

ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/30/2025 5:29:59 PM

JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-157417-1

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

Generated
6/30/2025 5:29:59 PM

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

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

Definitions/Glossary

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Qualifiers

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: 380-157417-1

Job ID: 380-157417-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-157417-1

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

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

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

Receipt

The samples were received on 6/26/2025 9:47 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 2.2°C.

PFAS

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

Eurofins Eaton Analytical Pomona

Detection Summary

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.5		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-1

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

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		06/27/25 16:35	06/29/25 14:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorooctanesulfonic acid (PFOS)	3.5		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 14:52	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	65		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C6 PFDA	73		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C5 PFHxA	69		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C4 PFHpA	69		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C8 PFOA	70		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C9 PFNA	73		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C7 PFUnA	82		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C2 PFDoA	85		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C4 PFBA	76		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C5 PFPeA	74		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C3 PFBS	97		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C3 PFHxS	97		50 - 200	06/27/25 16:35	06/29/25 14:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-1

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	96		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C2-4:2-FTS	112		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C2-6:2-FTS	101		50 - 200	06/27/25 16:35	06/29/25 14:52	1
13C2-8:2-FTS	104		50 - 200	06/27/25 16:35	06/29/25 14:52	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorooctanesulfonic acid (PFOS)	3.8		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorohexanesulfonic acid (PFHxS)	4.5		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	106		70 - 130			06/29/25 17:43	06/30/25 12:43	1
13C2 PFHxA	104		70 - 130			06/29/25 17:43	06/30/25 12:43	1
13C2 PFDA	103		70 - 130			06/29/25 17:43	06/30/25 12:43	1
13C3-GenX	90		70 - 130			06/29/25 17:43	06/30/25 12:43	1

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-2

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-2

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

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		06/27/25 16:35	06/29/25 15:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/27/25 16:35	06/29/25 15:02	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C6 PFDA	95		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C5 PFHxA	97		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C4 PFHpA	97		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C8 PFOA	100		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C9 PFNA	98		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C7 PFUnA	99		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C2 PFDoA	102		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C4 PFBA	101		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C5 PFPeA	102		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C3 PFBS	104		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C3 PFHxS	99		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C8 PFOS	96		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C2-4:2-FTS	96		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C2-6:2-FTS	96		50 - 200			06/27/25 16:35	06/29/25 15:02	1
13C2-8:2-FTS	96		50 - 200			06/27/25 16:35	06/29/25 15:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-2

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/25 17:43	06/30/25 12:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	96		70 - 130			06/29/25 17:43	06/30/25 12:54	1
13C2 PFHxA	100		70 - 130			06/29/25 17:43	06/30/25 12:54	1
13C2 PFDA	103		70 - 130			06/29/25 17:43	06/30/25 12:54	1
13C3-GenX	83		70 - 130			06/29/25 17:43	06/30/25 12:54	1

Action Limit Summary

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-1

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)	3.7		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		ng/L	4	2.0	533	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	533	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10	2.0	537.1	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.8		ng/L	4	2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4	2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.5		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: 380-157417-2

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: 380-157417-1
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)
380-157417-1	HALAWA SHAFT VIEWING POOL	106	104	103	90
380-157417-2	FB HALAWA SHAFT VIEWING POOL	96	100	103	83
380-157423-B-1-A MS	Matrix Spike	106	110	107	90
380-157423-B-1-B MSD	Matrix Spike Duplicate	101	101	104	87
LCS 380-160279/24-A	Lab Control Sample	91	101	118	85
MBL 380-160279/22-A	Method Blank	103	108	111	88
MRL 380-160279/23-A	Lab Control Sample	103	103	108	91
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: 380-157417-1
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)	PFD _o A (50-200)
380-157417-1	HALAWA SHAFT VIEWING POOL	65	73	69	69	70	73	82	85
380-157417-2	FB HALAWA SHAFT VIEWING POOL	87	95	97	97	100	98	99	102
380-157423-A-1-B MS	Matrix Spike	59	68	62	62	64	68	79	86
380-157423-A-1-C MSD	Matrix Spike Duplicate	74	81	75	77	79	81	90	96
LCS 380-160192/22-A	Lab Control Sample	98	95	100	98	99	100	102	99
MBL 380-160192/20-A	Method Blank	95	91	100	96	99	100	96	95
MRL 380-160192/21-A	Lab Control Sample	97	95	102	100	101	104	105	105
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFP _e A (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-157417-1	HALAWA SHAFT VIEWING POOL	76	74	97	97	96	112	101	104
380-157417-2	FB HALAWA SHAFT VIEWING POOL	101	102	104	99	96	96	96	96
380-157423-A-1-B MS	Matrix Spike	64	62	90	92	96	94	95	100
380-157423-A-1-C MSD	Matrix Spike Duplicate	72	81	100	98	95	103	93	101
LCS 380-160192/22-A	Lab Control Sample	101	100	94	100	97	96	104	103
MBL 380-160192/20-A	Method Blank	103	104	105	97	97	100	93	91
MRL 380-160192/21-A	Lab Control Sample	100	104	98	92	97	97	93	94
Surrogate Legend									
HFPODA = 13C3 HFPO-DA									
C6PFDA = 13C6 PFDA									
13C5PHA = 13C5 PFHxA									
C4PFHA = 13C4 PFHpA									
C8PFOA = 13C8 PFOA									
C9PFNA = 13C9 PFNA									
13C7PUA = 13C7 PFUnA									
PFD _o A = 13C2 PFD _o A									
PFBA = 13C4 PFBA									
PFP _e A = 13C5 PFP _e A									
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: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-160192/20-A

