	110
LCS 380-158987/22-A	Lab Control Sample	105	107	103	104	113	107	111	111
MBL 380-158987/20-A	Method Blank	106	114	111	111	121	114	118	116
MRL 380-158987/21-A	Lab Control Sample	101	100	105	104	105	102	108	106

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-156049-1	Ka'amilo Wells Pump 1	105	111	111	117	117	125	114	110
380-156049-1 MS	Ka'amilo Wells Pump 1	91	96	106	114	106	120	110	113
380-156049-1 MSD	Ka'amilo Wells Pump 1	82	85	107	113	109	116	114	116
380-156049-2	Ka'amilo Wells Pump 2	113	118	107	114	107	121	117	113
380-156049-3	FB: Ka'amilo Wells Pump 1	108	118	107	109	112	115	114	110
380-156049-4	FB: Ka'amilo Wells Pump 2	110	119	109	112	111	109	111	107
LCS 380-158987/22-A	Lab Control Sample	114	113	109	107	109	107	111	108
MBL 380-158987/20-A	Method Blank	115	120	113	121	119	125	119	119
MRL 380-158987/21-A	Lab Control Sample	111	113	101	111	104	110	107	110

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

QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: MBL 380-158987/20-A

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 158987

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		06/20/25 08:20	06/20/25 19:07	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	106		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C6 PFDA	114		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C5 PFHxA	111		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C4 PFHpA	111		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C8 PFOA	121		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C9 PFNA	114		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C7 PFUnA	118		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C2 PFDoA	116		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C4 PFBA	115		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C5 PFPeA	120		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C3 PFBS	113		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C3 PFHxS	121		50 - 200	06/20/25 08:20	06/20/25 19:07	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: MBL 380-158987/20-A

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 158987

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	119		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C2-4:2-FTS	125		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C2-6:2-FTS	119		50 - 200	06/20/25 08:20	06/20/25 19:07	1
13C2-8:2-FTS	119		50 - 200	06/20/25 08:20	06/20/25 19:07	1

Lab Sample ID: LCS 380-158987/22-A

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	112		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	115		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	120		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	116		ng/L		96	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	116		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	120	117		ng/L		97	70 - 130
Perfluorododecanoic acid (PFDoA)	120	113		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	117		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	121		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	120	116		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	120	115		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	115		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	120	108		ng/L		90	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	114		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	115		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	118		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	115		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	109		ng/L		90	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	112		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	120	113		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	113		ng/L		94	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: LCS 380-158987/22-A

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	118		ng/L		98	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	105		50 - 200				
13C6 PFDA	107		50 - 200				
13C5 PFHxA	103		50 - 200				
13C4 PFHpA	104		50 - 200				
13C8 PFOA	113		50 - 200				
13C9 PFNA	107		50 - 200				
13C7 PFUnA	111		50 - 200				
13C2 PFDoA	111		50 - 200				
13C4 PFBA	114		50 - 200				
13C5 PFPeA	113		50 - 200				
13C3 PFBS	109		50 - 200				
13C3 PFHxS	107		50 - 200				
13C8 PFOS	109		50 - 200				
13C2-4:2-FTS	107		50 - 200				
13C2-6:2-FTS	111		50 - 200				
13C2-8:2-FTS	108		50 - 200				

Lab Sample ID: MRL 380-158987/21-A

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.24	J	ng/L		112	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	1.98	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.94	J	ng/L		97	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.90	J	ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.01	J	ng/L		100	50 - 150

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QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: MRL 380-158987/21-A

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.99	J	ng/L		99	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.22	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.22	J	ng/L		111	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.81	J	ng/L		91	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.83	J	ng/L		91	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.91	J	ng/L		95	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.87	J	ng/L		93	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	108		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	111		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	111		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	110		50 - 200

Lab Sample ID: 380-156049-1 MS

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Ka'amilo Wells Pump 1

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	115		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	117		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	113		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: 380-156049-1 MS

