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# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Erwin Kawata  
City & County of Honolulu  
630 South Beretania Street  
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Honolulu, Hawaii 96843

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## JOB DESCRIPTION

RED-HILL  
PFAS: Halawa Shaft Viewing Pool

## JOB NUMBER

380-192756-1

# 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: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## Qualifiers

### LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

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

Job ID: 380-192756-1

**Job ID: 380-192756-1**

**Eurofins Pomona**

## Job Narrative 380-192756-1

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 1/15/2026 9:38 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 4.0°C.

### PFAS

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



# Detection Summary

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## Client Sample ID: HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-192756-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	3.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.6		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.7		2.0	ng/L	1		537.1	Total/NA

## Client Sample ID: FB HALAWA SHAFT VIEWING POOL

Lab Sample ID: 380-192756-2

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: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-1**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

**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		01/17/26 07:41	01/18/26 15:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.2</b>		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.3</b>		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:42	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C6 PFDA	108		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C5 PFHxA	113		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C4 PFHpA	110		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C8 PFOA	113		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C9 PFNA	113		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C7 PFUnA	106		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C2 PFDoA	110		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C4 PFBA	108		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C5 PFPeA	113		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C3 PFBS	101		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C3 PFHxS	107		50 - 200	01/17/26 07:41	01/18/26 15:42	1

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# Client Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-1**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOS	105		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C2-4:2-FTS	129		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C2-6:2-FTS	130		50 - 200	01/17/26 07:41	01/18/26 15:42	1
13C2-8:2-FTS	109		50 - 200	01/17/26 07:41	01/18/26 15:42	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		01/18/26 08:36	01/19/26 15:40	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>3.6</b>		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>3.7</b>		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	112		70 - 130			01/18/26 08:36	01/19/26 15:40	1
13C2 PFHxA	115		70 - 130			01/18/26 08:36	01/19/26 15:40	1
13C2 PFDA	112		70 - 130			01/18/26 08:36	01/19/26 15:40	1
13C3-GenX	109		70 - 130			01/18/26 08:36	01/19/26 15:40	1

**Client Sample ID: FB HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-2**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

**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		01/17/26 07:41	01/18/26 15:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1

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# Client Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: FB HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-2**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

**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		01/17/26 07:41	01/18/26 15:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/17/26 07:41	01/18/26 15:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C6 PFDA	104		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C5 PFHxA	108		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C4 PFHpA	103		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C8 PFOA	110		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C9 PFNA	109		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C7 PFUnA	99		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C2 PFDoA	105		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C4 PFBA	101		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C5 PFPeA	98		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C3 PFBS	105		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C3 PFHxS	106		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C8 PFOS	105		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C2-4:2-FTS	111		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C2-6:2-FTS	119		50 - 200	01/17/26 07:41	01/18/26 15:51	1
13C2-8:2-FTS	102		50 - 200	01/17/26 07:41	01/18/26 15:51	1

# Client Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: FB HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-2**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

**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		01/18/26 08:36	01/19/26 15:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/18/26 08:36	01/19/26 15:49	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	99		70 - 130			01/18/26 08:36	01/19/26 15:49	1
13C2 PFHxA	107		70 - 130			01/18/26 08:36	01/19/26 15:49	1
13C2 PFDA	107		70 - 130			01/18/26 08:36	01/19/26 15:49	1
13C3-GenX	91		70 - 130			01/18/26 08:36	01/19/26 15:49	1

# Action Limit Summary

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

**Client Sample ID: HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-1**

## Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits have been highlighted for your convenience.

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		ng/L	10		2.0	533	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		ng/L	10		2.0	533	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10		2.0	533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.3		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)	3.6		ng/L	4		2.0	537.1	Total/NA
Perfluorooctanoic acid (PFOA)	<2.0		ng/L	4		2.0	537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.7		ng/L	10		2.0	537.1	Total/NA
Perfluorononanoic acid (PFNA)	<2.0		ng/L	10		2.0	537.1	Total/NA

**Client Sample ID: FB HALAWA SHAFT VIEWING POOL**

**Lab Sample ID: 380-192756-2**

## 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: 380-192756-1  
 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)
380-192534-B-1-A MS	Matrix Spike	109	110	108	104
380-192534-C-1-A MSD	Matrix Spike Duplicate	106	111	111	106
380-192756-1	HALAWA SHAFT VIEWING POOL	112	115	112	109
380-192756-2	FB HALAWA SHAFT VIEWING POOL	99	107	107	91
LCS 380-198726/23-A	Lab Control Sample	94	104	108	90
MBL 380-198726/21-A	Method Blank	102	106	113	94
MRL 380-198726/22-A	Lab Control Sample	102	102	117	90

