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ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
PFAS: Halawa Shaft Viewing Pool

JOB NUMBER

380-195035-1

Eurofins 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 Drinking Water and Wastewater West, LLC Project Manager.

Compliance Statement

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

Authorization



Authorized for release by
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Definitions/Glossary

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Analyte was found in the associated method blank.
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: 380-195035-1

Job ID: 380-195035-1

Eurofins Pomona

Job Narrative 380-195035-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 1/29/2026 9:52 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 1.1°C.

PFAS

Method 533: The following QC issues in preparation batch 380-202799 and analytical batch 380-202996 were observed: 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) was detected greater than 1/3 of MRL in Method Blank. The associated samples HALAWA SHAFT VIEWING POOL (380-195035-1) are ND for 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS). Per Sec. 9.2.1. of Method 533, only samples with detection at or greater than the reporting limit is invalidated. No impact to the sample results as the native samples are non detected for 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS). (XWB4)

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

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Detection Summary

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.2		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)	4.0		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-2

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: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-1

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorohexanesulfonic acid (PFHxS)	3.3		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorooctanesulfonic acid (PFOS)	3.2		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0	B	2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 12:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	109		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C6 PFDA	106		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C5 PFHxA	108		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C4 PFHpA	115		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C8 PFOA	114		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C9 PFNA	112		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C7 PFUnA	104		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C2 PFDoA	100		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C4 PFBA	114		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C5 PFPeA	118		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C3 PFBS	118		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C3 PFHxS	110		50 - 200	02/02/26 16:13	02/03/26 12:38	1

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Client Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-1

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	119		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C2-4:2-FTS	117		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C2-6:2-FTS	109		50 - 200	02/02/26 16:13	02/03/26 12:38	1
13C2-8:2-FTS	108		50 - 200	02/02/26 16:13	02/03/26 12:38	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		01/30/26 01:40	02/02/26 13:08	1
Perfluorooctanesulfonic acid (PFOS)	3.8		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorohexanesulfonic acid (PFHxS)	4.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 13:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			01/30/26 01:40	02/02/26 13:08	1
13C2 PFHxA	106		70 - 130			01/30/26 01:40	02/02/26 13:08	1
13C2 PFDA	109		70 - 130			01/30/26 01:40	02/02/26 13:08	1
13C3-GenX	93		70 - 130			01/30/26 01:40	02/02/26 13:08	1

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-2

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1

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Client Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-2

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

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		02/02/26 16:13	02/03/26 09:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/02/26 16:13	02/03/26 09:04	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C6 PFDA	98		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C5 PFHxA	108		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C4 PFHpA	102		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C8 PFOA	104		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C9 PFNA	100		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C7 PFUnA	95		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C2 PFDoA	92		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C4 PFBA	109		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C5 PFPeA	107		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C3 PFBS	105		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C3 PFHxS	105		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C8 PFOS	113		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C2-4:2-FTS	94		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C2-6:2-FTS	98		50 - 200	02/02/26 16:13	02/03/26 09:04	1
13C2-8:2-FTS	89		50 - 200	02/02/26 16:13	02/03/26 09:04	1

Client Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-2

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

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		01/30/26 01:40	02/02/26 14:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/30/26 01:40	02/02/26 14:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130			01/30/26 01:40	02/02/26 14:52	1
13C2 PFHxA	97		70 - 130			01/30/26 01:40	02/02/26 14:52	1
13C2 PFDA	101		70 - 130			01/30/26 01:40	02/02/26 14:52	1
13C3-GenX	81		70 - 130			01/30/26 01:40	02/02/26 14:52	1

Action Limit Summary

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-1

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)	3.3		ng/L	10	2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10	2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.2		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)	4.0		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: 380-195035-2

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: 380-195035-1
 SDG: PFAS: Halawa Shaft Viewing Pool

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-195035-1	HALAWA SHAFT VIEWING POOL	109	106	109	93
380-195035-1 MS	HALAWA SHAFT VIEWING POOL	101	103	105	93
380-195035-1 MSD	HALAWA SHAFT VIEWING POOL	101	103	110	96
380-195035-2	FB HALAWA SHAFT VIEWING POOL	98	97	101	81
LCS 380-202153/21-A	Lab Control Sample	105	105	109	92
MBL 380-202153/19-A	Method Blank	101	103	104	90
MRL 380-202153/20-A	Lab Control Sample	102	99	109	94

