

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-167372-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



Authorized for release by
Maria Lopez, Project Manager
Maria.Lopez@et.eurofinsus.com
(626)386-1100

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Definitions/Glossary

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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: 380-167372-1

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Job Narrative 380-167372-1

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 8/21/2025 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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-167372-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-167372-2

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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-167372-1

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	81		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C6 PFDA	77		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C5 PFHxA	88		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C4 PFHpA	85		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C8 PFOA	82		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C9 PFNA	76		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C7 PFUnA	78		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C2 PFDoA	79		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C4 PFBA	91		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C5 PFPeA	89		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C3 PFBS	108		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C3 PFHxS	107		50 - 200	08/22/25 16:28	08/23/25 14:10	1

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Client Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-167372-1

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 10:10

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C2-4:2-FTS	108		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C2-6:2-FTS	100		50 - 200	08/22/25 16:28	08/23/25 14:10	1
13C2-8:2-FTS	106		50 - 200	08/22/25 16:28	08/23/25 14:10	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		08/22/25 10:52	08/23/25 18:56	1
Perfluorooctanesulfonic acid (PFOS)	3.4		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130	08/22/25 10:52	08/23/25 18:56	1
13C2 PFHxA	112		70 - 130	08/22/25 10:52	08/23/25 18:56	1
13C2 PFDA	111		70 - 130	08/22/25 10:52	08/23/25 18:56	1
13C3-GenX	109		70 - 130	08/22/25 10:52	08/23/25 18:56	1

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-167372-2

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 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		08/22/25 16:28	08/23/25 14:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1

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Client Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-167372-2

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 10:10

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		08/22/25 16:28	08/23/25 14:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/22/25 16:28	08/23/25 14:20	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C6 PFDA	109		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C5 PFHxA	109		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C4 PFHpA	106		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C8 PFOA	106		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C9 PFNA	101		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C7 PFUnA	106		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C2 PFDoA	105		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C4 PFBA	106		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C5 PFPeA	104		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C3 PFBS	104		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C3 PFHxS	107		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C8 PFOS	100		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C2-4:2-FTS	106		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C2-6:2-FTS	102		50 - 200	08/22/25 16:28	08/23/25 14:20	1
13C2-8:2-FTS	106		50 - 200	08/22/25 16:28	08/23/25 14:20	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-167372-2

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 10:10

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		08/22/25 10:52	08/23/25 19:06	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/22/25 10:52	08/23/25 19:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			08/22/25 10:52	08/23/25 19:06	1
13C2 PFHxA	114		70 - 130			08/22/25 10:52	08/23/25 19:06	1
13C2 PFDA	117		70 - 130			08/22/25 10:52	08/23/25 19:06	1
13C3-GenX	109		70 - 130			08/22/25 10:52	08/23/25 19:06	1

Action Limit Summary

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-167372-1

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)	3.6		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		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)	3.4		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.7		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-167372-2

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	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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-167372-1	Halawa Shaft Viewing Pool	110	112	111	109
380-167372-2	Halawa Shaft Viewing Pool	106	114	117	109
	Blank				
380-167409-B-1-A MS	Matrix Spike	119	116	116	111
380-167409-B-1-B MSD	Matrix Spike Duplicate	104	112	113	108
LCS 380-170046/24-A	Lab Control Sample	109	113	114	112
MBL 380-170046/22-A	Method Blank	116	116	122	117
MRL 380-170046/23-A	Lab Control Sample	111	113	114	112
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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDaA (50-200)
380-167372-1	Halawa Shaft Viewing Pool	81	77	88	85	82	76	78	79
380-167372-2	Halawa Shaft Viewing Pool	97	109	109	106	106	101	106	105
	Blank								
380-167409-A-1-B MS	Matrix Spike	58	79	66	64	69	75	79	80
380-167409-A-1-C MSD	Matrix Spike Duplicate	82	91	87	85	90	90	88	88
LCS 380-170110/22-A	Lab Control Sample	101	103	106	109	110	107	104	100
MBL 380-170110/20-A	Method Blank	100	105	108	107	114	109	102	100
MRL 380-170110/21-A	Lab Control Sample	100	109	111	110	117	112	106	103

