

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Ka'amilo Wells P1

JOB NUMBER

380-225236-1

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Job Notes

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

Compliance Statement

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

Authorization



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells 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

Case Narrative

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

Job ID: 380-225236-1

Job ID: 380-225236-1

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Job Narrative 380-225236-1

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 7/15/2026 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°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: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	3.3		2.0	ng/L	1		533	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	4.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	4.5		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	4.7		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.0		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanoic acid (PFHxA)	4.1		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	4.3		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.1		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.4		2.0	ng/L	1		EPA 537.1 V2	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.2		2.0	ng/L	1		EPA 537.1 V2	Total/NA

Client Sample ID: FB: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-2

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-1

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

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		07/20/26 08:05	07/21/26 10:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorobutanesulfonic acid (PFBS)	3.3		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoroheptanoic acid (PFHpA)	2.2		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorohexanesulfonic acid (PFHxS)	3.9		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorohexanoic acid (PFHxA)	4.3		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorooctanesulfonic acid (PFOS)	5.3		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorooctanoic acid (PFOA)	4.5		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoropentanoic acid (PFPeA)	4.7		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/20/26 08:05	07/21/26 10:35	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	99		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C6 PFDA	97		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C5 PFHxA	104		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C4 PFHpA	108		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C8 PFOA	106		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C9 PFNA	102		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C7 PFUnA	102		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C2 PFDoA	98		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C4 PFBA	102		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C5 PFPeA	105		50 - 200			07/20/26 08:05	07/21/26 10:35	1
13C3 PFBS	109		50 - 200			07/20/26 08:05	07/21/26 10:35	1

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Client Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-1

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFHxS	110		50 - 200	07/20/26 08:05	07/21/26 10:35	1
13C8 PFOS	109		50 - 200	07/20/26 08:05	07/21/26 10:35	1
13C2-4:2-FTS	112		50 - 200	07/20/26 08:05	07/21/26 10:35	1
13C2-6:2-FTS	111		50 - 200	07/20/26 08:05	07/21/26 10:35	1
13C2-8:2-FTS	101		50 - 200	07/20/26 08:05	07/21/26 10:35	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorooctanesulfonic acid (PFOS)	5.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorohexanoic acid (PFHxA)	4.1		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorooctanoic acid (PFOA)	4.3		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorohexanesulfonic acid (PFHxS)	4.1		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorobutanesulfonic acid (PFBS)	3.4		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluoroheptanoic acid (PFHpA)	2.2		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
Perfluorotridecanoic acid (PFTDA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 16:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130	07/17/26 10:37	07/18/26 16:18	1
13C2 PFHxA	106		70 - 130	07/17/26 10:37	07/18/26 16:18	1
13C2 PFDA	105		70 - 130	07/17/26 10:37	07/18/26 16:18	1
13C3-GenX	109		70 - 130	07/17/26 10:37	07/18/26 16:18	1

Client Sample ID: FB: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-2

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

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		07/17/26 07:44	07/18/26 04:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1

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Client Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: FB: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-2

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

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		07/17/26 07:44	07/18/26 04:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/17/26 07:44	07/18/26 04:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C6 PFDA	113		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C5 PFHxA	108		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C4 PFHpA	105		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C8 PFOA	113		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C9 PFNA	110		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C7 PFUnA	107		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C2 PFDoA	107		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C4 PFBA	109		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C5 PFPeA	107		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C3 PFBS	106		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C3 PFHxS	112		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C8 PFOS	110		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C2-4:2-FTS	102		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C2-6:2-FTS	99		50 - 200	07/17/26 07:44	07/18/26 04:51	1
13C2-8:2-FTS	98		50 - 200	07/17/26 07:44	07/18/26 04:51	1

Eurofins Pomona

Client Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: FB: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-2

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/26 10:37	07/18/26 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	07/17/26 10:37	07/18/26 17:15	1
13C2 PFHxA	113		70 - 130	07/17/26 10:37	07/18/26 17:15	1
13C2 PFDA	111		70 - 130	07/17/26 10:37	07/18/26 17:15	1
13C3-GenX	108		70 - 130	07/17/26 10:37	07/18/26 17:15	1

Action Limit Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-1

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)	3.9		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.3		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	4.5		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.0		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorooctanoic acid (PFOA)	4.3		ng/L	4	2.0	EPA 537.1 V2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.1		ng/L	10	2.0	EPA 537.1 V2	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	EPA 537.1 V2	Total/NA

