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ANALYTICAL REPORT

PREPARED FOR

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

Generated 11/5/2024 8:22:20 AM

JOB DESCRIPTION

RED-HILL
Weekly PFAS

JOB NUMBER

380-120078-1

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



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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106



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Definitions/Glossary

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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: 380-120078-1

Job ID: 380-120078-1

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Job Narrative 380-120078-1

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 10/31/2024 10:11 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 3.0°C.

PFAS

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

Detection Summary

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

Job ID: 380-120078-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.9		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.4		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-2

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: 380-120078-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-1

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorohexanesulfonic acid (PFHxS)	3.5		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C6 PFDA	102		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C5 PFHxA	101		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C4 PFHpA	104		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C8 PFOA	100		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C9 PFNA	98		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C7 PFUnA	106		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C2 PFDoA	104		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C4 PFBA	103		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C5 PFPeA	104		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C3 PFBS	110		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C3 PFHxS	114		50 - 200	11/01/24 12:32	11/02/24 16:02	1

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Client Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-1

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	110		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C2-4:2-FTS	119		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C2-6:2-FTS	115		50 - 200	11/01/24 12:32	11/02/24 16:02	1
13C2-8:2-FTS	111		50 - 200	11/01/24 12:32	11/02/24 16:02	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		11/02/24 06:11	11/03/24 08:15	1
Perfluorooctanesulfonic acid (PFOS)	3.9		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorohexanesulfonic acid (PFHxS)	4.4		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/02/24 06:11	11/03/24 08:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	103		70 - 130	11/02/24 06:11	11/03/24 08:15	1
13C2 PFHxA	114		70 - 130	11/02/24 06:11	11/03/24 08:15	1
13C2 PFDA	112		70 - 130	11/02/24 06:11	11/03/24 08:15	1
13C3-GenX	106		70 - 130	11/02/24 06:11	11/03/24 08:15	1

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-2

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1

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Client Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-2

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/01/24 12:32	11/02/24 16:13	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C6 PFDA	115		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C5 PFHxA	106		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C4 PFHpA	115		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C8 PFOA	112		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C9 PFNA	112		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C7 PFUnA	112		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C2 PFDoA	108		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C4 PFBA	111		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C5 PFPeA	109		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C3 PFBS	110		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C3 PFHxS	112		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C8 PFOS	110		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C2-4:2-FTS	117		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C2-6:2-FTS	107		50 - 200			11/01/24 12:32	11/02/24 16:13	1
13C2-8:2-FTS	108		50 - 200			11/01/24 12:32	11/02/24 16:13	1

Client Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-2

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

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		11/01/24 16:17	11/03/24 20:50	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/01/24 16:17	11/03/24 20:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130			11/01/24 16:17	11/03/24 20:50	1
13C2 PFHxA	107		70 - 130			11/01/24 16:17	11/03/24 20:50	1
13C2 PFDA	106		70 - 130			11/01/24 16:17	11/03/24 20:50	1
13C3-GenX	108		70 - 130			11/01/24 16:17	11/03/24 20:50	1

Action Limit Summary

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

Job ID: 380-120078-1
SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-1

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	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)	3.5		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		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)	3.9		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)	4.4		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: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-2

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	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: 380-120078-1
 SDG: Weekly PFAS

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)
380-120078-1	Halawa Shaft Viewing Pool	103	114	112	106
380-120078-1 MS	Halawa Shaft Viewing Pool	105	115	112	103
380-120078-1 MSD	Halawa Shaft Viewing Pool	102	102	107	95
380-120078-2	FB: Halawa Shaft Viewing Pool	114	107	106	108
380-120239-B-1-A MS	Matrix Spike	114	105	107	104
380-120239-C-1-A MSD	Matrix Spike Duplicate	113	106	108	104
LCS 380-116920/21-A	Lab Control Sample	112	110	107	110
LCS 380-116952/22-A	Lab Control Sample	90	102	112	89
MBL 380-116920/19-A	Method Blank	110	108	104	105
MBL 380-116952/20-A	Method Blank	98	105	115	93
MRL 380-116920/20-A	Lab Control Sample	110	112	106	104
MRL 380-116952/21-A	Lab Control Sample	94	111	110	94

