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# ANALYTICAL REPORT

## PREPARED FOR

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City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

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## JOB DESCRIPTION

RED-HILL
Weekly PFAS
RUSH Weekly Red Hill

## JOB NUMBER

380-119248-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

# Eurofins Eaton Analytical Pomona

## Job Notes

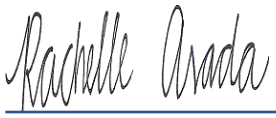
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

## Compliance Statement

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

## Authorization



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Authorized for release by
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# Table of Contents

# Definitions/Glossary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

## 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 |

**Job Narrative**
**380-119248-1**

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

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

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

**Receipt**
The samples were received on 10/24/2024 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8°C and 2.3°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: 380-119248-1
SDG: Weekly PFAS

## Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-1**

**PWSID Number: HI0000331**

| 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) | 3.3 | | 2.0 | | ng/L | 1 | | 533 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 3.9 | | 2.0 | | ng/L | 1 | | 537.1 | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 4.1 | | 2.0 | | ng/L | 1 | | 537.1 | Total/NA |

## Client Sample ID: FB: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-2**

**PWSID Number: HI0000331**

No Detections.

This Detection Summary does not include radiochemical test results.

## Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-1**

**Date Collected: 10/22/24 10:30**
**Date Received: 10/24/24 10:24**

**Matrix: Drinking Water**
**PWSID Number: HI0000331**

### 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 | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **3.3** | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **3.3** | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:39 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C3 HFPO-DA* | *82* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C6 PFDA* | *87* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C5 PFHxA* | *92* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C4 PFHpA* | *92* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C8 PFOA* | *89* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C9 PFNA* | *85* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C7 PFUnA* | *96* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C2 PFDoA* | *95* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C4 PFBA* | *102* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C5 PFPeA* | *104* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C3 PFBS* | *114* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |

## Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-1**

**Date Collected: 10/22/24 10:30**
**Date Received: 10/24/24 10:24**

**Matrix: Drinking Water**
**PWSID Number: HI0000331**

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

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C3 PFHxS* | *114* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C8 PFOS* | *112* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C2-4:2-FTS* | *151* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C2-6:2-FTS* | *144* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *1* |
| *13C2-8:2-FTS* | *122* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:39* | *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 | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **3.9** | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **4.1** | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *d5-NEtFOSAA* | *108* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:07* | *1* |
| *13C2 PFHxA* | *110* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:07* | *1* |
| *13C2 PFDA* | *108* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:07* | *1* |
| *13C3-GenX* | *99* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:07* | *1* |

## Client Sample ID: FB: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-2**

**Date Collected: 10/22/24 10:30**
**Date Received: 10/24/24 10:24**

**Matrix: Water**
**PWSID Number: HI0000331**

### 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 | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |

**Client Sample ID: FB: HALAWA SHAFT VIEWING POOL (331-241-TP401)**
**Lab Sample ID: 380-119248-2**
**Date Collected: 10/22/24 10:30**
**Matrix: Water**
**Date Received: 10/24/24 10:24**
**PWSID Number: HI0000331**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6 2 FTS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 17:41 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C3 HFPO-DA* | *95* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C6 PFDA* | *107* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C5 PFHxA* | *107* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C4 PFHpA* | *108* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C8 PFOA* | *109* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C9 PFNA* | *107* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C7 PFUnA* | *109* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C2 PFDoA* | *109* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C4 PFBA* | *112* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C5 PFPeA* | *112* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C3 PFBS* | *109* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C3 PFHxS* | *113* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C8 PFOS* | *108* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C2-4:2-FTS* | *135* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |

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

Job ID: 380-119248-1
SDG: Weekly PFAS

**Client Sample ID: FB: HALAWA SHAFT VIEWING POOL (331-241-TP401)**
**Lab Sample ID: 380-119248-2**
**Date Collected: 10/22/24 10:30**
**Matrix: Water**
**Date Received: 10/24/24 10:24**
**PWSID Number: HI0000331**

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

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C2-6:2-FTS* | *123* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *1* |
| *13C2-8:2-FTS* | *110* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 17:41* | *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 | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | ng/L | | 10/25/24 07:32 | 10/25/24 21:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *d5-NEtFOSAA* | *114* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:17* | *1* |
| *13C2 PFHxA* | *112* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:17* | *1* |
| *13C2 PFDA* | *104* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:17* | *1* |
| *13C3-GenX* | *102* | | *70 - 130* | *10/25/24 07:32* | *10/25/24 21:17* | *1* |

