

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-158537-1

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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Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Action Limit Summary	11
Surrogate Summary	12
Isotope Dilution Summary	13
QC Sample Results	14
QC Association Summary	25
Lab Chronicle	26
Certification Summary	27
Method Summary	28
Sample Summary	29
Chain of Custody	30
Receipt Checklists	31



Definitions/Glossary

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

Job ID: 380-158537-1
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: 380-158537-1

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Job Narrative 380-158537-1

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 7/3/2025 9:42 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C.

PFAS

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: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-2

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: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-1

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

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 (11CI-PF3OUdS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorohexanesulfonic acid (PFHxS)	3.2		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorooctanesulfonic acid (PFOS)	3.1		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:05	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	80		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C6 PFDA	73		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C5 PFHxA	85		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C4 PFHpA	86		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C8 PFOA	81		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C9 PFNA	78		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C7 PFUnA	73		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C2 PFDoA	75		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C4 PFBA	91		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C5 PFPeA	96		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C3 PFBS	112		50 - 200			07/07/25 07:30	07/08/25 00:05	1
13C3 PFHxS	109		50 - 200			07/07/25 07:30	07/08/25 00:05	1

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Client Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-1

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	114		50 - 200	07/07/25 07:30	07/08/25 00:05	1
13C2-4:2-FTS	143		50 - 200	07/07/25 07:30	07/08/25 00:05	1
13C2-6:2-FTS	122		50 - 200	07/07/25 07:30	07/08/25 00:05	1
13C2-8:2-FTS	112		50 - 200	07/07/25 07:30	07/08/25 00:05	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		07/05/25 19:16	07/07/25 10:25	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorohexanesulfonic acid (PFHxS)	3.6		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			07/05/25 19:16	07/07/25 10:25	1
13C2 PFHxA	122		70 - 130			07/05/25 19:16	07/07/25 10:25	1
13C2 PFDA	108		70 - 130			07/05/25 19:16	07/07/25 10:25	1
13C3-GenX	117		70 - 130			07/05/25 19:16	07/07/25 10:25	1

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-2

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1

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Client Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-2

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

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		07/07/25 07:30	07/08/25 00:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/07/25 07:30	07/08/25 00:14	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	97		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C6 PFDA	111		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C5 PFHxA	107		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C4 PFHpA	111		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C8 PFOA	111		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C9 PFNA	113		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C7 PFUnA	110		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C2 PFDoA	108		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C4 PFBA	114		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C5 PFPeA	117		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C3 PFBS	109		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C3 PFHxS	107		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C8 PFOS	111		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C2-4:2-FTS	128		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C2-6:2-FTS	113		50 - 200			07/07/25 07:30	07/08/25 00:14	1
13C2-8:2-FTS	110		50 - 200			07/07/25 07:30	07/08/25 00:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-2

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

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		07/05/25 19:16	07/07/25 10:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/05/25 19:16	07/07/25 10:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			07/05/25 19:16	07/07/25 10:35	1
13C2 PFHxA	111		70 - 130			07/05/25 19:16	07/07/25 10:35	1
13C2 PFDA	114		70 - 130			07/05/25 19:16	07/07/25 10:35	1
13C3-GenX	107		70 - 130			07/05/25 19:16	07/07/25 10:35	1

Action Limit Summary

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-1

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)	3.2		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.1		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)	3.5		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)	3.6		ng/L	10	2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	537.1	Total/NA

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-2

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: 380-158537-1
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)
380-158537-1	HALAWA SHAFT VIEWING POOL	111	122	108	117
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	104	111	114	107
380-158605-B-1-A MS	Matrix Spike	109	118	109	114
380-158605-C-1-A MSD	Matrix Spike Duplicate	108	126	113	120
LCS 380-161172/23-A	Lab Control Sample	106	118	113	114
MBL 380-161172/21-A	Method Blank	98	120	118	119
MRL 380-161172/22-A	Lab Control Sample	105	117	112	116
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: 380-158537-1
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)
380-158537-1	HALAWA SHAFT VIEWING POOL	80	73	85	86	81	78	73	75
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	97	111	107	111	111	113	110	108
380-158604-B-2-A MS	Matrix Spike	103	107	102	104	108	106	107	105
380-158604-C-2-A MSD	Matrix Spike Duplicate	98	107	100	102	106	106	107	107
LCS 380-161243/22-A	Lab Control Sample	101	112	108	109	112	113	110	111
MBL 380-161243/20-A	Method Blank	102	113	108	111	114	115	113	110
MRL 380-161243/21-A	Lab Control Sample	101	113	107	112	115	114	113	111
		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)
380-158537-1	HALAWA SHAFT VIEWING POOL	91	96	112	109	114	143	122	112
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	114	117	109	107	111	128	113	110
380-158604-B-2-A MS	Matrix Spike	108	119	105	103	109	132	116	107
380-158604-C-2-A MSD	Matrix Spike Duplicate	107	118	101	102	107	123	111	105
LCS 380-161243/22-A	Lab Control Sample	113	119	106	107	112	115	108	108
MBL 380-161243/20-A	Method Blank	113	117	106	105	113	128	110	107
MRL 380-161243/21-A	Lab Control Sample	113	118	108	108	113	128	114	109
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: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-161243/20-A