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Ka'amilo Wells Pump 1

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		121	115		ng/L		95	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	2.5		121	121		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	120		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	120		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	118		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	3.1		121	115		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	3.0		121	124		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	117		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	4.0		121	122		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	3.1		121	112		ng/L		90	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	114		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	119		ng/L		98	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		121	117		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	119		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	111		ng/L		92	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	113		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	3.1		121	109		ng/L		88	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	117		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	111		ng/L		91	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	79		50 - 200
13C6 PFDA	83		50 - 200
13C5 PFHxA	78		50 - 200
13C4 PFHpA	79		50 - 200
13C8 PFOA	83		50 - 200
13C9 PFNA	79		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	91		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	114		50 - 200
13C8 PFOS	106		50 - 200

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QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: 380-156049-1 MS

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Ka'amilo Wells Pump 1

Prep Type: Total/NA

Prep Batch: 158987

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	120		50 - 200
13C2-6:2-FTS	110		50 - 200
13C2-8:2-FTS	113		50 - 200

Lab Sample ID: 380-156049-1 MSD

Matrix: Water

Analysis Batch: 159131

Client Sample ID: Ka'amilo Wells Pump 1

Prep Type: Total/NA

Prep Batch: 158987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	118		ng/L		98	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		120	119		ng/L		99	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	120		ng/L		99	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	115		ng/L		95	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	2.5		120	120		ng/L		97	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		120	116		ng/L		96	70 - 130	4	30
Perfluorododecanoic acid (PFDaA)	<2.0		120	117		ng/L		97	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	122		ng/L		100	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	3.1		120	115		ng/L		93	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	3.0		120	121		ng/L		98	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		120	118		ng/L		98	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	4.0		120	119		ng/L		96	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	3.1		120	115		ng/L		93	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	115		ng/L		95	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	119		ng/L		98	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	110		ng/L		91	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	120		ng/L		100	70 - 130	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	120		ng/L		99	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	109		ng/L		90	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		120	122		ng/L		101	70 - 130	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	115		ng/L		95	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	113		ng/L		94	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	3.1		120	116		ng/L		93	70 - 130	6	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	116		ng/L		96	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	113		ng/L		93	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	82		50 - 200
13C6 PFDA	78		50 - 200
13C5 PFHxA	78		50 - 200
13C4 PFHpA	76		50 - 200
13C8 PFOA	81		50 - 200
13C9 PFNA	74		50 - 200
13C7 PFUnA	88		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	82		50 - 200
13C5 PFPeA	85		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	113		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	116		50 - 200

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

Lab Sample ID: MBL 380-158771/20-A
Matrix: Water
Analysis Batch: 158913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158771

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		06/19/25 07:03	06/19/25 19:15	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/19/25 07:03	06/19/25 19:15	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	103		70 - 130			06/19/25 07:03	06/19/25 19:15	1
13C2 PFHxA	107		70 - 130			06/19/25 07:03	06/19/25 19:15	1
13C2 PFDA	108		70 - 130			06/19/25 07:03	06/19/25 19:15	1

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QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: MBL 380-158771/20-A
Matrix: Water
Analysis Batch: 158913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 158771

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	95		70 - 130	06/19/25 07:03	06/19/25 19:15	1

Lab Sample ID: LCS 380-158771/22-A
Matrix: Water
Analysis Batch: 158913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 158771

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	50.0	46.6		ng/L		93	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	50.0	51.3		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.0	49.7		ng/L		99	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	49.4		ng/L		99	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	47.2		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	50.0	50.0		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	50.0	48.2		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	50.0	50.3		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	50.0	50.5		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.0	53.4		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.0	50.8		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.0	49.4		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	50.0	50.8		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.0	38.1		ng/L		76	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.0	49.1		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.0	51.5		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.0	47.7		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.0	47.8		ng/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	105		70 - 130
13C2 PFHxA	108		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	101		70 - 130

QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: MRL 380-158771/21-A

Matrix: Water

Analysis Batch: 158913

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 158771

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.67	J	ng/L		83	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.29	J	ng/L		114	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.05	J	ng/L		102	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	1.94	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.90	J	ng/L		94	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.99	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.96	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.57	J	ng/L		78	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	1.88	J	ng/L		94	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.17	J	ng/L		108	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.03	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.79	J	ng/L		89	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	96		70 - 130
13C2 PFHxA	99		70 - 130
13C2 PFDA	102		70 - 130
13C3-GenX	87		70 - 130

Lab Sample ID: 380-156099-B-1-A MS

Matrix: Water

Analysis Batch: 158913

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 158771

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		50.1	47.0		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.1	58.1		ng/L		116	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	53.4		ng/L		107	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	51.8		ng/L		103	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: 380-156099-B-1-A MS

Matrix: Water

Analysis Batch: 158913

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 158771

Perfluorinated Acid Data									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	50.0		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	52.2		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	51.9		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.1	52.1		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.1	55.2		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.1	62.3		ng/L		121	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.1	59.2		ng/L		117	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	55.8		ng/L		111	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.1	57.8		ng/L		115	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	40.9		ng/L		82	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	49.2		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.1	57.7		ng/L		115	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.1	51.8		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.1	51.1		ng/L		102	70 - 130

Lab Sample ID: 380-156099-C-1-A MSD

Matrix: Water

Analysis Batch: 158913

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 158771

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	48.2		ng/L		96	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	58.1		ng/L		116	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	52.2		ng/L		104	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	51.4		ng/L		102	70 - 130	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	51.5		ng/L		103	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	51.8		ng/L		101	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	50.5		ng/L		101	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	55.3		ng/L		108	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	54.3		ng/L		108	70 - 130	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

Lab Sample ID: 380-156099-C-1-A MSD

Matrix: Water

Analysis Batch: 158913

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 158771

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	61.8		ng/L		120	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	59.8		ng/L		118	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	54.5		ng/L		109	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	56.0		ng/L		111	70 - 130	3	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	41.0		ng/L		82	70 - 130	0	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.2	49.8		ng/L		99	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	58.4		ng/L		116	70 - 130	1	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	53.7		ng/L		107	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	51.8		ng/L		103	70 - 130	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	114		70 - 130
13C2 PFDA	112		70 - 130
13C3-GenX	103		70 - 130

QC Association Summary

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

LCMS

Prep Batch: 158771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-156049-1	Ka'amilo Wells Pump 1	Total/NA	Water	537.1 DW	
380-156049-2	Ka'amilo Wells Pump 2	Total/NA	Water	537.1 DW	
380-156049-3	FB: Ka'amilo Wells Pump 1	Total/NA	Water	537.1 DW	
380-156049-4	FB: Ka'amilo Wells Pump 2	Total/NA	Water	537.1 DW	
MBL 380-158771/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-158771/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-158771/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-156099-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-156099-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 158913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-156049-1	Ka'amilo Wells Pump 1	Total/NA	Water	537.1	158771
380-156049-2	Ka'amilo Wells Pump 2	Total/NA	Water	537.1	158771
380-156049-3	FB: Ka'amilo Wells Pump 1	Total/NA	Water	537.1	158771
380-156049-4	FB: Ka'amilo Wells Pump 2	Total/NA	Water	537.1	158771
MBL 380-158771/20-A	Method Blank	Total/NA	Water	537.1	158771
LCS 380-158771/22-A	Lab Control Sample	Total/NA	Water	537.1	158771
MRL 380-158771/21-A	Lab Control Sample	Total/NA	Water	537.1	158771
380-156099-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	158771
380-156099-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	158771

Prep Batch: 158987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-156049-1	Ka'amilo Wells Pump 1	Total/NA	Water	533	
380-156049-2	Ka'amilo Wells Pump 2	Total/NA	Water	533	
380-156049-3	FB: Ka'amilo Wells Pump 1	Total/NA	Water	533	
380-156049-4	FB: Ka'amilo Wells Pump 2	Total/NA	Water	533	
MBL 380-158987/20-A	Method Blank	Total/NA	Water	533	
LCS 380-158987/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-158987/21-A	Lab Control Sample	Total/NA	Water	533	
380-156049-1 MS	Ka'amilo Wells Pump 1	Total/NA	Water	533	
380-156049-1 MSD	Ka'amilo Wells Pump 1	Total/NA	Water	533	