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX



Isotope Dilution Summary

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

Job ID: 380-195035-1
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)	PFDoA (50-200)
380-194718-B-7-A MS	Matrix Spike	111	95	103	101	108	102	92	92
380-194718-C-7-A MSD	Matrix Spike Duplicate	114	104	105	107	112	106	99	96
380-195035-1	HALAWA SHAFT VIEWING POOL	109	106	108	115	114	112	104	100
380-195035-2	FB HALAWA SHAFT VIEWING POOL	96	98	108	102	104	100	95	92
380-195037-E-1-A MS	Matrix Spike	123	103	109	104	106	103	98	100
380-195037-F-1-A MSD	Matrix Spike Duplicate	127	108	107	99	105	108	103	99
LCS 380-202799/22-A	Lab Control Sample	113	104	105	107	112	108	102	95
LCS 380-202800/22-A	Lab Control Sample	102	95	97	96	99	98	92	90
MBL 380-202799/20-A	Method Blank	108	109	104	108	107	108	104	104
MBL 380-202800/20-A	Method Blank	104	103	106	108	108	106	101	99
MRL 380-202799/21-A	Lab Control Sample	116	108	114	107	110	113	101	100
MRL 380-202800/21-A	Lab Control Sample	95	93	101	98	99	98	95	89

		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)
380-194718-B-7-A MS	Matrix Spike	105	100	109	103	109	88	89	83
380-194718-C-7-A MSD	Matrix Spike Duplicate	111	111	115	111	118	98	97	85
380-195035-1	HALAWA SHAFT VIEWING POOL	114	118	118	110	119	117	109	108
380-195035-2	FB HALAWA SHAFT VIEWING POOL	109	107	105	105	113	94	98	89
380-195037-E-1-A MS	Matrix Spike	111	102	115	111	113	91	96	86
380-195037-F-1-A MSD	Matrix Spike Duplicate	119	110	113	108	117	90	89	86
LCS 380-202799/22-A	Lab Control Sample	113	106	112	109	115	93	92	91
LCS 380-202800/22-A	Lab Control Sample	106	100	110	104	110	94	91	92
MBL 380-202799/20-A	Method Blank	107	107	114	112	114	102	96	92
MBL 380-202800/20-A	Method Blank	114	104	112	109	116	95	94	99
MRL 380-202799/21-A	Lab Control Sample	108	102	106	103	109	93	87	83
MRL 380-202800/21-A	Lab Control Sample	105	104	109	105	116	99	99	90

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-202799/20-A
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202799

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.749	J B	2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		02/02/26 16:13	02/03/26 08:41	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	108		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C6 PFDA	109		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C5 PFHxA	104		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C4 PFHpA	108		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C8 PFOA	107		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C9 PFNA	108		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C7 PFUnA	104		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C2 PFDoA	104		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C4 PFBA	107		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C5 PFPeA	107		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C3 PFBS	114		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C3 PFHxS	112		50 - 200	02/02/26 16:13	02/03/26 08:41	1

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-202799/20-A
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202799

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	114		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C2-4:2-FTS	102		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C2-6:2-FTS	96		50 - 200	02/02/26 16:13	02/03/26 08:41	1
13C2-8:2-FTS	92		50 - 200	02/02/26 16:13	02/03/26 08:41	1

Lab Sample ID: LCS 380-202799/22-A
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202799

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	107		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	113		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	123		ng/L		102	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	112		ng/L		94	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	110		ng/L		92	70 - 130
Perfluorodecanoic acid (PFDA)	120	117		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	120	118		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	118		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	116		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	120	114		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	120	124		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	114		ng/L		95	70 - 130
Perfluorooctanoic acid (PFOA)	120	115		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	121		ng/L		101	70 - 130
Perfluorobutanoic acid (PFBA)	120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	111		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	122		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	120		ng/L		100	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	110		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	114		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	120		ng/L		100	70 - 130
Perfluoropentanoic acid (PFPeA)	120	119		ng/L		99	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	121		ng/L		101	70 - 130