Client Sample ID: FB: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	108	106	105	109
380-225236-1 MS	Ka'amilo Wells P1 (331-031-WL008)	108	107	110	113
380-225236-1 MSD	Ka'amilo Wells P1 (331-031-WL008)	110	104	105	107
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	107	113	111	108
LCS 380-240577/23-A	Lab Control Sample	111	117	119	119
MBL 380-240577/21-A	Method Blank	119	117	116	123
MRL 380-240577/22-A	Lab Control Sample	113	108	111	106

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: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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)
177-4024-B-1-A MS	Matrix Spike	108	111	106	109	111	110	110	111
177-4024-C-1-A MSD	Matrix Spike Duplicate	109	107	107	110	112	111	112	108
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	99	97	104	108	106	102	102	98
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	105	113	108	105	113	110	107	107
380-225546-B-1-A MS	Matrix Spike	68	85	74	74	80	87	82	91
380-225546-C-1-A MSD	Matrix Spike Duplicate	90	91	99	94	97	100	87	97
LCS 380-240537/22-A	Lab Control Sample	109	112	106	112	111	109	111	113
LCS 380-240909/22-A	Lab Control Sample	115	107	114	116	115	120	113	116
MBL 380-240537/20-A	Method Blank	100	107	103	104	112	109	106	106
MBL 380-240909/20-A	Method Blank	105	103	106	112	111	112	111	118
MRL 380-240537/21-A	Lab Control Sample	101	109	103	105	108	108	108	107
MRL 380-240909/21-A	Lab Control Sample	110	105	109	112	110	104	110	108

		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)
177-4024-B-1-A MS	Matrix Spike	110	115	110	106	110	104	105	100
177-4024-C-1-A MSD	Matrix Spike Duplicate	109	113	106	111	110	104	102	104
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	102	105	109	110	109	112	111	101
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	109	107	106	112	110	102	99	98
380-225546-B-1-A MS	Matrix Spike	74	77	119	95	109	134	120	105
380-225546-C-1-A MSD	Matrix Spike Duplicate	95	101	124	103	113	144	129	107
LCS 380-240537/22-A	Lab Control Sample	111	111	105	111	110	102	101	102
LCS 380-240909/22-A	Lab Control Sample	114	119	112	116	115	111	110	114
MBL 380-240537/20-A	Method Blank	112	111	113	112	114	111	112	102
MBL 380-240909/20-A	Method Blank	112	110	110	113	113	118	120	114
MRL 380-240537/21-A	Lab Control Sample	109	111	110	116	113	107	107	104
MRL 380-240909/21-A	Lab Control Sample	107	109	112	119	113	115	115	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: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MBL 380-240537/20-A

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240537

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.29		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.37		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.36		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.47		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.46		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.24		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.45		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		07/17/26 07:44	07/18/26 01:19	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C6 PFDA	107		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C5 PFHxA	103		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C4 PFHpA	104		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C8 PFOA	112		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C9 PFNA	109		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C7 PFUnA	106		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C2 PFDoA	106		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C4 PFBA	112		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C5 PFPeA	111		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C3 PFBS	113		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C3 PFHxS	112		50 - 200	07/17/26 07:44	07/18/26 01:19	1

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MBL 380-240537/20-A

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240537

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	114		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C2-4:2-FTS	111		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C2-6:2-FTS	112		50 - 200	07/17/26 07:44	07/18/26 01:19	1
13C2-8:2-FTS	102		50 - 200	07/17/26 07:44	07/18/26 01:19	1

Lab Sample ID: LCS 380-240537/22-A

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.1	57.7		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.1	61.0		ng/L		103	70 - 130
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	59.1	56.9		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.1	57.0		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.1	60.0		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	59.1	60.2		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	59.1	55.6		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.1	59.6		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.1	60.7		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	59.1	59.8		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	59.1	61.5		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.1	58.7		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	59.1	56.7		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	59.1	58.5		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	59.1	59.7		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.1	57.5		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.1	59.6		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.1	60.1		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.1	59.7		ng/L		101	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	59.1	62.8		ng/L		106	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.1	54.9		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.1	53.1		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	59.1	57.6		ng/L		98	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.1	60.4		ng/L		102	70 - 130