# Action Limit Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

## Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-1**

**PWSID Number: HI0000331**

### Compliance Check

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

| Analyte | Result | Qualifier | Unit | EPAMCL Limit | RL | Method | Prep Type |
|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | ng/L | 10 | 2.0 | 533 | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 3.3 | | ng/L | 10 | 2.0 | 533 | Total/NA |
| Perfluorononanoic acid (PFNA) | <2.0 | | ng/L | 10 | 2.0 | 533 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 3.3 | | 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) | 3.9 | | 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) | 4.1 | | 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 (331-241-TP401)

**Lab Sample ID: 380-119248-2**

**PWSID Number: HI0000331**

### Compliance Check

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

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

# Surrogate Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

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

**Matrix: Drinking Water** — **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | d5NEFOS (70-130) | PFHxA (70-130) | PFDA (70-130) | GenX (70-130) |
| 380-119248-1 | HALAWA SHAFT VIEWING PO( | 108 | 110 | 108 | 99 |

**Surrogate Legend**

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
GenX = 13C3-GenX

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

**Matrix: Water** — **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | |
|---|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | d5NEFOS (70-130) | PFHxA (70-130) | PFDA (70-130) | GenX (70-130) |
| 380-119083-E-1-A MS | Matrix Spike | 115 | 117 | 110 | 106 |
| 380-119083-F-1-A MSD | Matrix Spike Duplicate | 109 | 113 | 106 | 102 |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING POOL (331-241-TP401) | 114 | 112 | 104 | 102 |
| LCS 380-115449/22-A | Lab Control Sample | 109 | 109 | 105 | 102 |
| MBL 380-115449/20-A | Method Blank | 112 | 108 | 106 | 101 |
| MRL 380-115449/21-A | Lab Control Sample | 109 | 109 | 108 | 98 |

**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: 380-119248-1
SDG: Weekly PFAS

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

**Matrix: Drinking 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) |
| 380-119248-1 | HALAWA SHAFT VIEWING POO | 82 | 87 | 92 | 92 | 89 | 85 | 96 | 95 |
| 380-119248-1 MS | HALAWA SHAFT VIEWING POOL (331-241-TP401) | 89 | 88 | 92 | 92 | 89 | 86 | 92 | 93 |
| 380-119248-1 MSD | HALAWA SHAFT VIEWING POOL (331-241-TP401) | 87 | 81 | 92 | 93 | 89 | 81 | 87 | 87 |

| | | 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) |
| 380-119248-1 | HALAWA SHAFT VIEWING POO | 102 | 104 | 114 | 114 | 112 | 151 | 144 | 122 |
| 380-119248-1 MS | HALAWA SHAFT VIEWING POOL (331-241-TP401) | 102 | 108 | 111 | 113 | 110 | 153 | 144 | 120 |
| 380-119248-1 MSD | HALAWA SHAFT VIEWING POOL (331-241-TP401) | 102 | 108 | 110 | 108 | 106 | 142 | 166 | 125 |

**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

## 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) |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING | 95 | 107 | 107 | 108 | 109 | 107 | 109 | 109 |
| LCS 380-115886/22-A | Lab Control Sample | 100 | 114 | 113 | 112 | 112 | 109 | 112 | 110 |
| MBL 380-115886/20-A | Method Blank | 87 | 102 | 106 | 105 | 107 | 104 | 101 | 105 |
| MRL 380-115886/21-A | Lab Control Sample | 89 | 105 | 112 | 109 | 112 | 109 | 111 | 108 |

| | | 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) |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING | 112 | 112 | 109 | 113 | 108 | 135 | 123 | 110 |
| LCS 380-115886/22-A | Lab Control Sample | 114 | 113 | 118 | 115 | 109 | 135 | 129 | 118 |
| MBL 380-115886/20-A | Method Blank | 109 | 106 | 107 | 110 | 108 | 138 | 122 | 105 |
| MRL 380-115886/21-A | Lab Control Sample | 112 | 109 | 110 | 115 | 109 | 141 | 128 | 113 |