### 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: 380-192756-1  
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)
380-192608-B-7-A MS	Matrix Spike	96	108	111	108	111	109	106	115
380-192608-C-7-A MSD	Matrix Spike Duplicate	109	107	107	107	105	109	104	107
380-192756-1	HALAWA SHAFT VIEWING POOL	100	108	113	110	113	113	106	110
380-192756-2	FB HALAWA SHAFT VIEWING POOL	91	104	108	103	110	109	99	105
LCS 380-198685/22-A	Lab Control Sample	105	110	109	108	106	112	105	113
MBL 380-198685/20-A	Method Blank	90	107	108	106	108	106	100	105
MRL 380-198685/21-A	Lab Control Sample	99	110	114	112	113	115	105	111

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-192608-B-7-A MS	Matrix Spike	106	117	101	104	102	107	113	101
380-192608-C-7-A MSD	Matrix Spike Duplicate	103	117	113	110	108	116	117	111
380-192756-1	HALAWA SHAFT VIEWING POOL	108	113	101	107	105	129	130	109
380-192756-2	FB HALAWA SHAFT VIEWING POOL	101	98	105	106	105	111	119	102
LCS 380-198685/22-A	Lab Control Sample	106	109	113	111	108	117	110	106
MBL 380-198685/20-A	Method Blank	108	108	102	105	105	114	117	110
MRL 380-198685/21-A	Lab Control Sample	107	106	109	113	110	124	121	110

**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: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-198685/20-A**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		01/17/26 07:41	01/18/26 12:11	1

Isotope Dilution	MBL	MBL	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C3 HFPO-DA	90		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C6 PFDA	107		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C5 PFHxA	108		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C4 PFHpA	106		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C8 PFOA	108		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C9 PFNA	106		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C7 PFUnA	100		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C2 PFDoA	105		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C4 PFBA	108		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C5 PFPeA	108		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C3 PFBS	102		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C3 PFHxS	105		50 - 200	01/17/26 07:41	01/18/26 12:11	1

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# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-198685/20-A**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Isotope Dilution	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 PFOS	105		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C2-4:2-FTS	114		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C2-6:2-FTS	117		50 - 200	01/17/26 07:41	01/18/26 12:11	1
13C2-8:2-FTS	110		50 - 200	01/17/26 07:41	01/18/26 12:11	1

**Lab Sample ID: LCS 380-198685/22-A**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	121	105		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	121	116		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	121	110		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	121	105		ng/L		87	70 - 130
Perfluorodecanoic acid (PFDA)	121	112		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	121	111		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	121	115		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	121	107		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	121	115		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	121	114		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	121	113		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	121	113		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	121	113		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	121	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	121	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	121	106		ng/L		88	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	121	118		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	121	112		ng/L		93	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	121	104		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	121	118		ng/L		98	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	121	115		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	121	112		ng/L		93	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	121	112		ng/L		93	70 - 130

# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: LCS 380-198685/22-A**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	121	109		ng/L		91	70 - 130
<b>LCS LCS</b>							
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
13C3 HFPO-DA	105		50 - 200				
13C6 PFDA	110		50 - 200				
13C5 PFHxA	109		50 - 200				
13C4 PFHpA	108		50 - 200				
13C8 PFOA	106		50 - 200				
13C9 PFNA	112		50 - 200				
13C7 PFUnA	105		50 - 200				
13C2 PFDoA	113		50 - 200				
13C4 PFBA	106		50 - 200				
13C5 PFPeA	109		50 - 200				
13C3 PFBS	113		50 - 200				
13C3 PFHxS	111		50 - 200				
13C8 PFOS	108		50 - 200				
13C2-4:2-FTS	117		50 - 200				
13C2-6:2-FTS	110		50 - 200				
13C2-8:2-FTS	106		50 - 200				

**Lab Sample ID: MRL 380-198685/21-A**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.00	J	ng/L		99	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.03	J	ng/L		101	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.11	J	ng/L		105	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.08	J	ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.19	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.06	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.09	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.16	J	ng/L		107	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	2.02	J	ng/L		100	50 - 150

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# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MRL 380-198685/21-A**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	2.33	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	2.23	J	ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	2.62	J	ng/L		130	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.95	J	ng/L		97	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.98	J	ng/L		98	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	2.10	J	ng/L		104	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	2.00	J	ng/L		100	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.93	J	ng/L		96	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	110		50 - 200
13C5 PFHxA	114		50 - 200
13C4 PFHpA	112		50 - 200
13C8 PFOA	113		50 - 200
13C9 PFNA	115		50 - 200
13C7 PFUnA	105		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	107		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	109		50 - 200
13C3 PFHxS	113		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	124		50 - 200
13C2-6:2-FTS	121		50 - 200
13C2-8:2-FTS	110		50 - 200