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: LCS 380-240537/22-A

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	59.1	57.9		ng/L		98	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	109		50 - 200				
13C6 PFDA	112		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	112		50 - 200				
13C8 PFOA	111		50 - 200				
13C9 PFNA	109		50 - 200				
13C7 PFUnA	111		50 - 200				
13C2 PFDoA	113		50 - 200				
13C4 PFBA	111		50 - 200				
13C5 PFPeA	111		50 - 200				
13C3 PFBS	105		50 - 200				
13C3 PFHxS	111		50 - 200				
13C8 PFOS	110		50 - 200				
13C2-4:2-FTS	102		50 - 200				
13C2-6:2-FTS	101		50 - 200				
13C2-8:2-FTS	102		50 - 200				

Lab Sample ID: MRL 380-240537/21-A

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.87	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.96	1.98	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.92	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.96	1.87	J	ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	2.08	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	2.03	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	1.92	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	2.08	J	ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	1.96	J	ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	2.18	J	ng/L		111	50 - 150
Perfluorononanoic acid (PFNA)	1.96	2.12	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.96	1.94	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	1.83	J	ng/L		93	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.00	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	1.96	2.23	J	ng/L		114	50 - 150

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MRL 380-240537/21-A

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.96	1.90	J	ng/L		97	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.96	2.04	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.96	2.08	J	ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.96	2.13	J	ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.96	1.98	J	ng/L		101	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.96	1.82	J	ng/L		93	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.96	1.81	J	ng/L		92	50 - 150
Perfluoropentanoic acid (PFPeA)	1.96	2.04	J	ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.96	1.90	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.96	1.75	J	ng/L		89	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	105		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	108		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	116		50 - 200
13C8 PFOS	113		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: 177-4024-B-1-A MS

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		59.3	56.3		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.3	59.0		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.3	60.6		ng/L		102	70 - 130

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: 177-4024-B-1-A MS

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		59.3	57.0		ng/L		96	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.3	58.8		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.3	59.2		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.3	56.9		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		59.3	62.2		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.3	61.8		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		59.3	61.4		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.3	62.2		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.1		59.3	61.4		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		59.3	56.4		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.3	60.2		ng/L		101	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		59.3	61.9		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.3	56.1		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.3	57.3		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.3	56.7		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.3	60.4		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.3	57.3		ng/L		97	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.3	55.2		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.3	58.2		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		59.3	56.3		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.3	59.0		ng/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.3	58.9		ng/L		99	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	108		50 - 200
13C6 PFDA	111		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	111		50 - 200
13C9 PFNA	110		50 - 200
13C7 PFUnA	110		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	110		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	110		50 - 200

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: 177-4024-B-1-A MS

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240537

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	104		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 177-4024-C-1-A MSD

Matrix: Water

Analysis Batch: 240682

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 240537

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		59.2	55.1		ng/L		93	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	59.0		ng/L		100	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	58.8		ng/L		99	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.2	55.6		ng/L		94	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	61.8		ng/L		103	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		59.2	60.9		ng/L		103	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	58.5		ng/L		99	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	60.8		ng/L		103	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	59.6		ng/L		99	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	59.3		ng/L		100	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		59.2	60.0		ng/L		101	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	2.1		59.2	60.8		ng/L		99	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		59.2	56.1		ng/L		94	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	57.6		ng/L		97	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		59.2	62.2		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	55.0		ng/L		93	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	61.5		ng/L		104	70 - 130	7	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	60.1		ng/L		102	70 - 130	6	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		59.2	59.5		ng/L		101	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.2	61.3		ng/L		104	70 - 130	7	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	54.7		ng/L		92	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMPA)	<2.0		59.2	55.1		ng/L		93	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	55.5		ng/L		94	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	60.8		ng/L		103	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	56.9		ng/L		96	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	109		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	112		50 - 200
13C9 PFNA	111		50 - 200
13C7 PFUnA	112		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	111		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	104		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	104		50 - 200

Lab Sample ID: MBL 380-240909/20-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240909