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 160192

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	<0.30		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9CI-PF3ONS)	<0.30		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		06/27/25 16:35	06/29/25 11:27	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C6 PFDA	91		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C5 PFHxA	100		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C4 PFHpA	96		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C8 PFOA	99		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C9 PFNA	100		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C7 PFUnA	96		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C2 PFDoA	95		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C4 PFBA	103		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C5 PFPeA	104		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C3 PFBS	105		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C3 PFHxS	97		50 - 200	06/27/25 16:35	06/29/25 11:27	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-160192/20-A

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 160192

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	97		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C2-4:2-FTS	100		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C2-6:2-FTS	93		50 - 200	06/27/25 16:35	06/29/25 11:27	1
13C2-8:2-FTS	91		50 - 200	06/27/25 16:35	06/29/25 11:27	1

Lab Sample ID: LCS 380-160192/22-A

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160192

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	119		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	120		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	124		ng/L		103	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	120		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	120		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	120	122		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	120	126		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	123		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	120	111		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	120	118		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	121		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	120	119		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	116		ng/L		96	70 - 130
Perfluorobutanoic acid (PFBA)	120	127		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	114		ng/L		95	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	113		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	112		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	121		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	117		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	118		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	120	116		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	119		ng/L		99	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-160192/22-A

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160192

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	121		ng/L		100	70 - 130
		LCS	LCS				
		%Recovery	Qualifier	Limits			
13C3 HFPO-DA	98			50 - 200			
13C6 PFDA	95			50 - 200			
13C5 PFHxA	100			50 - 200			
13C4 PFHpA	98			50 - 200			
13C8 PFOA	99			50 - 200			
13C9 PFNA	100			50 - 200			
13C7 PFUnA	102			50 - 200			
13C2 PFDoA	99			50 - 200			
13C4 PFBA	101			50 - 200			
13C5 PFPeA	100			50 - 200			
13C3 PFBS	94			50 - 200			
13C3 PFHxS	100			50 - 200			
13C8 PFOS	97			50 - 200			
13C2-4:2-FTS	96			50 - 200			
13C2-6:2-FTS	104			50 - 200			
13C2-8:2-FTS	103			50 - 200			

Lab Sample ID: MRL 380-160192/21-A

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160192

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.13	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.19	J	ng/L		109	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.37	J	ng/L		118	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.42	J	ng/L		120	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.30	J	ng/L		114	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.37	J	ng/L		118	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.32	J	ng/L		115	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.18	J	ng/L		109	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.26	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.34	J	ng/L		116	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.40	J	ng/L		119	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.47	J	ng/L		123	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-160192/21-A

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160192

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.20	J	ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.40	J	ng/L		119	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.26	J	ng/L		112	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.22	J	ng/L		110	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.28	J	ng/L		113	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.30	J	ng/L		114	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	2.39	J	ng/L		119	50 - 150

Isotope Dilution	%Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	97		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	101		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	105		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	92		50 - 200
13C8 PFOS	97		50 - 200
13C2-4:2-FTS	97		50 - 200
13C2-6:2-FTS	93		50 - 200
13C2-8:2-FTS	94		50 - 200

Lab Sample ID: 380-157423-A-1-B MS

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 160192

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	118		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	117		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	113		ng/L		94	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-157423-A-1-B MS