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 161243

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		07/07/25 07:30	07/07/25 22:48	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/07/25 07:30	07/07/25 22:48	1
Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C6 PFDA	113		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C5 PFHxA	108		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C4 PFHpA	111		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C8 PFOA	114		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C9 PFNA	115		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C7 PFUnA	113		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C2 PFDoA	110		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C4 PFBA	113		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C5 PFPeA	117		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C3 PFBS	106		50 - 200			07/07/25 07:30	07/07/25 22:48	1
13C3 PFHxS	105		50 - 200			07/07/25 07:30	07/07/25 22:48	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-161243/20-A

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 161243

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	113		50 - 200	07/07/25 07:30	07/07/25 22:48	1
13C2-4:2-FTS	128		50 - 200	07/07/25 07:30	07/07/25 22:48	1
13C2-6:2-FTS	110		50 - 200	07/07/25 07:30	07/07/25 22:48	1
13C2-8:2-FTS	107		50 - 200	07/07/25 07:30	07/07/25 22:48	1

Lab Sample ID: LCS 380-161243/22-A

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	102		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	106		ng/L		88	70 - 130
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	120	113		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	120		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	114		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	120	108		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	120	112		ng/L		93	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	109		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	112		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	120	108		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	120	110		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	109		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	120	107		ng/L		89	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	115		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	120	113		ng/L		94	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	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	111		ng/L		92	70 - 130
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	120	106		ng/L		88	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	118		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	114		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	109		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	120	111		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	105		ng/L		87	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-161243/22-A

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	114		ng/L		95	70 - 130
		LCS	LCS				
		%Recovery	Qualifier	Limits			
13C3 HFPO-DA	101			50 - 200			
13C6 PFDA	112			50 - 200			
13C5 PFHxA	108			50 - 200			
13C4 PFHpA	109			50 - 200			
13C8 PFOA	112			50 - 200			
13C9 PFNA	113			50 - 200			
13C7 PFUnA	110			50 - 200			
13C2 PFDoA	111			50 - 200			
13C4 PFBA	113			50 - 200			
13C5 PFPeA	119			50 - 200			
13C3 PFBS	106			50 - 200			
13C3 PFHxS	107			50 - 200			
13C8 PFOS	112			50 - 200			
13C2-4:2-FTS	115			50 - 200			
13C2-6:2-FTS	108			50 - 200			
13C2-8:2-FTS	108			50 - 200			

Lab Sample ID: MRL 380-161243/21-A

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161243

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.91	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.85	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.93	J	ng/L		96	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.00	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.92	J	ng/L		96	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.98	J	ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.05	J	ng/L		102	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.00	J	ng/L		99	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.00	J	ng/L		99	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-161243/21-A

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161243

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.11	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.16	J	ng/L		107	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.11	J	ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.12	J	ng/L		106	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	2.01	1.91	J	ng/L		95	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.04	J	ng/L		102	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.85	J	ng/L		92	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.97	J	ng/L		98	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.95	J	ng/L		97	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	101		50 - 200
13C6 PFDA	113		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	112		50 - 200
13C8 PFOA	115		50 - 200
13C9 PFNA	114		50 - 200
13C7 PFUnA	113		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	113		50 - 200
13C5 PFPeA	118		50 - 200
13C3 PFBS	108		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	113		50 - 200
13C2-4:2-FTS	128		50 - 200
13C2-6:2-FTS	114		50 - 200
13C2-8:2-FTS	109		50 - 200