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-202799/22-A
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202799

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	113		ng/L		94	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	113		50 - 200				
13C6 PFDA	104		50 - 200				
13C5 PFHxA	105		50 - 200				
13C4 PFHpA	107		50 - 200				
13C8 PFOA	112		50 - 200				
13C9 PFNA	108		50 - 200				
13C7 PFUnA	102		50 - 200				
13C2 PFDoA	95		50 - 200				
13C4 PFBA	113		50 - 200				
13C5 PFPeA	106		50 - 200				
13C3 PFBS	112		50 - 200				
13C3 PFHxS	109		50 - 200				
13C8 PFOS	115		50 - 200				
13C2-4:2-FTS	93		50 - 200				
13C2-6:2-FTS	92		50 - 200				
13C2-8:2-FTS	91		50 - 200				

Lab Sample ID: MRL 380-202799/21-A
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202799

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.95	J	ng/L		97	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.98	J	ng/L		99	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.32	J	ng/L		116	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.81	J	ng/L		90	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.05	J	ng/L		102	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-202799/21-A
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202799

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.95	J	ng/L		97	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.15	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	1.92	J	ng/L		96	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.07	J	ng/L		104	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.77	J	ng/L		88	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.05	J	ng/L		102	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	116		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	114		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	110		50 - 200
13C9 PFNA	113		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	108		50 - 200
13C5 PFPeA	102		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	93		50 - 200
13C2-6:2-FTS	87		50 - 200
13C2-8:2-FTS	83		50 - 200

Lab Sample ID: 380-194718-B-7-A MS
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 202799

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	56.5		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	59.2		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	63.9		ng/L		106	70 - 130

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-194718-B-7-A MS
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 202799

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	57.8		ng/L		96	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	5.6		60.2	64.8		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	62.6		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	62.0		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	61.3		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	5.3		60.2	67.2		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	58.4		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	63.7		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.5		60.2	63.7		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.9		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	63.3		ng/L		105	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.1		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	63.2		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	62.6		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0	B	60.2	63.5		ng/L		105	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	61.4		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	59.2		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	58.7		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	61.4		ng/L		102	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	60.6		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	64.6		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	64.3		ng/L		104	70 - 130

Isotope Dilution	MS %Recovery	MS Qualifier	MS Limits
13C3 HFPO-DA	111		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	108		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	100		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	109		50 - 200

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-194718-B-7-A MS
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 202799

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	88		50 - 200
13C2-6:2-FTS	89		50 - 200
13C2-8:2-FTS	83		50 - 200

Lab Sample ID: 380-194718-C-7-A MSD
Matrix: Water
Analysis Batch: 202996

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 202799

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	55.4		ng/L		92	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	59.3		ng/L		98	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	66.1		ng/L		110	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	58.8		ng/L		98	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	5.6		60.2	63.3		ng/L		96	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	59.4		ng/L		99	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	59.7		ng/L		99	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	62.0		ng/L		103	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	5.3		60.2	66.8		ng/L		102	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	62.5		ng/L		104	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	63.9		ng/L		106	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	3.5		60.2	61.8		ng/L		97	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		60.2	59.2		ng/L		98	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	61.1		ng/L		101	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		60.2	60.3		ng/L		100	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	66.3		ng/L		110	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	65.6		ng/L		109	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0	B	60.2	64.1		ng/L		106	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	63.2		ng/L		105	70 - 130	3	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	59.5		ng/L		99	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	61.2		ng/L		102	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	60.5		ng/L		100	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	61.1		ng/L		101	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	64.6		ng/L		107	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	64.1		ng/L		104	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C3 HFPO-DA	114		50 - 200
13C6 PFDA	104		50 - 200
13C5 PFHxA	105		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	112		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	96		50 - 200
13C4 PFBA	111		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	115		50 - 200
13C3 PFHxS	111		50 - 200
13C8 PFOS	118		50 - 200
13C2-4:2-FTS	98		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	85		50 - 200

Lab Sample ID: MBL 380-202800/20-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202800

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-202800/20-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202800