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecan	<0.29		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
e-1-sulfonic acid (11CI-PF3OUdS)								
9-Chlorohexadecafluoro-3-oxanonan	<0.30		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
e-1-sulfonic acid(9CI-PF3ONS)								
4,8-Dioxa-3H-perfluorononanoic acid	<0.59		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
(ADONA)								
Hexafluoropropylene Oxide Dimer	<0.99		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Acid (HFPO-DA/GenX)								
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluorobutanoic acid (PFBA)	<0.68		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
1H,1H,2H,2H-Perfluorodecane	<0.38		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
sulfonic acid (8:2 FTS)								
1H,1H,2H,2H-Perfluorohexane	<0.36		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
sulfonic acid (4:2 FTS)								
1H,1H,2H,2H-Perfluorooctane sulfonic	<0.47		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
acid (6:2 FTS)								
Nonafluoro-3,6-dioxaheptanoic acid	<0.46		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
(NFDHA)								
Perfluoro (2-ethoxyethane) sulfonic	<0.24		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
acid (PFEESA)								
Perfluoro-3-methoxypropanoic acid	<0.45		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
(PFMPA)								
Perfluoro-4-methoxybutanoic acid	<0.15		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
(PFMBA)								

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MBL 380-240909/20-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240909

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.37		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.35		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Perfluoropentanesulfonic acid (PFPeS)	<0.38		2.0	ng/L		07/20/26 08:05	07/21/26 08:19	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	105		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C6 PFDA	103		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C5 PFHxA	106		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C4 PFHpA	112		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C8 PFOA	111		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C9 PFNA	112		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C7 PFUnA	111		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C2 PFDoA	118		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C4 PFBA	112		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C5 PFPeA	110		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C3 PFBS	110		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C3 PFHxS	113		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C8 PFOS	113		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C2-4:2-FTS	118		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C2-6:2-FTS	120		50 - 200			07/20/26 08:05	07/21/26 08:19	1
13C2-8:2-FTS	114		50 - 200			07/20/26 08:05	07/21/26 08:19	1

Lab Sample ID: LCS 380-240909/22-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	59.1	52.8		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	59.1	54.0		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	59.1	55.7		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	59.1	55.9		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	59.1	55.8		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	59.1	58.6		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	59.1	54.0		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	59.1	56.3		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	59.1	54.3		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	59.1	56.6		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	59.1	50.6		ng/L		86	70 - 130
Perfluorooctanesulfonic acid (PFOS)	59.1	53.3		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	59.1	55.1		ng/L		93	70 - 130

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: LCS 380-240909/22-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	59.1	55.8		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	59.1	56.9		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	59.1	56.0		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	59.1	57.0		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	59.1	57.8		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	59.1	60.0		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	59.1	54.5		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	59.1	54.9		ng/L		93	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	59.1	55.1		ng/L		93	70 - 130
Perfluoropentanoic acid (PFPeA)	59.1	56.3		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	59.1	55.1		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	59.1	53.5		ng/L		91	70 - 130

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	115		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	114		50 - 200
13C4 PFHpA	116		50 - 200
13C8 PFOA	115		50 - 200
13C9 PFNA	120		50 - 200
13C7 PFUnA	113		50 - 200
13C2 PFDoA	116		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	119		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	116		50 - 200
13C8 PFOS	115		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	110		50 - 200
13C2-8:2-FTS	114		50 - 200

Lab Sample ID: MRL 380-240909/21-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.97	1.97	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.97	1.95	J	ng/L		99	50 - 150

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MRL 380-240909/21-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.97	2.03	J	ng/L		103	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	1.97	2.00	J	ng/L		102	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.97	2.05	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	1.97	2.05	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	1.97	2.06	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.97	2.01	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.97	1.84	J	ng/L		93	50 - 150
Perfluorohexanoic acid (PFHxA)	1.97	2.06	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	1.97	2.13	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.97	1.93	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	1.97	2.04	J	ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.97	1.97	J	ng/L		100	50 - 150
Perfluorobutanoic acid (PFBA)	1.97	2.30	J	ng/L		117	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.97	2.14	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.97	2.23	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.97	2.07	J	ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.97	2.06	J	ng/L		104	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	1.97	1.94	J	ng/L		98	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	1.97	2.15	J	ng/L		109	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	1.97	2.01	J	ng/L		102	50 - 150
Perfluoropentanoic acid (PFPeA)	1.97	2.21	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.97	1.91	J	ng/L		97	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.97	1.95	J	ng/L		99	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	110		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	109		50 - 200
13C4 PFHpA	112		50 - 200
13C8 PFOA	110		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	110		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	119		50 - 200

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MRL 380-240909/21-A

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240909

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C8 PFOS	113		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	115		50 - 200
13C2-8:2-FTS	110		50 - 200