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: 380-120078-1
SDG: Weekly PFAS

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-120078-1	Halawa Shaft Viewing Pool	93	102	101	104	100	98	106	104
380-120078-2	FB: Halawa Shaft Viewing Pool	90	115	106	115	112	112	112	108
380-120082-E-1-A MS	Matrix Spike	85	82	88	87	84	81	83	87
380-120082-F-1-A MSD	Matrix Spike Duplicate	74	74	77	77	73	69	79	87
LCS 380-116866/22-A	Lab Control Sample	87	108	108	109	108	107	109	105
MBL 380-116866/20-A	Method Blank	92	93	100	106	104	97	79	72
MRL 380-116866/21-A	Lab Control Sample	79	100	103	107	106	103	100	100

		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)
380-120078-1	Halawa Shaft Viewing Pool	103	104	110	114	110	119	115	111
380-120078-2	FB: Halawa Shaft Viewing Pool	111	109	110	112	110	117	107	108
380-120082-E-1-A MS	Matrix Spike	89	90	109	110	106	105	105	102
380-120082-F-1-A MSD	Matrix Spike Duplicate	86	85	113	110	111	111	112	110
LCS 380-116866/22-A	Lab Control Sample	108	115	111	111	109	109	101	98
MBL 380-116866/20-A	Method Blank	104	105	105	106	100	101	98	95
MRL 380-116866/21-A	Lab Control Sample	107	105	103	107	104	109	105	101

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-116866/20-A
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116866

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		11/01/24 12:32	11/02/24 12:17	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		11/01/24 12:32	11/02/24 12:17	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C6 PFDA	93		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C5 PFHxA	100		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C4 PFHpA	106		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C8 PFOA	104		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C9 PFNA	97		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C7 PFUnA	79		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C2 PFDoA	72		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C4 PFBA	104		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C5 PFPeA	105		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C3 PFBS	105		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C3 PFHxS	106		50 - 200	11/01/24 12:32	11/02/24 12:17	1

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QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-116866/20-A
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116866

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	100		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C2-4:2-FTS	101		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C2-6:2-FTS	98		50 - 200	11/01/24 12:32	11/02/24 12:17	1
13C2-8:2-FTS	95		50 - 200	11/01/24 12:32	11/02/24 12:17	1

Lab Sample ID: LCS 380-116866/22-A
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116866

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	110		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	116		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	114		ng/L		95	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	111		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	115		ng/L		96	70 - 130
Perfluorodecanoic acid (PFDA)	120	115		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	120	114		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	115		ng/L		96	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	120	113		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	120	121		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	116		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	120	113		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	112		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	121		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	117		ng/L		98	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	115		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	123		ng/L		102	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	113		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	120	112		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	116		ng/L		96	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-116866/22-A
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	115		ng/L		96	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	87		50 - 200				
13C6 PFDA	108		50 - 200				
13C5 PFHxA	108		50 - 200				
13C4 PFHpA	109		50 - 200				
13C8 PFOA	108		50 - 200				
13C9 PFNA	107		50 - 200				
13C7 PFUnA	109		50 - 200				
13C2 PFDoA	105		50 - 200				
13C4 PFBA	108		50 - 200				
13C5 PFPeA	115		50 - 200				
13C3 PFBS	111		50 - 200				
13C3 PFHxS	111		50 - 200				
13C8 PFOS	109		50 - 200				
13C2-4:2-FTS	109		50 - 200				
13C2-6:2-FTS	101		50 - 200				
13C2-8:2-FTS	98		50 - 200				

Lab Sample ID: MRL 380-116866/21-A
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116866

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.87	J	ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.97	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.97	J	ng/L		99	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.15	J	ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.97	J	ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.11	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.07	J	ng/L		104	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.03	J	ng/L		102	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-116866/21-A
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116866

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.18	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.21	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.29	J	ng/L		115	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.19	J	ng/L		110	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.02	J	ng/L		101	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	79		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	103		50 - 200
13C7 PFUnA	100		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	103		50 - 200
13C3 PFHxS	107		50 - 200
13C8 PFOS	104		50 - 200
13C2-4:2-FTS	109		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: 380-120082-E-1-A MS
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 116866