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		02/02/26 16:13	02/03/26 08:07	1
Isotope Dilution	%Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	104		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C6 PFDA	103		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C5 PFHxA	106		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C4 PFHpA	108		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C8 PFOA	108		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C9 PFNA	106		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C7 PFUnA	101		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C2 PFDoA	99		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C4 PFBA	114		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C5 PFPeA	104		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C3 PFBS	112		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C3 PFHxS	109		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C8 PFOS	116		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C2-4:2-FTS	95		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C2-6:2-FTS	94		50 - 200			02/02/26 16:13	02/03/26 08:07	1
13C2-8:2-FTS	99		50 - 200			02/02/26 16:13	02/03/26 08:07	1

Lab Sample ID: LCS 380-202800/22-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	56.7		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.1	60.5		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	60.4		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	54.5		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	58.2		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	59.7		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	59.7		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	59.8		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.1	62.1		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	63.5		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	60.1	59.1		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	57.9		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	56.6		ng/L		94	70 - 130

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-202800/22-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.1	58.4		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	60.7		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	58.5		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	63.3		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	60.7		ng/L		101	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	61.5		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.1	65.0		ng/L		108	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	57.4		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	63.9		ng/L		106	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	58.4		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	60.1		ng/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	61.3		ng/L		102	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	102		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	96		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	98		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	100		50 - 200
13C3 PFBS	110		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	94		50 - 200
13C2-6:2-FTS	91		50 - 200
13C2-8:2-FTS	92		50 - 200

Lab Sample ID: MRL 380-202800/21-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.04	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.00	J	ng/L		100	50 - 150

Eurofins Pomona

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-202800/21-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.95	J	ng/L		97	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.95	J	ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.09	J	ng/L		104	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.03	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.06	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.08	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.26	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.50	J	ng/L		125	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.45	J	ng/L		122	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.13	J	ng/L		106	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	99		50 - 200
13C9 PFNA	98		50 - 200
13C7 PFUnA	95		50 - 200
13C2 PFDoA	89		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	104		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	105		50 - 200

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-202800/21-A
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202800

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	116		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	99		50 - 200
13C2-8:2-FTS	90		50 - 200

Lab Sample ID: 380-195037-E-1-A MS
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 202800

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-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	110		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	117		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	105		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	109		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	115		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	117		ng/L		97	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	122		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	118		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	120		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	119		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	116		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	119		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	119		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	117		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	111		ng/L		92	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	96.6		ng/L		80	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	108		ng/L		90	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	128		ng/L		107	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	113		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	118		ng/L		98	70 - 130

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-195037-E-1-A MS
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	119		ng/L		99	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	123		50 - 200						
13C6 PFDA	103		50 - 200						
13C5 PFHxA	109		50 - 200						
13C4 PFHpA	104		50 - 200						
13C8 PFOA	106		50 - 200						
13C9 PFNA	103		50 - 200						
13C7 PFUnA	98		50 - 200						
13C2 PFDoA	100		50 - 200						
13C4 PFBA	111		50 - 200						
13C5 PFPeA	102		50 - 200						
13C3 PFBS	115		50 - 200						
13C3 PFHxS	111		50 - 200						
13C8 PFOS	113		50 - 200						
13C2-4:2-FTS	91		50 - 200						
13C2-6:2-FTS	96		50 - 200						
13C2-8:2-FTS	86		50 - 200						

Lab Sample ID: 380-195037-F-1-A MSD
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	111		ng/L		92	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	111		ng/L		92	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	125		ng/L		104	70 - 130	7	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	99.4		ng/L		83	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	113		ng/L		94	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		120	114		ng/L		95	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	122		ng/L		102	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	127		ng/L		106	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	119		ng/L		98	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	120		ng/L		99	70 - 130	0	30
Perfluorononanoic acid (PFNA)	<2.0		120	115		ng/L		96	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	111		ng/L		92	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		120	117		ng/L		97	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	116		ng/L		96	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		120	112		ng/L		93	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-195037-F-1-A MSD
Matrix: Water
Analysis Batch: 202997