**Lab Sample ID: 380-192608-B-7-A MS**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

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		121	112		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	114		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	120		ng/L		99	70 - 130

# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-192608-B-7-A MS**

**Client Sample ID: Matrix Spike**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 198740**

**Prep Batch: 198685**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Hexafluoropropylene Oxide	<2.0		121	125		ng/L		103	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		121	115		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		121	121		ng/L		100	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	117		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		121	114		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		121	121		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	119		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	111		ng/L		92	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	118		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	115		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	114		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	108		ng/L		89	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	113		ng/L		93	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	126		ng/L		104	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	120		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	114		ng/L		94	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	115		ng/L		95	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	115		ng/L		95	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	111		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	111		50 - 200
13C9 PFNA	109		50 - 200
13C7 PFUnA	106		50 - 200
13C2 PFDoA	115		50 - 200
13C4 PFBA	106		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	101		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	102		50 - 200

# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-192608-B-7-A MS**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	113		50 - 200
13C2-8:2-FTS	101		50 - 200

**Lab Sample ID: 380-192608-C-7-A MSD**  
**Matrix: Water**  
**Analysis Batch: 198740**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 198685**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	108		ng/L		89	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	109		ng/L		90	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	121		ng/L		100	70 - 130	1	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	108		ng/L		90	70 - 130	14	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	104		ng/L		86	70 - 130	12	30
Perfluorodecanoic acid (PFDA)	<2.0		121	113		ng/L		94	70 - 130	6	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	115		ng/L		95	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	118		ng/L		98	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	115		ng/L		95	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	113		ng/L		93	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		121	118		ng/L		98	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		121	118		ng/L		97	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		121	115		ng/L		95	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	115		ng/L		95	70 - 130	4	30
Perfluorobutanoic acid (PFBA)	<2.0		121	119		ng/L		98	70 - 130	3	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	115		ng/L		95	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	109		ng/L		90	70 - 130	5	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	117		ng/L		97	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	115		ng/L		95	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		121	103		ng/L		85	70 - 130	9	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	127		ng/L		105	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	117		ng/L		97	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	114		ng/L		95	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	115		ng/L		95	70 - 130	1	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	113		ng/L		94	70 - 130	1	30

# QC Sample Results

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

Job ID: 380-192756-1  
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	109		50 - 200
13C6 PFDA	107		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	107		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	109		50 - 200
13C7 PFUnA	104		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	113		50 - 200
13C3 PFHxS	110		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	117		50 - 200
13C2-8:2-FTS	111		50 - 200

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

**Lab Sample ID: MBL 380-198726/21-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

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		01/18/26 08:36	01/19/26 12:41	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
Perfluorotridecanoic acid (PFTTrDA)	<0.36		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/18/26 08:36	01/19/26 12:41	1

  

Surrogate	MBL MBL		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
d5-NEtFOSAA	102		70 - 130	01/18/26 08:36	01/19/26 12:41	1
13C2 PFHxA	106		70 - 130	01/18/26 08:36	01/19/26 12:41	1
13C2 PFDA	113		70 - 130	01/18/26 08:36	01/19/26 12:41	1

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# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MBL 380-198726/21-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-GenX	94		70 - 130	01/18/26 08:36	01/19/26 12:41	1

**Lab Sample ID: LCS 380-198726/23-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	25.1	21.7		ng/L		86	70 - 130
Dimer Acid (HFPO-DA/GenX)							
Perfluorooctanesulfonic acid (PFOS)	25.1	26.7		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	26.3		ng/L		105	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	22.8		ng/L		91	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	23.1		ng/L		92	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	23.6		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	25.9		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.9		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	26.8		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.9		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	27.0		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	24.8		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.8		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	24.3		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	27.6		ng/L		110	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	27.1		ng/L		108	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.9		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	24.2		ng/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	94		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	108		70 - 130
13C3-GenX	90		70 - 130

# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: MRL 380-198726/22-A**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.69	J	ng/L		84	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.14	J	ng/L		106	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.20	J	ng/L		109	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	1.82	J	ng/L		91	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.87	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.20	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.06	J	ng/L		103	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.87	J	ng/L		93	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.97	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.21	J	ng/L		110	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	1.65	J	ng/L		82	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.05	J	ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.16	J	ng/L		107	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.96	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.97	J	ng/L		98	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	102		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	90		70 - 130

**Lab Sample ID: 380-192534-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 198979**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 198726**