Lab Sample ID: 380-225546-B-1-A MS

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		59.2	52.0		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		59.2	59.1		ng/L		100	70 - 130
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	53.7		ng/L		91	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.2	58.1		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	59.7		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		59.2	61.3		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	57.1		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	58.7		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	65.8		ng/L		109	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	62.5		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		59.2	56.7		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	15		59.2	71.9		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	3.6		59.2	61.1		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	56.4		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	2.4		59.2	61.9		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	58.4		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	56.2		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	63.1		ng/L		107	70 - 130
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		59.2	53.1		ng/L		90	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.2	54.3		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	56.3		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMPA)	<2.0		59.2	58.0		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	59.6		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	63.1		ng/L		107	70 - 130

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: 380-225546-B-1-A MS

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	74.0		ng/L		125	70 - 130
Isotope Dilution									
	%Recovery	MS Qualifier	Limits						
13C3 HFPO-DA	68		50 - 200						
13C6 PFDA	85		50 - 200						
13C5 PFHxA	74		50 - 200						
13C4 PFHpA	74		50 - 200						
13C8 PFOA	80		50 - 200						
13C9 PFNA	87		50 - 200						
13C7 PFUnA	82		50 - 200						
13C2 PFDoA	91		50 - 200						
13C4 PFBA	74		50 - 200						
13C5 PFPeA	77		50 - 200						
13C3 PFBS	119		50 - 200						
13C3 PFHxS	95		50 - 200						
13C8 PFOS	109		50 - 200						
13C2-4:2-FTS	134		50 - 200						
13C2-6:2-FTS	120		50 - 200						
13C2-8:2-FTS	105		50 - 200						

Lab Sample ID: 380-225546-C-1-A MSD

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		59.2	50.4		ng/L		85	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		59.2	57.7		ng/L		97	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		59.2	55.4		ng/L		94	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		59.2	57.8		ng/L		98	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		59.2	57.8		ng/L		95	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		59.2	62.2		ng/L		104	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		59.2	57.5		ng/L		97	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		59.2	57.7		ng/L		97	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		59.2	60.9		ng/L		101	70 - 130	8	30
Perfluorohexanoic acid (PFHxA)	<2.0		59.2	59.3		ng/L		99	70 - 130	5	30
Perfluorononanoic acid (PFNA)	<2.0		59.2	55.9		ng/L		94	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	15		59.2	69.9		ng/L		92	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	3.6		59.2	58.9		ng/L		94	70 - 130	4	30
Perfluoroundecanoic acid (PFUnA)	<2.0		59.2	56.4		ng/L		95	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	2.4		59.2	60.5		ng/L		98	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: 380-225546-C-1-A MSD

Matrix: Water

Analysis Batch: 241160

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 240909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		59.2	61.2		ng/L		103	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		59.2	55.3		ng/L		93	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		59.2	59.3		ng/L		100	70 - 130	6	30
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		59.2	53.4		ng/L		90	70 - 130	1	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		59.2	53.0		ng/L		90	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		59.2	51.3		ng/L		87	70 - 130	9	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		59.2	54.7		ng/L		92	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	<2.0		59.2	57.5		ng/L		96	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		59.2	60.0		ng/L		101	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		59.2	68.2		ng/L		115	70 - 130	8	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	99		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	87		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	101		50 - 200
13C3 PFBS	124		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	113		50 - 200
13C2-4:2-FTS	144		50 - 200
13C2-6:2-FTS	129		50 - 200
13C2-8:2-FTS	107		50 - 200

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

Lab Sample ID: MBL 380-240577/21-A

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240577

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<0.98		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorooctanesulfonic acid (PFOS)	<0.42		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluoroundecanoic acid (PFUnA)	<0.41		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.57		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MBL 380-240577/21-A

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 240577

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.41		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorohexanoic acid (PFHxA)	<0.45		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorododecanoic acid (PFDoA)	<0.53		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorooctanoic acid (PFOA)	<0.37		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.31		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorobutanesulfonic acid (PFBS)	<0.36		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluoroheptanoic acid (PFHpA)	<0.38		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorononanoic acid (PFNA)	<0.39		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorotetradecanoic acid (PFTA)	<0.53		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
Perfluorotridecanoic acid (PFTDA)	<0.35		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUS)	<0.29		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.59		2.0	ng/L		07/17/26 10:37	07/18/26 15:49	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	119		70 - 130	07/17/26 10:37	07/18/26 15:49	1
13C2 PFHxA	117		70 - 130	07/17/26 10:37	07/18/26 15:49	1
13C2 PFDA	116		70 - 130	07/17/26 10:37	07/18/26 15:49	1
13C3-GenX	123		70 - 130	07/17/26 10:37	07/18/26 15:49	1