**Surrogate Legend**

# Isotope Dilution Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

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

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

**Lab Sample ID: MBL 380-115886/20-A**
**Matrix: Water**
**Analysis Batch: 116139**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | MBL Result | MBL Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <0.30 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <0.30 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <0.60 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <1.0 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <0.37 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorodecanoic acid (PFDA) | <0.31 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorododecanoic acid (PFDoA) | <0.54 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <0.39 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <0.32 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorohexanoic acid (PFHxA) | <0.46 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorononanoic acid (PFNA) | <0.40 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <0.43 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorooctanoic acid (PFOA) | <0.38 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <0.42 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluorobutanoic acid (PFBA) | <0.69 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <0.38 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <0.37 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <0.48 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <0.47 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <0.25 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <0.46 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <0.15 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoropentanoic acid (PFPeA) | <0.38 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <0.36 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <0.39 | | 2.0 | | ng/L | | 10/28/24 14:07 | 10/29/24 14:07 | 1 |

| *Isotope Dilution* | *MBL %Recovery* | *MBL Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C3 HFPO-DA* | *87* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C6 PFDA* | *102* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C5 PFHxA* | *106* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C4 PFHpA* | *105* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C8 PFOA* | *107* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C9 PFNA* | *104* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C7 PFUnA* | *101* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C2 PFDoA* | *105* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C4 PFBA* | *109* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C5 PFPeA* | *106* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C3 PFBS* | *107* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |
| *13C3 PFHxS* | *110* | | *50 - 200* | *10/28/24 14:07* | *10/29/24 14:07* | *1* |

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

**Lab Sample ID: MBL 380-115886/20-A**
**Matrix: Water**
**Analysis Batch: 116139**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Isotope Dilution | MBL %Recovery | MBL Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C8 PFOS | 108 | | 50 - 200 | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 13C2-4:2-FTS | 138 | | 50 - 200 | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 13C2-6:2-FTS | 122 | | 50 - 200 | 10/28/24 14:07 | 10/29/24 14:07 | 1 |
| 13C2-8:2-FTS | 105 | | 50 - 200 | 10/28/24 14:07 | 10/29/24 14:07 | 1 |

**Lab Sample ID: LCS 380-115886/22-A**
**Matrix: Water**
**Analysis Batch: 116139**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 60.2 | 57.8 | | ng/L | | 96 | 70 - 130 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | 60.2 | 57.4 | | ng/L | | 95 | 70 - 130 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 60.2 | 56.4 | | ng/L | | 94 | 70 - 130 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | 60.2 | 58.6 | | ng/L | | 97 | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS) | 60.2 | 57.9 | | ng/L | | 96 | 70 - 130 |
| Perfluorodecanoic acid (PFDA) | 60.2 | 56.5 | | ng/L | | 94 | 70 - 130 |
| Perfluorododecanoic acid (PFDoA) | 60.2 | 57.9 | | ng/L | | 96 | 70 - 130 |
| Perfluoroheptanoic acid (PFHpA) | 60.2 | 56.6 | | ng/L | | 94 | 70 - 130 |
| Perfluorohexanesulfonic acid (PFHxS) | 60.2 | 58.3 | | ng/L | | 97 | 70 - 130 |
| Perfluorohexanoic acid (PFHxA) | 60.2 | 56.8 | | ng/L | | 94 | 70 - 130 |
| Perfluorononanoic acid (PFNA) | 60.2 | 57.8 | | ng/L | | 96 | 70 - 130 |
| Perfluorooctanesulfonic acid (PFOS) | 60.2 | 56.5 | | ng/L | | 94 | 70 - 130 |
| Perfluorooctanoic acid (PFOA) | 60.2 | 57.7 | | ng/L | | 96 | 70 - 130 |
| Perfluoroundecanoic acid (PFUnA) | 60.2 | 58.6 | | ng/L | | 97 | 70 - 130 |
| Perfluorobutanoic acid (PFBA) | 60.2 | 58.4 | | ng/L | | 97 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 60.2 | 61.8 | | ng/L | | 103 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 60.2 | 60.8 | | ng/L | | 101 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 60.2 | 59.9 | | ng/L | | 99 | 70 - 130 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 60.2 | 62.3 | | ng/L | | 103 | 70 - 130 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 60.2 | 55.5 | | ng/L | | 92 | 70 - 130 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | 60.2 | 56.8 | | ng/L | | 94 | 70 - 130 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 60.2 | 58.7 | | ng/L | | 97 | 70 - 130 |
| Perfluoropentanoic acid (PFPeA) | 60.2 | 59.0 | | ng/L | | 98 | 70 - 130 |
| Perfluoroheptanesulfonic acid (PFHpS) | 60.2 | 61.7 | | ng/L | | 102 | 70 - 130 |