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	46.3		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	51.5		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	50.7		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	50.0		ng/L		100	70 - 130

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# QC Sample Results

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

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

**Lab Sample ID: 380-192534-B-1-A MS**

**Client Sample ID: Matrix Spike**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 198979**

**Prep Batch: 198726**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	50.5		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	48.0		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	50.2		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.1		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	51.3		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	50.4		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	52.4		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	49.8		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	51.9		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	47.3		ng/L		94	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	52.4		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.1		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	55.4		ng/L		110	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	48.9		ng/L		97	70 - 130
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
d5-NEtFOSAA	109		70 - 130						
13C2 PFHxA	110		70 - 130						
13C2 PFDA	108		70 - 130						
13C3-GenX	104		70 - 130						

**Lab Sample ID: 380-192534-C-1-A MSD**

**Client Sample ID: Matrix Spike Duplicate**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 198979**

**Prep Batch: 198726**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier					RPD	Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	45.3		ng/L		90	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	49.9		ng/L		99	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	49.7		ng/L		99	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	48.4		ng/L		96	70 - 130	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	48.7		ng/L		97	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	46.8		ng/L		93	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	51.3		ng/L		102	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	51.3		ng/L		102	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	50.5		ng/L		101	70 - 130	2	30

Eurofins Pomona



# QC Association Summary

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

Job ID: 380-192756-1  
 SDG: PFAS: Halawa Shaft Viewing Pool

## LCMS

### Prep Batch: 198685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192756-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
380-192756-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	
MBL 380-198685/20-A	Method Blank	Total/NA	Water	533	
LCS 380-198685/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-198685/21-A	Lab Control Sample	Total/NA	Water	533	
380-192608-B-7-A MS	Matrix Spike	Total/NA	Water	533	
380-192608-C-7-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Prep Batch: 198726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192756-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
380-192756-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1 DW	
MBL 380-198726/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-198726/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-198726/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-192534-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-192534-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 198740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192756-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	198685
380-192756-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	533	198685
MBL 380-198685/20-A	Method Blank	Total/NA	Water	533	198685
LCS 380-198685/22-A	Lab Control Sample	Total/NA	Water	533	198685
MRL 380-198685/21-A	Lab Control Sample	Total/NA	Water	533	198685
380-192608-B-7-A MS	Matrix Spike	Total/NA	Water	533	198685
380-192608-C-7-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	198685

### Analysis Batch: 198979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-192756-1	HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	198726
380-192756-2	FB HALAWA SHAFT VIEWING POOL	Total/NA	Water	537.1	198726
MBL 380-198726/21-A	Method Blank	Total/NA	Water	537.1	198726
LCS 380-198726/23-A	Lab Control Sample	Total/NA	Water	537.1	198726
MRL 380-198726/22-A	Lab Control Sample	Total/NA	Water	537.1	198726
380-192534-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	198726
380-192534-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	198726

# Lab Chronicle

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

Job ID: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

## Client Sample ID: HALAWA SHAFT VIEWING POOL

**Lab Sample ID: 380-192756-1**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			198685	XTD8	EA POM	01/17/26 07:41
Total/NA	Analysis	533		1	198740	SZ9R	EA POM	01/18/26 15:42
Total/NA	Prep	537.1 DW			198726	E9PK	EA POM	01/18/26 08:36
Total/NA	Analysis	537.1		1	198979	M7ML	EA POM	01/19/26 15:40

## Client Sample ID: FB HALAWA SHAFT VIEWING POOL

**Lab Sample ID: 380-192756-2**

Date Collected: 01/13/26 09:30

Matrix: Water

Date Received: 01/15/26 09:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			198685	XTD8	EA POM	01/17/26 07:41
Total/NA	Analysis	533		1	198740	SZ9R	EA POM	01/18/26 15:51
Total/NA	Prep	537.1 DW			198726	E9PK	EA POM	01/18/26 08:36
Total/NA	Analysis	537.1		1	198979	M7ML	EA POM	01/19/26 15:49

**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: 380-192756-1  
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
- 3
- 4
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# Method Summary

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

Job ID: 380-192756-1  
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: 380-192756-1  
SDG: PFAS: Halawa Shaft Viewing Pool

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-192756-1	HALAWA SHAFT VIEWING POOL	Water	01/13/26 09:30	01/15/26 09:38	Hawaii
380-192756-2	FB HALAWA SHAFT VIEWING POOL	Water	01/13/26 09:30	01/15/26 09:38	Hawaii

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



## Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-192756-1  
SDG Number: PFAS: Halawa Shaft Viewing Pool

**Login Number: 192756**

**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	