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		120	106		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	109		ng/L		91	70 - 130

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-120082-E-1-A MS
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 116866

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	110		ng/L		92	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	115		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	113		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	116		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	115		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	116		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	2.7		120	115		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	114		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	114		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	116		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	116		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	116		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	115		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	113		ng/L		95	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	112		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	112		ng/L		94	70 - 130
Perfluoropentanoic acid (PFPeA)	2.7		120	113		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	114		ng/L		95	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	111		ng/L		93	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	85		50 - 200
13C6 PFDA	82		50 - 200
13C5 PFHxA	88		50 - 200
13C4 PFHpA	87		50 - 200
13C8 PFOA	84		50 - 200
13C9 PFNA	81		50 - 200
13C7 PFUnA	83		50 - 200
13C2 PFDoA	87		50 - 200
13C4 PFBA	89		50 - 200
13C5 PFPeA	90		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	106		50 - 200

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-120082-E-1-A MS
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 116866

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: 380-120082-F-1-A MSD
Matrix: Water
Analysis Batch: 116960

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 116866

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	102		ng/L		85	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	108		ng/L		90	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	103		ng/L		86	70 - 130	6	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	107		ng/L		89	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	113		ng/L		92	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		120	109		ng/L		91	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	112		ng/L		93	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	115		ng/L		95	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	122		ng/L		100	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	2.7		120	117		ng/L		95	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		120	114		ng/L		95	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	112		ng/L		92	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		120	114		ng/L		94	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	113		ng/L		94	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		120	113		ng/L		94	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	115		ng/L		96	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	109		ng/L		91	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	117		ng/L		97	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	107		ng/L		89	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	111		ng/L		93	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	111		ng/L		93	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	105		ng/L		88	70 - 130	7	30
Perfluoropentanoic acid (PFPeA)	2.7		120	115		ng/L		93	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	114		ng/L		95	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	113		ng/L		94	70 - 130	1	30

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QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	74		50 - 200
13C6 PFDA	74		50 - 200
13C5 PFHxA	77		50 - 200
13C4 PFHpA	77		50 - 200
13C8 PFOA	73		50 - 200
13C9 PFNA	69		50 - 200
13C7 PFUnA	79		50 - 200
13C2 PFDoA	87		50 - 200
13C4 PFBA	86		50 - 200
13C5 PFPeA	85		50 - 200
13C3 PFBS	113		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	111		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	112		50 - 200
13C2-8:2-FTS	110		50 - 200

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

Lab Sample ID: MBL 380-116920/19-A
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116920

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.29		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/01/24 16:17	11/03/24 17:49	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	110		70 - 130			11/01/24 16:17	11/03/24 17:49	1
13C2 PFHxA	108		70 - 130			11/01/24 16:17	11/03/24 17:49	1
13C2 PFDA	104		70 - 130			11/01/24 16:17	11/03/24 17:49	1

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QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-116920/19-A
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116920

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	105		70 - 130	11/01/24 16:17	11/03/24 17:49	1

Lab Sample ID: LCS 380-116920/21-A
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116920

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.0	51.9		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.0	52.9		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.0	49.2		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	52.8		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	52.2		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	50.0	52.5		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	50.0	50.1		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	50.0	53.3		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	50.0	49.6		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.0	51.7		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.0	51.2		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.0	50.5		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	50.0	50.5		ng/L		101	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.0	46.4		ng/L		93	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.0	51.1		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	50.0	51.6		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.0	53.2		ng/L		106	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.0	50.1		ng/L		100	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	112		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	107		70 - 130
13C3-GenX	110		70 - 130

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: MRL 380-116920/20-A
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116920

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.26	J	ng/L		113	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.14	J	ng/L		107	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.25	J	ng/L		112	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.49	J	ng/L		124	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.20	J	ng/L		110	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.11	J	ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.14	J	ng/L		107	50 - 150
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.14	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.24	J	ng/L		112	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	110		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	104		70 - 130

Lab Sample ID: 380-120239-B-1-A MS
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 116920

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.1	47.2		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.1	52.5		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.1	48.6		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.1	52.5		ng/L		105	70 - 130