Analysis Batch: 159131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-156049-1	Ka'amilo Wells Pump 1	Total/NA	Water	533	158987
380-156049-2	Ka'amilo Wells Pump 2	Total/NA	Water	533	158987
380-156049-3	FB: Ka'amilo Wells Pump 1	Total/NA	Water	533	158987
380-156049-4	FB: Ka'amilo Wells Pump 2	Total/NA	Water	533	158987
MBL 380-158987/20-A	Method Blank	Total/NA	Water	533	158987
LCS 380-158987/22-A	Lab Control Sample	Total/NA	Water	533	158987
MRL 380-158987/21-A	Lab Control Sample	Total/NA	Water	533	158987
380-156049-1 MS	Ka'amilo Wells Pump 1	Total/NA	Water	533	158987
380-156049-1 MSD	Ka'amilo Wells Pump 1	Total/NA	Water	533	158987

Lab Chronicle

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Client Sample ID: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-1

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			158987	E2HD	EA POM	06/20/25 08:20
Total/NA	Analysis	533		1	159131	Y5FM	EA POM	06/20/25 19:36
Total/NA	Prep	537.1 DW			158771	G9MN	EA POM	06/19/25 07:03
Total/NA	Analysis	537.1		1	158913	Y5FM	EA POM	06/19/25 20:30

Client Sample ID: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-2

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			158987	E2HD	EA POM	06/20/25 08:20
Total/NA	Analysis	533		1	159131	Y5FM	EA POM	06/20/25 20:14
Total/NA	Prep	537.1 DW			158771	G9MN	EA POM	06/19/25 07:03
Total/NA	Analysis	537.1		1	158913	Y5FM	EA POM	06/19/25 20:41

Client Sample ID: FB: Ka'amilo Wells Pump 1

Lab Sample ID: 380-156049-3

Date Collected: 06/16/25 10:30

Matrix: Water

Date Received: 06/18/25 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			158987	E2HD	EA POM	06/20/25 08:20
Total/NA	Analysis	533		1	159131	Y5FM	EA POM	06/20/25 20:23
Total/NA	Prep	537.1 DW			158771	G9MN	EA POM	06/19/25 07:03
Total/NA	Analysis	537.1		1	158913	Y5FM	EA POM	06/19/25 20:52

Client Sample ID: FB: Ka'amilo Wells Pump 2

Lab Sample ID: 380-156049-4

Date Collected: 06/16/25 11:05

Matrix: Water

Date Received: 06/18/25 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			158987	E2HD	EA POM	06/20/25 08:20
Total/NA	Analysis	533		1	159131	Y5FM	EA POM	06/20/25 20:33
Total/NA	Prep	537.1 DW			158771	G9MN	EA POM	06/19/25 07:03
Total/NA	Analysis	537.1		1	158913	Y5FM	EA POM	06/19/25 21:02

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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

- 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: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

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: 380-156049-1
SDG: PFAS: Ka'amilo Wells Pump 1/Pump 2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-156049-1	Ka'amilo Wells Pump 1	Water	06/16/25 10:30	06/18/25 09:45
380-156049-2	Ka'amilo Wells Pump 2	Water	06/16/25 11:05	06/18/25 09:45
380-156049-3	FB: Ka'amilo Wells Pump 1	Water	06/16/25 10:30	06/18/25 09:45
380-156049-4	FB: Ka'amilo Wells Pump 2	Water	06/16/25 11:05	06/18/25 09:45

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-156049-1

SDG Number: PFAS: Ka'amilo Wells Pump 1/Pump 2

Login Number: 156049

List Number: 1

Creator: Segura, Ryan

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").	True	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	