Lab Sample ID: LCS 380-240577/23-A

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240577

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	49.2	52.5		ng/L		107	70 - 130
Perfluorooctanesulfonic acid (PFOS)	49.2	49.3		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	49.2	54.7		ng/L		111	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	49.2	51.5		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	49.2	49.2		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	49.2	54.2		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	49.2	52.7		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	49.2	50.4		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	49.2	51.2		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	49.2	52.0		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	49.2	51.1		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	49.2	54.4		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	49.2	53.6		ng/L		109	70 - 130

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QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: LCS 380-240577/23-A

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240577

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	49.2	55.3		ng/L		112	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	49.2	56.4		ng/L		115	70 - 130
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	49.2	51.2		ng/L		104	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	49.2	51.5		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	49.2	51.4		ng/L		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	119		70 - 130
13C3-GenX	119		70 - 130

Lab Sample ID: MRL 380-240577/22-A

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240577

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	1.96	1.86	J	ng/L		95	50 - 150
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	1.96	1.93	J	ng/L		98	50 - 150
Perfluoroundecanoic acid (PFUnA)	1.96	2.00	J	ng/L		102	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.96	1.91	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.96	1.84	J	ng/L		94	50 - 150
Perfluorohexanoic acid (PFHxA)	1.96	2.04	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	1.96	1.98	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	1.96	1.99	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	1.96	1.95	J	ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.96	1.97	J	ng/L		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.96	1.97	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	1.96	1.96	J	ng/L		100	50 - 150
Perfluorononanoic acid (PFNA)	1.96	1.97	J	ng/L		100	50 - 150
Perfluorotetradecanoic acid (PFTA)	1.96	2.12	J	ng/L		108	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	1.96	2.06	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	1.96	1.83	J	ng/L		93	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: MRL 380-240577/22-A

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 240577

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.96	1.87	J	ng/L		95	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.96	1.91	J	ng/L		97	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	113		70 - 130
13C2 PFHxA	108		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	106		70 - 130

Lab Sample ID: 380-225236-1 MS

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Prep Type: Total/NA

Prep Batch: 240577

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		49.3	48.5		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	5.0		49.3	52.4		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		49.3	51.2		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.3	49.3		ng/L		100	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.3	47.0		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	4.1		49.3	53.7		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		49.3	51.2		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	4.3		49.3	53.0		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		49.3	49.0		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	4.1		49.3	53.6		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	3.4		49.3	53.6		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	2.2		49.3	51.5		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		49.3	50.4		ng/L		102	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		49.3	51.2		ng/L		104	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		49.3	53.8		ng/L		109	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.3	47.4		ng/L		96	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.3	49.8		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.3	48.7		ng/L		99	70 - 130

QC Sample Results

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

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

Lab Sample ID: 380-225236-1 MS

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Prep Type: Total/NA

Prep Batch: 240577

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
d5-NEtFOSAA	108		70 - 130
13C2 PFHxA	107		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	113		70 - 130

Lab Sample ID: 380-225236-1 MSD

Matrix: Water

Analysis Batch: 240731

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Prep Type: Total/NA

Prep Batch: 240577

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide	<2.0		49.2	46.4		ng/L		94	70 - 130	4	30
Dimer Acid (HFPO-DA/GenX)											
Perfluorooctanesulfonic acid (PFOS)	5.0		49.2	53.2		ng/L		98	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		49.2	49.3		ng/L		100	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		49.2	49.5		ng/L		101	70 - 130	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		49.2	51.6		ng/L		105	70 - 130	9	30
Perfluorohexanoic acid (PFHxA)	4.1		49.2	51.6		ng/L		97	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		49.2	49.5		ng/L		100	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	4.3		49.2	52.3		ng/L		98	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		49.2	46.8		ng/L		95	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	4.1		49.2	53.4		ng/L		100	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	3.4		49.2	54.0		ng/L		103	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	2.2		49.2	51.6		ng/L		100	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		49.2	49.2		ng/L		100	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		49.2	49.2		ng/L		100	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		49.2	53.2		ng/L		108	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		49.2	48.4		ng/L		98	70 - 130	2	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		49.2	48.4		ng/L		98	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		49.2	48.4		ng/L		98	70 - 130	1	30