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QC Sample Results

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

Job ID: 380-120078-1
 SDG: Weekly PFAS

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

Lab Sample ID: 380-120239-B-1-A MS
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 116920

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.1	53.2		ng/L		106		70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.1	49.1		ng/L		98		70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.1	50.1		ng/L		100		70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.1	50.8		ng/L		101		70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.1	48.7		ng/L		97		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.1	51.8		ng/L		103		70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.1	49.1		ng/L		98		70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.1	45.2		ng/L		90		70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.1	51.4		ng/L		103		70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.1	46.6		ng/L		93		70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.1	49.1		ng/L		98		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.1	51.4		ng/L		103		70 - 130
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.1	51.9		ng/L		104		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.1	49.5		ng/L		99		70 - 130
Surrogate		MS MS								
		%Recovery	Qualifier	Limits						
d5-NEtFOSAA		114		70 - 130						
13C2 PFHxA		105		70 - 130						
13C2 PFDA		107		70 - 130						
13C3-GenX		104		70 - 130						

Lab Sample ID: 380-120239-C-1-A MSD
Matrix: Water
Analysis Batch: 117006

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 116920

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	43.9		ng/L		87		70 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	53.8		ng/L		107		70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.5		ng/L		99		70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	54.6		ng/L		109		70 - 130	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	53.7		ng/L		107		70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	49.8		ng/L		99		70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	51.7		ng/L		103		70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	52.5		ng/L		105		70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	49.8		ng/L		99		70 - 130	2	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-120239-C-1-A MSD

Matrix: Water

Analysis Batch: 117006

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 116920

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	52.2		ng/L		104	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	51.3		ng/L		102	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	45.9		ng/L		91	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	51.9		ng/L		103	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	46.2		ng/L		92	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	48.7		ng/L		97	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	53.0		ng/L		106	70 - 130	3	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	52.2		ng/L		104	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	49.2		ng/L		98	70 - 130	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
d5-NEtFOSAA	113		70 - 130
13C2 PFHxA	106		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	104		70 - 130

Lab Sample ID: MBL 380-116952/20-A

Matrix: Water

Analysis Batch: 116980

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 116952

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		11/02/24 06:11	11/03/24 07:42	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: MBL 380-116952/20-A
Matrix: Water
Analysis Batch: 116980

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116952

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/02/24 06:11	11/03/24 07:42	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130	11/02/24 06:11	11/03/24 07:42	1
13C2 PFHxA	105		70 - 130	11/02/24 06:11	11/03/24 07:42	1
13C2 PFDA	115		70 - 130	11/02/24 06:11	11/03/24 07:42	1
13C3-GenX	93		70 - 130	11/02/24 06:11	11/03/24 07:42	1

Lab Sample ID: LCS 380-116952/22-A
Matrix: Water
Analysis Batch: 116980

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116952

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	18.3		ng/L		73	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.0		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.5		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	22.7		ng/L		91	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	20.0		ng/L		80	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	21.1		ng/L		84	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	24.0		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	24.7		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.4		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	27.0		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	25.3		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	23.5		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	25.1	25.7		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	24.7		ng/L		99	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	24.6		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	24.9		ng/L		100	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	26.1		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	21.5		ng/L		86	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	90		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	112		70 - 130

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: LCS 380-116952/22-A
Matrix: Water
Analysis Batch: 116980

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116952

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C3-GenX	89		70 - 130

Lab Sample ID: MRL 380-116952/21-A
Matrix: Water
Analysis Batch: 116980

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116952

Analyte	Spike Added	MRL MRL		Unit	D	%Rec	Limits
		Result	Qualifier				
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.80	J	ng/L		90	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.31	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.29	J	ng/L		115	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.04	J	ng/L		102	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.03	J	ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.45	J	ng/L		123	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.01	J	ng/L		101	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.29	J	ng/L		115	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.15	J	ng/L		108	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	2.14	J	ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.26	J	ng/L		113	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.13	J	ng/L		106	50 - 150

Surrogate	MRL MRL		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	94		70 - 130
13C2 PFHxA	111		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	94		70 - 130