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

**Lab Sample ID: LCS 380-115886/22-A**
**Matrix: Water**
**Analysis Batch: 116139**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluoropentanesulfonic acid (PFPeS) | | | 60.2 | 59.4 | | ng/L | | 99 | 70 - 130 | | |

| *Isotope Dilution* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *13C3 HFPO-DA* | *100* | | *50 - 200* |
| *13C6 PFDA* | *114* | | *50 - 200* |
| *13C5 PFHxA* | *113* | | *50 - 200* |
| *13C4 PFHpA* | *112* | | *50 - 200* |
| *13C8 PFOA* | *112* | | *50 - 200* |
| *13C9 PFNA* | *109* | | *50 - 200* |
| *13C7 PFUnA* | *112* | | *50 - 200* |
| *13C2 PFDoA* | *110* | | *50 - 200* |
| *13C4 PFBA* | *114* | | *50 - 200* |
| *13C5 PFPeA* | *113* | | *50 - 200* |
| *13C3 PFBS* | *118* | | *50 - 200* |
| *13C3 PFHxS* | *115* | | *50 - 200* |
| *13C8 PFOS* | *109* | | *50 - 200* |
| *13C2-4:2-FTS* | *135* | | *50 - 200* |
| *13C2-6:2-FTS* | *129* | | *50 - 200* |
| *13C2-8:2-FTS* | *118* | | *50 - 200* |

**Lab Sample ID: MRL 380-115886/21-A**
**Matrix: Water**
**Analysis Batch: 116139**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | | | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | | | 2.00 | 1.84 | J | ng/L | | 92 | 50 - 150 | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | | | 2.00 | 1.86 | J | ng/L | | 93 | 50 - 150 | | |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | | | 2.00 | 1.92 | J | ng/L | | 96 | 50 - 150 | | |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | | | 2.00 | 1.94 | J | ng/L | | 97 | 50 - 150 | | |
| Perfluorobutanesulfonic acid (PFBS) | | | 2.00 | 1.98 | J | ng/L | | 99 | 50 - 150 | | |
| Perfluorodecanoic acid (PFDA) | | | 2.00 | 2.06 | J | ng/L | | 103 | 50 - 150 | | |
| Perfluorododecanoic acid (PFDoA) | | | 2.00 | 1.95 | J | ng/L | | 97 | 50 - 150 | | |
| Perfluoroheptanoic acid (PFHpA) | | | 2.00 | 1.90 | J | ng/L | | 95 | 50 - 150 | | |
| Perfluorohexanesulfonic acid (PFHxS) | | | 2.00 | 1.97 | J | ng/L | | 98 | 50 - 150 | | |
| Perfluorohexanoic acid (PFHxA) | | | 2.00 | 1.95 | J | ng/L | | 97 | 50 - 150 | | |
| Perfluorononanoic acid (PFNA) | | | 2.00 | 1.99 | J | ng/L | | 99 | 50 - 150 | | |
| Perfluorooctanesulfonic acid (PFOS) | | | 2.00 | 2.00 | J | ng/L | | 100 | 50 - 150 | | |
| Perfluorooctanoic acid (PFOA) | | | 2.00 | 2.05 | J | ng/L | | 102 | 50 - 150 | | |
| Perfluoroundecanoic acid (PFUnA) | | | 2.00 | 2.03 | J | ng/L | | 101 | 50 - 150 | | |
| Perfluorobutanoic acid (PFBA) | | | 2.00 | 2.04 | J | ng/L | | 102 | 50 - 150 | | |