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 160192

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	120		ng/L		99	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	127		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	126		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	125		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	126		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	125		ng/L		104	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	115		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	119		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	122		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	121		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	122		ng/L		101	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	129		ng/L		107	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	114		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	115		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	103		ng/L		85	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEA)	<2.0		120	124		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	122		ng/L		101	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	116		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	125		ng/L		104	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C3 HFPO-DA	59		50 - 200
13C6 PFDA	68		50 - 200
13C5 PFHxA	62		50 - 200
13C4 PFHpA	62		50 - 200
13C8 PFOA	64		50 - 200
13C9 PFNA	68		50 - 200
13C7 PFUnA	79		50 - 200
13C2 PFDoA	86		50 - 200
13C4 PFBA	64		50 - 200
13C5 PFPeA	62		50 - 200
13C3 PFBS	90		50 - 200
13C3 PFHxS	92		50 - 200
13C8 PFOS	96		50 - 200

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-157423-A-1-B MS

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 160192

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2-4:2-FTS	94		50 - 200
13C2-6:2-FTS	95		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-157423-A-1-C MSD

Matrix: Water

Analysis Batch: 160268

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 160192

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		120	120		ng/L		99	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	119		ng/L		99	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	114		ng/L		95	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	124		ng/L		103	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	122		ng/L		101	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		120	128		ng/L		106	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	115		ng/L		95	70 - 130	8	30
Perfluorooheptanoic acid (PFHpA)	<2.0		120	122		ng/L		101	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	121		ng/L		100	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	119		ng/L		99	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		120	120		ng/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	120		ng/L		100	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		120	120		ng/L		100	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	122		ng/L		102	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	<2.0		120	113		ng/L		94	70 - 130	13	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	119		ng/L		99	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	113		ng/L		94	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	119		ng/L		99	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	106		ng/L		88	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	125		ng/L		103	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	121		ng/L		100	70 - 130	7	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	115		ng/L		95	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	117		ng/L		97	70 - 130	4	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	116		ng/L		96	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	126		ng/L		104	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
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	74		50 - 200
13C6 PFDA	81		50 - 200
13C5 PFHxA	75		50 - 200
13C4 PFHpA	77		50 - 200
13C8 PFOA	79		50 - 200
13C9 PFNA	81		50 - 200
13C7 PFUnA	90		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	72		50 - 200
13C5 PFPeA	81		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	98		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	103		50 - 200
13C2-6:2-FTS	93		50 - 200
13C2-8:2-FTS	101		50 - 200

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

Lab Sample ID: MBL 380-160279/22-A
Matrix: Water
Analysis Batch: 160385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 160279

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		06/29/25 17:43	06/30/25 11:39	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Perfluorotridecanoic acid (PFTTrDA)	<0.36		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/29/25 17:43	06/30/25 11:39	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	103		70 - 130			06/29/25 17:43	06/30/25 11:39	1
13C2 PFHxA	108		70 - 130			06/29/25 17:43	06/30/25 11:39	1
13C2 PFDA	111		70 - 130			06/29/25 17:43	06/30/25 11:39	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-160279/22-A

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 160279

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	88		70 - 130	06/29/25 17:43	06/30/25 11:39	1

Lab Sample ID: LCS 380-160279/24-A

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	25.1	21.2		ng/L		85	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	25.1	28.4		ng/L		113	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	27.0		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	23.1		ng/L		92	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	21.7		ng/L		87	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.8		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	26.1		ng/L		104	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.7		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	28.2		ng/L		113	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	29.5		ng/L		118	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	29.1		ng/L		116	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.5		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	25.1	28.0		ng/L		112	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	23.9		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	26.3		ng/L		105	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	30.3		ng/L		121	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	27.4		ng/L		109	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	22.6		ng/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	91		70 - 130
13C2 PFHxA	101		70 - 130
13C2 PFDA	118		70 - 130
13C3-GenX	85		70 - 130

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-160279/23-A

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 160279

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	2.01	1.79	J	ng/L		89	50 - 150
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	2.01	2.32	J	ng/L		115	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.16	J	ng/L		108	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.11	J	ng/L		105	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.04	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.02	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.14	J	ng/L		107	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.32	J	ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.24	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.15	J	ng/L		107	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.29	J	ng/L		114	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.47	J	ng/L		73	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.00	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.16	J	ng/L		108	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.13	J	ng/L		106	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.91	J	ng/L		95	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	91		70 - 130

Lab Sample ID: 380-157423-B-1-A MS

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 160279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		25.1	17.9		ng/L		71	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	23.5		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	21.2		ng/L		84	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	21.0		ng/L		84	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-157423-B-1-A MS