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)
380-167372-1	Halawa Shaft Viewing Pool	91	89	108	107	105	108	100	106
380-167372-2	Halawa Shaft Viewing Pool	106	104	104	107	100	106	102	106
	Blank								
380-167409-A-1-B MS	Matrix Spike	64	61	99	104	104	94	96	99
380-167409-A-1-C MSD	Matrix Spike Duplicate	88	91	106	103	109	99	98	94
LCS 380-170110/22-A	Lab Control Sample	108	111	103	105	106	99	97	97
MBL 380-170110/20-A	Method Blank	110	112	102	105	107	105	102	98
MRL 380-170110/21-A	Lab Control Sample	110	113	107	111	108	110	102	100

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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-170110/20-A

Matrix: Water

Analysis Batch: 170172

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 170110

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		08/22/25 16:28	08/23/25 12:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/22/25 16:28	08/23/25 12:22	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C6 PFDA	105		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C5 PFHxA	108		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C4 PFHpA	107		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C8 PFOA	114		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C9 PFNA	109		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C7 PFUnA	102		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C2 PFDoA	100		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C4 PFBA	110		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C5 PFPeA	112		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C3 PFBS	102		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C3 PFHxS	105		50 - 200	08/22/25 16:28	08/23/25 12:22	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-170110/20-A

Matrix: Water

Analysis Batch: 170172

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 170110

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	107		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C2-4:2-FTS	105		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C2-6:2-FTS	102		50 - 200	08/22/25 16:28	08/23/25 12:22	1
13C2-8:2-FTS	98		50 - 200	08/22/25 16:28	08/23/25 12:22	1

Lab Sample ID: LCS 380-170110/22-A

Matrix: Water

Analysis Batch: 170172

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	104		ng/L		87	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	120	110		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	115		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	116		ng/L		97	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	114		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	120	113		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	120	116		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	112		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	116		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	120	112		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	120	112		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	116		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	120	111		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	111		ng/L		92	70 - 130
Perfluorobutanoic acid (PFBA)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	117		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	111		ng/L		93	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	112		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	119		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	120		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	115		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	120	113		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	118		ng/L		98	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-170110/22-A

Matrix: Water

Analysis Batch: 170172

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170110

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	114		ng/L		95	70 - 130
	LCS	LCS					
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	101		50 - 200				
13C6 PFDA	103		50 - 200				
13C5 PFHxA	106		50 - 200				
13C4 PFHpA	109		50 - 200				
13C8 PFOA	110		50 - 200				
13C9 PFNA	107		50 - 200				
13C7 PFUnA	104		50 - 200				
13C2 PFDoA	100		50 - 200				
13C4 PFBA	108		50 - 200				
13C5 PFPeA	111		50 - 200				
13C3 PFBS	103		50 - 200				
13C3 PFHxS	105		50 - 200				
13C8 PFOS	106		50 - 200				
13C2-4:2-FTS	99		50 - 200				
13C2-6:2-FTS	97		50 - 200				
13C2-8:2-FTS	97		50 - 200				

Lab Sample ID: MRL 380-170110/21-A

Matrix: Water

Analysis Batch: 170172

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170110

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.82	J	ng/L		91	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	2.00	1.95	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.04	J	ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.06	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-170110/21-A

Matrix: Water

Analysis Batch: 170172

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170110

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.05	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.08	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	1.97	J	ng/L		98	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.88	J	ng/L		94	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.03	J	ng/L		102	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.97	J	ng/L		98	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	100		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	110		50 - 200
13C8 PFOA	117		50 - 200
13C9 PFNA	112		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	103		50 - 200
13C4 PFBA	110		50 - 200
13C5 PFPeA	113		50 - 200
13C3 PFBS	107		50 - 200
13C3 PFHxS	111		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-167409-A-1-B MS

Matrix: Water

Analysis Batch: 170209

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 170110

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	54.7		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	56.8		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	59.4		ng/L		98	70 - 130

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QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-167409-A-1-B MS

Matrix: Water

Analysis Batch: 170209

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 170110

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	60.9		ng/L		101	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	59.6		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	57.7		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	61.0		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	62.3		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	59.8		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	56.2		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	59.8		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	62.6		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	58.2		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	56.8		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	59.3		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	60.5		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	64.6		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	59.2		ng/L		98	70 - 130
Nonafluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		60.4	53.1		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	61.2		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	58.0		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	60.0		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	59.9		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	61.8		ng/L		102	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	59.9		ng/L		99	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	58		50 - 200
13C6 PFDA	79		50 - 200
13C5 PFHxA	66		50 - 200
13C4 PFHpA	64		50 - 200
13C8 PFOA	69		50 - 200
13C9 PFNA	75		50 - 200
13C7 PFUnA	79		50 - 200
13C2 PFDoA	80		50 - 200
13C4 PFBA	64		50 - 200
13C5 PFPeA	61		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	104		50 - 200