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 202800

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	123		ng/L		102	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	119		ng/L		98	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	121		ng/L		100	70 - 130	8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	108		ng/L		90	70 - 130	11	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	117		ng/L		97	70 - 130	8	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	111		ng/L		92	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	132		ng/L		109	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	117		ng/L		97	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	112		ng/L		93	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	125		ng/L		104	70 - 130	5	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	127		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	108		50 - 200
13C7 PFUnA	103		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	119		50 - 200
13C5 PFPeA	110		50 - 200
13C3 PFBS	113		50 - 200
13C3 PFHxS	108		50 - 200
13C8 PFOS	117		50 - 200
13C2-4:2-FTS	90		50 - 200
13C2-6:2-FTS	89		50 - 200
13C2-8:2-FTS	86		50 - 200

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

Lab Sample ID: MBL 380-202153/19-A
Matrix: Water
Analysis Batch: 202739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202153

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MBL 380-202153/19-A
Matrix: Water
Analysis Batch: 202739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 202153

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/30/26 01:40	02/02/26 12:39	1
Surrogate	MBL %Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130			01/30/26 01:40	02/02/26 12:39	1
13C2 PFHxA	103		70 - 130			01/30/26 01:40	02/02/26 12:39	1
13C2 PFDA	104		70 - 130			01/30/26 01:40	02/02/26 12:39	1
13C3-GenX	90		70 - 130			01/30/26 01:40	02/02/26 12:39	1

Lab Sample ID: LCS 380-202153/21-A
Matrix: Water
Analysis Batch: 202739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202153

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	22.4		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.8		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	24.3		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	26.4		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	25.0		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.0		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	24.6		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.0		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	24.8		ng/L		99	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	27.1		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	25.5		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.5		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	25.1	25.9		ng/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: LCS 380-202153/21-A
Matrix: Water
Analysis Batch: 202739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202153

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	25.1	23.9		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	25.6		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	25.1	27.2		ng/L		109	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.3		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	24.1		ng/L		96	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
d5-NEtFOSAA	105		70 - 130				
13C2 PFHxA	105		70 - 130				
13C2 PFDA	109		70 - 130				
13C3-GenX	92		70 - 130				

Lab Sample ID: MRL 380-202153/20-A
Matrix: Water
Analysis Batch: 202739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202153

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.79	J	ng/L		89	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.99	J	ng/L		100	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.14	J	ng/L		107	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	1.99	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.04	J	ng/L		102	50 - 150

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: MRL 380-202153/20-A
Matrix: Water
Analysis Batch: 202739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 202153

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.95	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.88	J	ng/L		94	50 - 150
	<i>MRL</i>	<i>MRL</i>					
Surrogate	%Recovery	MRL Qualifier	Limits				
<i>d5-NEtFOSAA</i>	102		70 - 130				
<i>13C2 PFHxA</i>	99		70 - 130				
<i>13C2 PFDA</i>	109		70 - 130				
<i>13C3-GenX</i>	94		70 - 130				

Lab Sample ID: 380-195035-1 MS
Matrix: Water
Analysis Batch: 202739

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 202153

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	45.2		ng/L		90	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.8		50.2	56.8		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	51.2		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.5		ng/L		105	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	50.9		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	51.8		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	51.3		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	54.6		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	50.1		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	4.0		50.2	54.9		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	53.0		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	52.3		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	53.4		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	48.3		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	51.5		ng/L		103	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.3		ng/L		102	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	49.7		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	46.1		ng/L		92	70 - 130

QC Sample Results

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

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

Lab Sample ID: 380-195035-1 MS
Matrix: Water
Analysis Batch: 202739

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 202153

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	93		70 - 130

Lab Sample ID: 380-195035-1 MSD
Matrix: Water
Analysis Batch: 202739

Client Sample ID: HALAWA SHAFT VIEWING POOL
Prep Type: Total/NA
Prep Batch: 202153

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	43.6		ng/L		87	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	3.8		50.2	55.9		ng/L		104	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	51.2		ng/L		102	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	54.2		ng/L		108	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	50.6		ng/L		101	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	50.5		ng/L		98	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	50.5		ng/L		101	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	54.6		ng/L		106	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	49.7		ng/L		99	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	4.0		50.2	57.2		ng/L		106	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	54.0		ng/L		107	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	54.4		ng/L		107	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	54.1		ng/L		108	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	48.1		ng/L		96	70 - 130	0	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	51.7		ng/L		103	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	54.7		ng/L		109	70 - 130	6	30
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	51.0		ng/L		102	70 - 130	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	47.4		ng/L		94	70 - 130	3	30