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

**Lab Sample ID: MRL 380-115886/21-A**
**Matrix: Water**
**Analysis Batch: 116139**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 2.00 | 2.26 | J | ng/L | | 113 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 2.00 | 2.02 | J | ng/L | | 101 | 50 - 150 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 2.00 | 2.32 | J | ng/L | | 116 | 50 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 2.00 | 2.20 | J | ng/L | | 110 | 50 - 150 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 2.00 | 2.00 | J | ng/L | | 100 | 50 - 150 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | 2.00 | 1.95 | J | ng/L | | 97 | 50 - 150 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 2.00 | 2.01 | J | ng/L | | 100 | 50 - 150 |
| Perfluoropentanoic acid (PFPeA) | 2.00 | 2.10 | J | ng/L | | 105 | 50 - 150 |
| Perfluoroheptanesulfonic acid (PFHpS) | 2.00 | 1.97 | J | ng/L | | 98 | 50 - 150 |
| Perfluoropentanesulfonic acid (PFPeS) | 2.00 | 1.91 | J | ng/L | | 95 | 50 - 150 |

| *Isotope Dilution* | *MRL %Recovery* | *MRL Qualifier* | *Limits* |
|---|---|---|---|
| *13C3 HFPO-DA* | *89* | | *50 - 200* |
| *13C6 PFDA* | *105* | | *50 - 200* |
| *13C5 PFHxA* | *112* | | *50 - 200* |
| *13C4 PFHpA* | *109* | | *50 - 200* |
| *13C8 PFOA* | *112* | | *50 - 200* |
| *13C9 PFNA* | *109* | | *50 - 200* |
| *13C7 PFUnA* | *111* | | *50 - 200* |
| *13C2 PFDoA* | *108* | | *50 - 200* |
| *13C4 PFBA* | *112* | | *50 - 200* |
| *13C5 PFPeA* | *109* | | *50 - 200* |
| *13C3 PFBS* | *110* | | *50 - 200* |
| *13C3 PFHxS* | *115* | | *50 - 200* |
| *13C8 PFOS* | *109* | | *50 - 200* |
| *13C2-4:2-FTS* | *141* | | *50 - 200* |
| *13C2-6:2-FTS* | *128* | | *50 - 200* |
| *13C2-8:2-FTS* | *113* | | *50 - 200* |

**Lab Sample ID: 380-119248-1 MS**
**Matrix: Drinking Water**
**Analysis Batch: 116139**

**Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 120 | 102 | | ng/L | | 85 | 70 - 130 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 120 | 106 | | ng/L | | 88 | 70 - 130 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 120 | 106 | | ng/L | | 88 | 70 - 130 |

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

**Lab Sample ID: 380-119248-1 MS**
**Matrix: Drinking Water**
**Analysis Batch: 116139**

**Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| 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 | | 120 | 117 | | ng/L | | 97 | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 120 | 116 | | ng/L | | 97 | 70 - 130 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 120 | 114 | | ng/L | | 95 | 70 - 130 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 120 | 110 | | ng/L | | 92 | 70 - 130 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 120 | 109 | | ng/L | | 91 | 70 - 130 |
| Perfluorohexanesulfonic acid (PFHxS) | 3.3 | | 120 | 114 | | ng/L | | 92 | 70 - 130 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 120 | 116 | | ng/L | | 96 | 70 - 130 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 120 | 115 | | ng/L | | 96 | 70 - 130 |
| Perfluorooctanesulfonic acid (PFOS) | 3.3 | | 120 | 109 | | ng/L | | 88 | 70 - 130 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 120 | 112 | | ng/L | | 92 | 70 - 130 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 120 | 110 | | ng/L | | 92 | 70 - 130 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 120 | 113 | | ng/L | | 94 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 120 | 113 | | ng/L | | 94 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 120 | 106 | | ng/L | | 88 | 70 - 130 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0 | | 120 | 116 | | ng/L | | 97 | 70 - 130 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 120 | 118 | | ng/L | | 99 | 70 - 130 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 120 | 114 | | ng/L | | 95 | 70 - 130 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 120 | 116 | | ng/L | | 97 | 70 - 130 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 120 | 112 | | ng/L | | 93 | 70 - 130 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 120 | 112 | | ng/L | | 93 | 70 - 130 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 120 | 113 | | ng/L | | 94 | 70 - 130 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 120 | 110 | | ng/L | | 92 | 70 - 130 |

| *Isotope Dilution* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *13C3 HFPO-DA* | *89* | | *50 - 200* |
| *13C6 PFDA* | *88* | | *50 - 200* |
| *13C5 PFHxA* | *92* | | *50 - 200* |
| *13C4 PFHpA* | *92* | | *50 - 200* |
| *13C8 PFOA* | *89* | | *50 - 200* |
| *13C9 PFNA* | *86* | | *50 - 200* |
| *13C7 PFUnA* | *92* | | *50 - 200* |
| *13C2 PFDoA* | *93* | | *50 - 200* |
| *13C4 PFBA* | *102* | | *50 - 200* |
| *13C5 PFPeA* | *108* | | *50 - 200* |
| *13C3 PFBS* | *111* | | *50 - 200* |
| *13C3 PFHxS* | *113* | | *50 - 200* |
| *13C8 PFOS* | *110* | | *50 - 200* |