Lab Sample ID: 380-158604-B-2-A MS

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 161243

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	108		ng/L		90	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		92	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	113		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-158604-B-2-A MS

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 161243

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	116		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	5.8		120	118		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	111		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	114		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	5.8		120	123		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	2.3		120	114		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	112		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	9.3		120	119		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	2.9		120	111		ng/L		90	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	112		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	4.0		120	115		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	110		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	114		ng/L		95	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		120	120		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	116		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	117		ng/L		97	70 - 130
Perfluoropentanoic acid (PFPeA)	2.5		120	115		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	107		ng/L		89	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	116		ng/L		95	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	103		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	104		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	108		50 - 200
13C5 PFPeA	119		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	109		50 - 200

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QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-158604-B-2-A MS

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 161243

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	132		50 - 200
13C2-6:2-FTS	116		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: 380-158604-C-2-A MSD

Matrix: Water

Analysis Batch: 161348

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 161243

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	114		ng/L		94	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	115		ng/L		95	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	116		ng/L		96	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	122		ng/L		101	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	5.8		121	126		ng/L		99	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		121	115		ng/L		95	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	116		ng/L		96	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	114		ng/L		93	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	5.8		121	127		ng/L		100	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	2.3		121	118		ng/L		96	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		121	115		ng/L		94	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	9.3		121	127		ng/L		97	70 - 130	6	30
Perfluorooctanoic acid (PFOA)	2.9		121	116		ng/L		94	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	120		ng/L		99	70 - 130	7	30
Perfluorobutanoic acid (PFBA)	4.0		121	121		ng/L		97	70 - 130	6	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	119		ng/L		98	70 - 130	3	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	116		ng/L		96	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	115		ng/L		95	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	110		ng/L		91	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	127		ng/L		105	70 - 130	6	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	122		ng/L		100	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	124		ng/L		102	70 - 130	6	30
Perfluoropentanoic acid (PFPeA)	2.5		121	118		ng/L		95	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	113		ng/L		94	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	119		ng/L		97	70 - 130	3	30

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QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	118		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	102		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	123		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	105		50 - 200

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

Lab Sample ID: MBL 380-161172/21-A
Matrix: Water
Analysis Batch: 161245

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 161172

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		07/05/25 19:16	07/07/25 08:59	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Perfluorotridecanoic acid (PFTTrDA)	<0.36		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/05/25 19:16	07/07/25 08:59	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	98		70 - 130			07/05/25 19:16	07/07/25 08:59	1
13C2 PFHxA	120		70 - 130			07/05/25 19:16	07/07/25 08:59	1
13C2 PFDA	118		70 - 130			07/05/25 19:16	07/07/25 08:59	1

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QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-161172/21-A

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 161172

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	119		70 - 130	07/05/25 19:16	07/07/25 08:59	1

Lab Sample ID: LCS 380-161172/23-A

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	25.0	24.9		ng/L		100	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	25.0	23.9		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.0	24.5		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	24.4		ng/L		98	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	23.0		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	25.0	28.0		ng/L		112	70 - 130
Perfluorododecanoic acid (PFDoA)	25.0	26.7		ng/L		107	70 - 130
Perfluorooctanoic acid (PFOA)	25.0	25.8		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	25.0	24.6		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.0	25.4		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.0	23.6		ng/L		94	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.0	26.1		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	25.0	24.5		ng/L		98	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.0	29.8		ng/L		119	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.0	27.8		ng/L		111	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.0	24.2		ng/L		97	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.0	23.8		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.0	25.7		ng/L		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	118		70 - 130
13C2 PFDA	113		70 - 130
13C3-GenX	114		70 - 130

QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-161172/22-A

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 161172

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	2.00	2.01	J	ng/L		101	50 - 150
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.15	J	ng/L		107	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.02	J	ng/L		101	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.89	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.21	J	ng/L		110	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.15	J	ng/L		108	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.89	J	ng/L		95	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.41	J	ng/L		121	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.18	J	ng/L		109	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.93	J	ng/L		97	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.89	J	ng/L		94	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.16	J	ng/L		108	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	105		70 - 130
13C2 PFHxA	117		70 - 130
13C2 PFDA	112		70 - 130
13C3-GenX	116		70 - 130

Lab Sample ID: 380-158605-B-1-A MS

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 161172

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		25.1	24.4		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	23.8		ng/L		95	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	24.6		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	24.1		ng/L		96	70 - 130

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QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-158605-B-1-A MS