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	103		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	96		70 - 130

QC Association Summary

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS

Prep Batch: 202153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195035-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-195035-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-202153/19-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-202153/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-202153/20-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-195035-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-195035-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	

Analysis Batch: 202739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195035-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	202153
380-195035-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	202153
MBL 380-202153/19-A	Method Blank	Total/NA	Water	537.1	202153
LCS 380-202153/21-A	Lab Control Sample	Total/NA	Water	537.1	202153
MRL 380-202153/20-A	Lab Control Sample	Total/NA	Water	537.1	202153
380-195035-1 MS	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	202153
380-195035-1 MSD	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	202153

Prep Batch: 202799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195035-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-202799/20-A	Method Blank	Total/NA	Water	533	
LCS 380-202799/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-202799/21-A	Lab Control Sample	Total/NA	Water	533	
380-194718-B-7-A MS	Matrix Spike	Total/NA	Water	533	
380-194718-C-7-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Prep Batch: 202800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195035-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-202800/20-A	Method Blank	Total/NA	Water	533	
LCS 380-202800/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-202800/21-A	Lab Control Sample	Total/NA	Water	533	
380-195037-E-1-A MS	Matrix Spike	Total/NA	Water	533	
380-195037-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 202996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195035-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	202799
MBL 380-202799/20-A	Method Blank	Total/NA	Water	533	202799
LCS 380-202799/22-A	Lab Control Sample	Total/NA	Water	533	202799
MRL 380-202799/21-A	Lab Control Sample	Total/NA	Water	533	202799
380-194718-B-7-A MS	Matrix Spike	Total/NA	Water	533	202799
380-194718-C-7-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	202799

Analysis Batch: 202997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195035-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	202800
MBL 380-202800/20-A	Method Blank	Total/NA	Water	533	202800
LCS 380-202800/22-A	Lab Control Sample	Total/NA	Water	533	202800
MRL 380-202800/21-A	Lab Control Sample	Total/NA	Water	533	202800

Eurofins Pomona

QC Association Summary

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

LCMS (Continued)

Analysis Batch: 202997 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-195037-E-1-A MS	Matrix Spike	Total/NA	Water	533	202800
380-195037-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	202800

- 1
- 2
- 3
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- 5
- 6
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- 8
- 9
- 10
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- 15
- 16
- 17

Lab Chronicle

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-1

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			202799	N8NE	EA POM	02/02/26 16:13
Total/NA	Analysis	533		1	202996	SZ9R	EA POM	02/03/26 12:38
Total/NA	Prep	537.1 DW			202153	G9MN	EA POM	01/30/26 01:40
Total/NA	Analysis	537.1		1	202739	M7ML	EA POM	02/02/26 13:08

Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-195035-2

Date Collected: 01/27/26 09:30

Matrix: Water

Date Received: 01/29/26 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			202800	N8NE	EA POM	02/02/26 16:13
Total/NA	Analysis	533		1	202997	SZ9R	EA POM	02/03/26 09:04
Total/NA	Prep	537.1 DW			202153	G9MN	EA POM	01/30/26 01:40
Total/NA	Analysis	537.1		1	202739	M7ML	EA POM	02/02/26 14:52

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Laboratory: Eurofins Pomona

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

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

- 1
- 2
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* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

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

Job ID: 380-195035-1
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 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: 380-195035-1
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-195035-1	HALAWA SHAFT VIEWING POOL	Water	01/27/26 09:30	01/29/26 09:52	Hawaii
380-195035-2	FB HALAWA SHAFT VIEWING POOL	Water	01/27/26 09:30	01/29/26 09:52	Hawaii

- 1
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- 3
- 4
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- 7
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- 10
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- 12
- 13
- 14
- 15
- 16
- 17

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-195035-1

SDG Number: PFAS: Halawa Shaft Viewing Pool

Login Number: 195035

List Number: 1

Creator: Ngo, Theodore

List Source: Eurofins Pomona

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