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

**Lab Sample ID: 380-119248-1 MS**
**Matrix: Drinking Water**
**Analysis Batch: 116139**

**Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| *Isotope Dilution* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *13C2-4:2-FTS* | *153* | | *50 - 200* |
| *13C2-6:2-FTS* | *144* | | *50 - 200* |
| *13C2-8:2-FTS* | *120* | | *50 - 200* |

**Lab Sample ID: 380-119248-1 MSD**
**Matrix: Drinking Water**
**Analysis Batch: 116139**

**Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)**
**Prep Type: Total/NA**
**Prep Batch: 115886**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 120 | 106 | | ng/L | | 89 | 70 - 130 | 4 | 30 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 120 | 106 | | ng/L | | 88 | 70 - 130 | 0 | 30 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 120 | 101 | | ng/L | | 84 | 70 - 130 | 5 | 30 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 120 | 118 | | ng/L | | 98 | 70 - 130 | 1 | 30 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 120 | 112 | | ng/L | | 93 | 70 - 130 | 4 | 30 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 120 | 116 | | ng/L | | 97 | 70 - 130 | 1 | 30 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 120 | 110 | | ng/L | | 92 | 70 - 130 | 0 | 30 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 120 | 109 | | ng/L | | 90 | 70 - 130 | 0 | 30 |
| Perfluorohexanesulfonic acid (PFHxS) | 3.3 | | 120 | 115 | | ng/L | | 93 | 70 - 130 | 1 | 30 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 120 | 113 | | ng/L | | 93 | 70 - 130 | 3 | 30 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 120 | 111 | | ng/L | | 93 | 70 - 130 | 3 | 30 |
| Perfluorooctanesulfonic acid (PFOS) | 3.3 | | 120 | 111 | | ng/L | | 90 | 70 - 130 | 2 | 30 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 120 | 110 | | ng/L | | 91 | 70 - 130 | 1 | 30 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 120 | 113 | | ng/L | | 94 | 70 - 130 | 3 | 30 |
| Perfluorobutanoic acid (PFBA) | <2.0 | | 120 | 113 | | ng/L | | 94 | 70 - 130 | 0 | 30 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.0 | | 120 | 112 | | ng/L | | 94 | 70 - 130 | 1 | 30 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.0 | | 120 | 110 | | ng/L | | 92 | 70 - 130 | 4 | 30 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <2.0 | | 120 | 111 | | ng/L | | 92 | 70 - 130 | 5 | 30 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 120 | 120 | | ng/L | | 100 | 70 - 130 | 1 | 30 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 120 | 109 | | ng/L | | 91 | 70 - 130 | 4 | 30 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 120 | 117 | | ng/L | | 97 | 70 - 130 | 0 | 30 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 120 | 110 | | ng/L | | 91 | 70 - 130 | 2 | 30 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 120 | 118 | | ng/L | | 98 | 70 - 130 | 5 | 30 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 120 | 116 | | ng/L | | 97 | 70 - 130 | 3 | 30 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 120 | 115 | | ng/L | | 96 | 70 - 130 | 5 | 30 |

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

| Isotope Dilution | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 13C3 HFPO-DA | 87 | | 50 - 200 |
| 13C6 PFDA | 81 | | 50 - 200 |
| 13C5 PFHxA | 92 | | 50 - 200 |
| 13C4 PFHpA | 93 | | 50 - 200 |
| 13C8 PFOA | 89 | | 50 - 200 |
| 13C9 PFNA | 81 | | 50 - 200 |
| 13C7 PFUnA | 87 | | 50 - 200 |
| 13C2 PFDoA | 87 | | 50 - 200 |
| 13C4 PFBA | 102 | | 50 - 200 |
| 13C5 PFPeA | 108 | | 50 - 200 |
| 13C3 PFBS | 110 | | 50 - 200 |
| 13C3 PFHxS | 108 | | 50 - 200 |
| 13C8 PFOS | 106 | | 50 - 200 |
| 13C2-4:2-FTS | 142 | | 50 - 200 |
| 13C2-6:2-FTS | 166 | | 50 - 200 |
| 13C2-8:2-FTS | 125 | | 50 - 200 |