QC Sample Results

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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

Lab Sample ID: 380-120078-1 MS
Matrix: Water
Analysis Batch: 116980

Client Sample ID: Halawa Shaft Viewing Pool
Prep Type: Total/NA
Prep Batch: 116952

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	23.3		ng/L		93		70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.9		25.1	31.8		ng/L		111		70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.0		ng/L		107		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.8		ng/L		103		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	25.0		ng/L		100		70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.6		ng/L		100		70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.5		ng/L		106		70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	28.8		ng/L		110		70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	28.8		ng/L		115		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	4.4		25.1	32.0		ng/L		110		70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	28.0		ng/L		110		70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	28.0		ng/L		109		70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	29.2		ng/L		116		70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	25.3		ng/L		101		70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	26.5		ng/L		106		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		25.1	25.8		ng/L		103		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	27.2		ng/L		108		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.4		ng/L		105		70 - 130
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
d5-NEtFOSAA	105		70 - 130							
13C2 PFHxA	115		70 - 130							
13C2 PFDA	112		70 - 130							
13C3-GenX	103		70 - 130							

Lab Sample ID: 380-120078-1 MSD
Matrix: Water
Analysis Batch: 116980

Client Sample ID: Halawa Shaft Viewing Pool
Prep Type: Total/NA
Prep Batch: 116952

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier							
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	22.9		ng/L		91		70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	3.9		25.1	30.9		ng/L		107		70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.3		ng/L		105		70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.8		ng/L		103		70 - 130	0	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-120078-1
 SDG: Weekly PFAS

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

Lab Sample ID: 380-120078-1 MSD

Matrix: Water

Analysis Batch: 116980

Client Sample ID: Halawa Shaft Viewing Pool

Prep Type: Total/NA

Prep Batch: 116952

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		25.1	25.4		ng/L		101	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	25.1		ng/L		94	70 - 130	6	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.1		ng/L		100	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	27.3		ng/L		104	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.6		ng/L		110	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	4.4		25.1	32.7		ng/L		113	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	27.6		ng/L		108	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	27.3		ng/L		106	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	28.8		ng/L		115	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	25.5		ng/L		101	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	25.7		ng/L		102	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		25.1	25.8		ng/L		103	70 - 130	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	26.7		ng/L		107	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	25.2		ng/L		100	70 - 130	5	30
Surrogate	%Recovery	MSD Qualifier	MSD	Limits							
d5-NEtFOSAA	102			70 - 130							
13C2 PFHxA	102			70 - 130							
13C2 PFDA	107			70 - 130							
13C3-GenX	95			70 - 130							

QC Association Summary

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

Job ID: 380-120078-1
SDG: Weekly PFAS

LCMS

Prep Batch: 116866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120078-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-120078-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	
MBL 380-116866/20-A	Method Blank	Total/NA	Water	533	
LCS 380-116866/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-116866/21-A	Lab Control Sample	Total/NA	Water	533	
380-120082-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-120082-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 116920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120078-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
MBL 380-116920/19-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-116920/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-116920/20-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-120239-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-120239-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 116952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120078-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
MBL 380-116952/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-116952/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-116952/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-120078-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-120078-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	

Analysis Batch: 116960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120078-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	116866
380-120078-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	533	116866
MBL 380-116866/20-A	Method Blank	Total/NA	Water	533	116866
LCS 380-116866/22-A	Lab Control Sample	Total/NA	Water	533	116866
MRL 380-116866/21-A	Lab Control Sample	Total/NA	Water	533	116866
380-120082-E-1-A MS	Matrix Spike	Total/NA	Water	533	116866
380-120082-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	116866

Analysis Batch: 116980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120078-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	116952
MBL 380-116952/20-A	Method Blank	Total/NA	Water	537.1	116952
LCS 380-116952/22-A	Lab Control Sample	Total/NA	Water	537.1	116952
MRL 380-116952/21-A	Lab Control Sample	Total/NA	Water	537.1	116952
380-120078-1 MS	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	116952
380-120078-1 MSD	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	116952