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 160279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		25.1	20.5		ng/L		82	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	20.1		ng/L		80	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	20.0		ng/L		80	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	21.1		ng/L		84	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	21.0		ng/L		84	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	23.4		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	23.8		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	21.5		ng/L		86	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	21.7		ng/L		87	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0	F1	25.1	16.7	F1	ng/L		67	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	19.7		ng/L		78	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	23.8		ng/L		95	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	21.5		ng/L		85	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	19.8		ng/L		79	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
d5-NETFOSAA	106		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	107		70 - 130
13C3-GenX	90		70 - 130

Lab Sample ID: 380-157423-B-1-B MSD

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 160279

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		25.2	21.0		ng/L		83	70 - 130	16	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.9		ng/L		107	70 - 130	14	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	24.4		ng/L		97	70 - 130	14	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	25.4		ng/L		101	70 - 130	19	30
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		25.2	23.5		ng/L		93	70 - 130	13	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	24.8		ng/L		99	70 - 130	21	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.4		ng/L		97	70 - 130	20	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	25.4		ng/L		101	70 - 130	18	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	26.1		ng/L		104	70 - 130	22	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-157423-B-1-B MSD

Matrix: Water

Analysis Batch: 160385

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 160279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	27.4		ng/L		109	70 - 130	16	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	28.2		ng/L		112	70 - 130	17	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	25.7		ng/L		102	70 - 130	18	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	26.4		ng/L		105	70 - 130	20	30
Perfluorotetradecanoic acid (PFTA)	<2.0	F1	25.2	22.6		ng/L		90	70 - 130	30	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	24.0		ng/L		95	70 - 130	19	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	26.6		ng/L		106	70 - 130	11	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	24.8		ng/L		98	70 - 130	14	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	23.5		ng/L		94	70 - 130	17	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
d5-NEtFOSAA	101		70 - 130								
13C2 PFHxA	101		70 - 130								
13C2 PFDA	104		70 - 130								
13C3-GenX	87		70 - 130								

QC Association Summary

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 160192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-157417-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-157417-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-160192/20-A	Method Blank	Total/NA	Water	533	
LCS 380-160192/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-160192/21-A	Lab Control Sample	Total/NA	Water	533	
380-157423-A-1-B MS	Matrix Spike	Total/NA	Water	533	
380-157423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 160268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-157417-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	160192
380-157417-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	160192
MBL 380-160192/20-A	Method Blank	Total/NA	Water	533	160192
LCS 380-160192/22-A	Lab Control Sample	Total/NA	Water	533	160192
MRL 380-160192/21-A	Lab Control Sample	Total/NA	Water	533	160192
380-157423-A-1-B MS	Matrix Spike	Total/NA	Water	533	160192
380-157423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	533	160192

Prep Batch: 160279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-157417-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-157417-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-160279/22-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-160279/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-160279/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-157423-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-157423-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 160385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-157417-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	160279
380-157417-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	160279
MBL 380-160279/22-A	Method Blank	Total/NA	Water	537.1	160279
LCS 380-160279/24-A	Lab Control Sample	Total/NA	Water	537.1	160279
MRL 380-160279/23-A	Lab Control Sample	Total/NA	Water	537.1	160279
380-157423-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	160279
380-157423-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	160279

Lab Chronicle

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

Job ID: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-1

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			160192	E2HD	EA POM	06/27/25 16:35
Total/NA	Analysis	533		1	160268	M7ML	EA POM	06/29/25 14:52
Total/NA	Prep	537.1 DW			160279	E9PK	EA POM	06/29/25 17:43
Total/NA	Analysis	537.1		1	160385	USZZ	EA POM	06/30/25 12:43

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-157417-2

Date Collected: 06/24/25 09:28

Matrix: Water

Date Received: 06/26/25 09:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			160192	E2HD	EA POM	06/27/25 16:35
Total/NA	Analysis	533		1	160268	M7ML	EA POM	06/29/25 15:02
Total/NA	Prep	537.1 DW			160279	E9PK	EA POM	06/29/25 17:43
Total/NA	Analysis	537.1		1	160385	USZZ	EA POM	06/30/25 12:54

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: 380-157417-1
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
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Method Summary

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

Job ID: 380-157417-1
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: 380-157417-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-157417-1	HALAWA SHAFT VIEWING POOL	Water	06/24/25 09:28	06/26/25 09:47
380-157417-2	FB HALAWA SHAFT VIEWING POOL	Water	06/24/25 09:28	06/26/25 09:47

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

Environ



380-157417 COC

[illegible]

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-157417-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 157417

List Number: 1

Creator: Edrosa, Rey

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	