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QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-167409-A-1-B MS

Matrix: Water

Analysis Batch: 170209

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 170110

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	94		50 - 200
13C2-6:2-FTS	96		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: 380-167409-A-1-C MSD

Matrix: Water

Analysis Batch: 170209

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 170110

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		60.2	53.2		ng/L		88	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		60.2	56.1		ng/L		93	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	60.3		ng/L		100	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	62.4		ng/L		104	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	59.7		ng/L		99	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	58.6		ng/L		97	70 - 130	2	30
Perfluorododecanoic acid (PFDaA)	<2.0		60.2	58.7		ng/L		97	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	59.8		ng/L		99	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	62.3		ng/L		103	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	58.7		ng/L		98	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	60.2		ng/L		100	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	59.6		ng/L		99	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	56.8		ng/L		94	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	57.4		ng/L		95	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.2		ng/L		100	70 - 130	1	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	62.0		ng/L		103	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.3		ng/L		103	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	59.0		ng/L		98	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	55.3		ng/L		92	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		60.2	60.0		ng/L		100	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	59.9		ng/L		99	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	56.9		ng/L		95	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	57.8		ng/L		96	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	61.0		ng/L		101	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	61.7		ng/L		103	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	82		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	87		50 - 200
13C4 PFHpA	85		50 - 200
13C8 PFOA	90		50 - 200
13C9 PFNA	90		50 - 200
13C7 PFUnA	88		50 - 200
13C2 PFDoA	88		50 - 200
13C4 PFBA	88		50 - 200
13C5 PFPeA	91		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	98		50 - 200
13C2-8:2-FTS	94		50 - 200

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

Lab Sample ID: MBL 380-170046/22-A
Matrix: Water
Analysis Batch: 170166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170046

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		08/22/25 10:52	08/23/25 17:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/22/25 10:52	08/23/25 17:11	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130			08/22/25 10:52	08/23/25 17:11	1
13C2 PFHxA	116		70 - 130			08/22/25 10:52	08/23/25 17:11	1
13C2 PFDA	122		70 - 130			08/22/25 10:52	08/23/25 17:11	1

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QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-170046/22-A
Matrix: Water
Analysis Batch: 170166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 170046

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	117		70 - 130	08/22/25 10:52	08/23/25 17:11	1

Lab Sample ID: LCS 380-170046/24-A
Matrix: Water
Analysis Batch: 170166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170046

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	25.1	25.2		ng/L		101	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	25.1	25.6		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	26.7		ng/L		107	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.7		ng/L		103	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	24.9		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	25.7		ng/L		103	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.6		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	27.3		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.7		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.2		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	26.5		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.1		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	25.1	25.9		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	24.6		ng/L		98	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	27.0		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	26.1		ng/L		104	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.7		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	26.4		ng/L		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	109		70 - 130
13C2 PFHxA	113		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	112		70 - 130

QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-170046/23-A

Matrix: Water

Analysis Batch: 170166

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170046

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.58	J	ng/L		129	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.44	J	ng/L		122	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.38	J	ng/L		119	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDaA)	2.00	2.47	J	ng/L		123	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.48	J	ng/L		124	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.57	J	ng/L		128	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.56	J	ng/L		127	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.51	J	ng/L		125	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.46	J	ng/L		123	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.50	J	ng/L		125	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.51	J	ng/L		125	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.46	J	ng/L		123	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.40	J	ng/L		120	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	113		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	112		70 - 130

Lab Sample ID: 380-167409-B-1-A MS

Matrix: Water

Analysis Batch: 170166

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 170046

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		25.1	24.9		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.5		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	27.0		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.6		ng/L		106	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-167409-B-1-A MS

Matrix: Water

Analysis Batch: 170166

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 170046

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits		
	Result	Qualifier	Added	Result	Qualifier				Limits			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	26.3		ng/L		105	70 - 130			
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	25.5		ng/L		102	70 - 130			
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.1		ng/L		104	70 - 130			
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.9		ng/L		107	70 - 130			
Perfluorodecanoic acid (PFDA)	<2.0		25.1	28.0		ng/L		112	70 - 130			
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	27.0		ng/L		108	70 - 130			
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	26.1		ng/L		104	70 - 130			
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	26.8		ng/L		107	70 - 130			
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.5		ng/L		110	70 - 130			
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.2		ng/L		97	70 - 130			
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	27.0		ng/L		108	70 - 130			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	26.5		ng/L		106	70 - 130			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	25.1		ng/L		100	70 - 130			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	27.4		ng/L		109	70 - 130			
		MS	MS									
Surrogate	%Recovery	Qualifier	Limits									
d5-NEtFOSAA	119		70 - 130									
13C2 PFHxA	116		70 - 130									
13C2 PFDA	116		70 - 130									
13C3-GenX	111		70 - 130									