Analysis Batch: 117006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120078-2	FB: Halawa Shaft Viewing Pool	Total/NA	Water	537.1	116920
MBL 380-116920/19-A	Method Blank	Total/NA	Water	537.1	116920
LCS 380-116920/21-A	Lab Control Sample	Total/NA	Water	537.1	116920
MRL 380-116920/20-A	Lab Control Sample	Total/NA	Water	537.1	116920

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-120078-1
SDG: Weekly PFAS

LCMS (Continued)

Analysis Batch: 117006 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-120239-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	116920
380-120239-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	116920

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
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Lab Chronicle

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

Job ID: 380-120078-1
 SDG: Weekly PFAS

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-1

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			116866	HM3M	EA POM	11/01/24 12:32
Total/NA	Analysis	533		1	116960	M7ML	EA POM	11/02/24 16:02
Total/NA	Prep	537.1 DW			116952	XTD8	EA POM	11/02/24 06:11
Total/NA	Analysis	537.1		1	116980	M7ML	EA POM	11/03/24 08:15

Client Sample ID: FB: Halawa Shaft Viewing Pool

Lab Sample ID: 380-120078-2

Date Collected: 10/29/24 10:30

Matrix: Water

Date Received: 10/31/24 10:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			116866	HM3M	EA POM	11/01/24 12:32
Total/NA	Analysis	533		1	116960	M7ML	EA POM	11/02/24 16:13
Total/NA	Prep	537.1 DW			116920	E9PK	EA POM	11/01/24 16:17
Total/NA	Analysis	537.1		1	117006	SZ9R	EA POM	11/03/24 20:50

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: 380-120078-1
SDG: Weekly PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-25

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Method Summary

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

Job ID: 380-120078-1
SDG: Weekly PFAS

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: 380-120078-1
SDG: Weekly PFAS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-120078-1	Halawa Shaft Viewing Pool	Water	10/29/24 10:30	10/31/24 10:11
380-120078-2	FB: Halawa Shaft Viewing Pool	Water	10/29/24 10:30	10/31/24 10:11

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941 Corporate Center Drive
 Pomona CA 91768-2842
 Phone (626) 385-1100

Chain of Custody Record

Client Information Client Contact: Ryan Greer Phone: 808-748-5840 Dr. Ron Fenstermacher Company: City & County of Honolulu Address: 630 South Beretania Street Chemistry Lab City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5061 (Tel) Email: RFENSTERMACHER@hbws.org Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill Site: Hawaii		Lab PI: Arada, Rachelle E-Mail: Rachelle.Arada@eurofins.com Carrier Tracking No(s): State of Origin: HI PWSID:		COC No: 380-28005-2757 1 Page: Page 1 of 1 Job #:							
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: C20525101 exp 05312023 WC #:		Analysis Requested									
Sample Identification Halawa Shaft Viewing Pool FB Halawa Shaft Viewing Pool		Sample Date 10/29/24 10/29/24	Sample Time 1030 1030	Sample Type (C=Comp, G=grab) G G	Matrix (Water, Gas, Other) Water Water	Preservation Code: RA Q DA Y I 3 3 1 1	Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>	Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	626.1, 626.1, SIM 80158_GRO_LL (MOD) GRO 80158_GRO_LL_CS - HNL Ranges C10-C24/C24-C36/C8- C 18 526.2, PREC - (MOD) 526plus Plus TICs 537.1, DW_PREC - 537.1 Full List 533 - All Analytes	Total Number of Containers X	Special Instructions/Note: 380-120078 COC 
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological											
Deliverable Requested: <input type="checkbox"/> I, II, III, IV, Other (specify)											
Empty Kit Relinquished by:											
Relinquished by:		Date: 10/28/24 13:00		Method of Shipment: 77962996 3970							
Relinquished by:		Date/Time: 10/28/24 10:11		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Relinquished by:		Date/Time:		Special Instructions/QC Requirements							
Relinquished by:		Date/Time:		Received by: HBWS Company Received by: HBWS Company Received by: HBWS Company							
Custody Seals Intact:		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks: 688/3.20 22 3.0 GC							



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-120078-1

SDG Number: Weekly PFAS

Login Number: 120078

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Sanchez Velasquez, Gustavo

Question	Answer	Comment
The coolers custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	