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
d5-NEtFOSAA	110		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	107		70 - 130

QC Association Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

LCMS

Prep Batch: 240537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	533	
MBL 380-240537/20-A	Method Blank	Total/NA	Water	533	
LCS 380-240537/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-240537/21-A	Lab Control Sample	Total/NA	Water	533	
177-4024-B-1-A MS	Matrix Spike	Total/NA	Water	533	
177-4024-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 240577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	537.1 DW	
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	537.1 DW	
MBL 380-240577/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-240577/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-240577/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-225236-1 MS	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	537.1 DW	
380-225236-1 MSD	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	537.1 DW	

Analysis Batch: 240682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	533	240537
MBL 380-240537/20-A	Method Blank	Total/NA	Water	533	240537
LCS 380-240537/22-A	Lab Control Sample	Total/NA	Water	533	240537
MRL 380-240537/21-A	Lab Control Sample	Total/NA	Water	533	240537
177-4024-B-1-A MS	Matrix Spike	Total/NA	Water	533	240537
177-4024-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	240537

Analysis Batch: 240731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	EPA 537.1 V2	240577
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	EPA 537.1 V2	240577
MBL 380-240577/21-A	Method Blank	Total/NA	Water	EPA 537.1 V2	240577
LCS 380-240577/23-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	240577
MRL 380-240577/22-A	Lab Control Sample	Total/NA	Water	EPA 537.1 V2	240577
380-225236-1 MS	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	EPA 537.1 V2	240577
380-225236-1 MSD	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	EPA 537.1 V2	240577

Prep Batch: 240909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	533	
MBL 380-240909/20-A	Method Blank	Total/NA	Water	533	
LCS 380-240909/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-240909/21-A	Lab Control Sample	Total/NA	Water	533	
380-225546-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-225546-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 241160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	Total/NA	Water	533	240909
MBL 380-240909/20-A	Method Blank	Total/NA	Water	533	240909
LCS 380-240909/22-A	Lab Control Sample	Total/NA	Water	533	240909
MRL 380-240909/21-A	Lab Control Sample	Total/NA	Water	533	240909

Eurofins Pomona

QC Association Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

LCMS (Continued)

Analysis Batch: 241160 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-225546-B-1-A MS	Matrix Spike	Total/NA	Water	533	240909
380-225546-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	240909

Lab Chronicle

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Client Sample ID: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-1

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			240909	XTD8	EA POM	07/20/26 08:05
Total/NA	Analysis	533		1	241160	SZ9R	EA POM	07/21/26 10:35
Total/NA	Prep	537.1 DW			240577	E9PK	EA POM	07/17/26 10:37
Total/NA	Analysis	EPA 537.1 V2		1	240731	M7ML	EA POM	07/18/26 16:18

Client Sample ID: FB: Ka'amilo Wells P1 (331-031-WL008)

Lab Sample ID: 380-225236-2

Date Collected: 07/13/26 12:07

Matrix: Water

Date Received: 07/15/26 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			240537	XTD8	EA POM	07/17/26 07:44
Total/NA	Analysis	533		1	240682	Y5FM	EA POM	07/18/26 04:51
Total/NA	Prep	537.1 DW			240577	E9PK	EA POM	07/17/26 10:37
Total/NA	Analysis	EPA 537.1 V2		1	240731	M7ML	EA POM	07/18/26 17:15

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Laboratory: Eurofins Pomona

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

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

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

Method Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
EPA 537.1 V2	EPA 537.1 Ver. 2.0 March 2020	EPA	EA POM
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA POM
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA POM

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-225236-1
SDG: PFAS: Ka'amilo Wells P1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-225236-1	Ka'amilo Wells P1 (331-031-WL008)	Water	07/13/26 12:07	07/15/26 10:10	Hawaii
380-225236-2	FB: Ka'amilo Wells P1 (331-031-WL008)	Water	07/13/26 12:07	07/15/26 10:10	Hawaii

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

[illegible]

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-225236-1
SDG Number: PFAS: Ka'amilo Wells P1

Login Number: 225236

List Number: 1

Creator: Segura, Ryan

List Source: Eurofins Pomona

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