Lab Sample ID: 380-167409-B-1-B MSD

Matrix: Water

Analysis Batch: 170166

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 170046

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	23.9		ng/L		95	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.0		ng/L		103	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.8		ng/L		103	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	24.8		ng/L		99	70 - 130	7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	23.7		ng/L		94	70 - 130	10	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	25.6		ng/L		102	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	25.4		ng/L		101	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.2		ng/L		104	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	26.0		ng/L		104	70 - 130	7	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-167409-B-1-B MSD

Matrix: Water

Analysis Batch: 170166

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 170046

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	26.8		ng/L		107	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	26.5		ng/L		105	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	26.0		ng/L		104	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.9		ng/L		107	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.2		ng/L		96	70 - 130	0	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	26.3		ng/L		105	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	24.7		ng/L		99	70 - 130	7	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	24.4		ng/L		97	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	25.7		ng/L		103	70 - 130	6	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	104		70 - 130								
13C2 PFHxA	112		70 - 130								
13C2 PFDA	113		70 - 130								
13C3-GenX	108		70 - 130								

QC Association Summary

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 170046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-167372-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1 DW	
380-167372-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	537.1 DW	
MBL 380-170046/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-170046/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-170046/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-167409-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-167409-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 170110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-167372-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	
380-167372-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	533	
MBL 380-170110/20-A	Method Blank	Total/NA	Water	533	
LCS 380-170110/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-170110/21-A	Lab Control Sample	Total/NA	Water	533	
380-167409-A-1-B MS	Matrix Spike	Total/NA	Water	533	
380-167409-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 170166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-167372-1	Halawa Shaft Viewing Pool	Total/NA	Water	537.1	170046
380-167372-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	537.1	170046
MBL 380-170046/22-A	Method Blank	Total/NA	Water	537.1	170046
LCS 380-170046/24-A	Lab Control Sample	Total/NA	Water	537.1	170046
MRL 380-170046/23-A	Lab Control Sample	Total/NA	Water	537.1	170046
380-167409-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	170046
380-167409-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	170046

Analysis Batch: 170172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-167372-1	Halawa Shaft Viewing Pool	Total/NA	Water	533	170110
380-167372-2	Halawa Shaft Viewing Pool Blank	Total/NA	Water	533	170110
MBL 380-170110/20-A	Method Blank	Total/NA	Water	533	170110
LCS 380-170110/22-A	Lab Control Sample	Total/NA	Water	533	170110
MRL 380-170110/21-A	Lab Control Sample	Total/NA	Water	533	170110

Analysis Batch: 170209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-167409-A-1-B MS	Matrix Spike	Total/NA	Water	533	170110
380-167409-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	170110

Lab Chronicle

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: Halawa Shaft Viewing Pool

Lab Sample ID: 380-167372-1

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			170110	N8NE	EA POM	08/22/25 16:28
Total/NA	Analysis	533		1	170172	M7ML	EA POM	08/23/25 14:10
Total/NA	Prep	537.1 DW			170046	E9PK	EA POM	08/22/25 10:52
Total/NA	Analysis	537.1		1	170166	M7ML	EA POM	08/23/25 18:56

Client Sample ID: Halawa Shaft Viewing Pool Blank

Lab Sample ID: 380-167372-2

Date Collected: 08/19/25 09:55

Matrix: Water

Date Received: 08/21/25 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			170110	N8NE	EA POM	08/22/25 16:28
Total/NA	Analysis	533		1	170172	M7ML	EA POM	08/23/25 14:20
Total/NA	Prep	537.1 DW			170046	E9PK	EA POM	08/22/25 10:52
Total/NA	Analysis	537.1		1	170166	M7ML	EA POM	08/23/25 19:06

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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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Method Summary

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

Job ID: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

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: 380-167372-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-167372-1	Halawa Shaft Viewing Pool	Water	08/19/25 09:55	08/21/25 10:10	Hawaii
380-167372-2	Halawa Shaft Viewing Pool Blank	Water	08/19/25 09:55	08/21/25 10:10	Hawaii

Chain of Custody Record

[illegible]

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-167372-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 167372

List Number: 1

Creator: Hernandez, Orlando

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	