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 161172

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits		
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		25.1	23.3		ng/L		93	70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	27.3		ng/L		109	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.0		ng/L		103	70 - 130		
Perfluorooctanoic acid (PFOA)	<2.0		25.1	25.3		ng/L		101	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		25.1	23.6		ng/L		94	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	24.7		ng/L		97	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	23.8		ng/L		95	70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	24.7		ng/L		98	70 - 130		
Perfluorononanoic acid (PFNA)	<2.0		25.1	24.2		ng/L		96	70 - 130		
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	27.8		ng/L		111	70 - 130		
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	26.2		ng/L		104	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	23.2		ng/L		92	70 - 130		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	23.3		ng/L		93	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	25.1		ng/L		100	70 - 130		

Lab Sample ID: 380-158605-C-1-A MSD

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 161172

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	26.2		ng/L		104	70 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	25.0		ng/L		100	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.2		ng/L		100	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	24.8		ng/L		99	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		25.1	23.9		ng/L		95	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	30.4		ng/L		121	70 - 130	11	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	26.4		ng/L		105	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.8		ng/L		107	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	24.6		ng/L		98	70 - 130	4	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-158605-C-1-A MSD

Matrix: Water

Analysis Batch: 161245

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 161172

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	25.8		ng/L		101	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	24.2		ng/L		96	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	26.9		ng/L		107	70 - 130	9	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	25.4		ng/L		101	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	28.1		ng/L		112	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	27.0		ng/L		107	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	24.4		ng/L		97	70 - 130	5	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	23.5		ng/L		94	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.6		ng/L		106	70 - 130	6	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	108		70 - 130								
13C2 PFHxA	126		70 - 130								
13C2 PFDA	113		70 - 130								
13C3-GenX	120		70 - 130								

QC Association Summary

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 161172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-158537-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-161172/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-161172/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-161172/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-158605-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-158605-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 161243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-158537-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-161243/20-A	Method Blank	Total/NA	Water	533	
LCS 380-161243/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-161243/21-A	Lab Control Sample	Total/NA	Water	533	
380-158604-B-2-A MS	Matrix Spike	Total/NA	Water	533	
380-158604-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 161245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-158537-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	161172
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	161172
MBL 380-161172/21-A	Method Blank	Total/NA	Water	537.1	161172
LCS 380-161172/23-A	Lab Control Sample	Total/NA	Water	537.1	161172
MRL 380-161172/22-A	Lab Control Sample	Total/NA	Water	537.1	161172
380-158605-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	161172
380-158605-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	161172

Analysis Batch: 161348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-158537-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	161243
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	161243
MBL 380-161243/20-A	Method Blank	Total/NA	Water	533	161243
LCS 380-161243/22-A	Lab Control Sample	Total/NA	Water	533	161243
MRL 380-161243/21-A	Lab Control Sample	Total/NA	Water	533	161243
380-158604-B-2-A MS	Matrix Spike	Total/NA	Water	533	161243
380-158604-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	161243

Lab Chronicle

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

Job ID: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-1

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			161243	XTD8	EA POM	07/07/25 07:30
Total/NA	Analysis	533		1	161348	SZ9R	EA POM	07/08/25 00:05
Total/NA	Prep	537.1 DW			161172	E9PK	EA POM	07/05/25 19:16
Total/NA	Analysis	537.1		1	161245	M7ML	EA POM	07/07/25 10:25

Client Sample ID: FB: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-158537-2

Date Collected: 07/01/25 09:35

Matrix: Water

Date Received: 07/03/25 09:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			161243	XTD8	EA POM	07/07/25 07:30
Total/NA	Analysis	533		1	161348	SZ9R	EA POM	07/08/25 00:14
Total/NA	Prep	537.1 DW			161172	E9PK	EA POM	07/05/25 19:16
Total/NA	Analysis	537.1		1	161245	M7ML	EA POM	07/07/25 10:35

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: 380-158537-1
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

- 1
- 2
- 3
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- 17

Method Summary

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

Job ID: 380-158537-1
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: 380-158537-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-158537-1	HALAWA SHAFT VIEWING POOL	Water	07/01/25 09:35	07/03/25 09:42
380-158537-2	FB: HALAWA SHAFT VIEWING POOL	Water	07/01/25 09:35	07/03/25 09:42

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

Ver: 04/02/2024

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-158537-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 158537

List Number: 1

Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

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