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

**Lab Sample ID: MBL 380-115449/20-A**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| 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 | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <0.43 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <0.42 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <0.58 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <0.42 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorohexanoic acid (PFHxA) | <0.46 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorododecanoic acid (PFDoA) | <0.54 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorooctanoic acid (PFOA) | <0.38 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorodecanoic acid (PFDA) | <0.31 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <0.32 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <0.37 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <0.39 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorononanoic acid (PFNA) | <0.40 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorotetradecanoic acid (PFTA) | <0.54 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <0.36 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <0.30 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <0.30 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <0.60 | | 2.0 | | ng/L | | 10/25/24 07:32 | 10/25/24 18:15 | 1 |

| Surrogate | MBL %Recovery | MBL Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| d5-NEtFOSAA | 112 | | 70 - 130 | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| 13C2 PFHxA | 108 | | 70 - 130 | 10/25/24 07:32 | 10/25/24 18:15 | 1 |
| 13C2 PFDA | 106 | | 70 - 130 | 10/25/24 07:32 | 10/25/24 18:15 | 1 |

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

**Lab Sample ID: MBL 380-115449/20-A**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Surrogate | MBL %Recovery | MBL Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 13C3-GenX | 101 | | 70 - 130 | 10/25/24 07:32 | 10/25/24 18:15 | 1 |

**Lab Sample ID: LCS 380-115449/22-A**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | 25.1 | 24.8 | | ng/L | | 99 | 70 - 130 |
| Perfluorooctanesulfonic acid (PFOS) | 25.1 | 27.9 | | ng/L | | 111 | 70 - 130 |
| Perfluoroundecanoic acid (PFUnA) | 25.1 | 25.4 | | ng/L | | 101 | 70 - 130 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 25.1 | 26.5 | | ng/L | | 106 | 70 - 130 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 25.1 | 27.6 | | ng/L | | 110 | 70 - 130 |
| Perfluorohexanoic acid (PFHxA) | 25.1 | 26.2 | | ng/L | | 104 | 70 - 130 |
| Perfluorododecanoic acid (PFDoA) | 25.1 | 26.1 | | ng/L | | 104 | 70 - 130 |
| Perfluorooctanoic acid (PFOA) | 25.1 | 28.2 | | ng/L | | 113 | 70 - 130 |
| Perfluorodecanoic acid (PFDA) | 25.1 | 25.8 | | ng/L | | 103 | 70 - 130 |
| Perfluorohexanesulfonic acid (PFHxS) | 25.1 | 29.2 | | ng/L | | 116 | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS) | 25.1 | 25.3 | | ng/L | | 101 | 70 - 130 |
| Perfluoroheptanoic acid (PFHpA) | 25.1 | 28.3 | | ng/L | | 113 | 70 - 130 |
| Perfluorononanoic acid (PFNA) | 25.1 | 25.9 | | ng/L | | 103 | 70 - 130 |
| Perfluorotetradecanoic acid (PFTA) | 25.1 | 25.8 | | ng/L | | 103 | 70 - 130 |
| Perfluorotridecanoic acid (PFTrDA) | 25.1 | 25.8 | | ng/L | | 103 | 70 - 130 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | 25.1 | 26.7 | | ng/L | | 107 | 70 - 130 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 25.1 | 26.4 | | ng/L | | 105 | 70 - 130 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 25.1 | 27.0 | | ng/L | | 108 | 70 - 130 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| d5-NEtFOSAA | 109 | | 70 - 130 |
| 13C2 PFHxA | 109 | | 70 - 130 |
| 13C2 PFDA | 105 | | 70 - 130 |
| 13C3-GenX | 102 | | 70 - 130 |

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

**Lab Sample ID: MRL 380-115449/21-A**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Analyte | | | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | | | 2.00 | 1.80 | J | ng/L | | 90 | 50 - 150 | | |
| Perfluorooctanesulfonic acid (PFOS) | | | 2.00 | 2.15 | J | ng/L | | 108 | 50 - 150 | | |
| Perfluoroundecanoic acid (PFUnA) | | | 2.00 | 1.93 | J | ng/L | | 97 | 50 - 150 | | |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | | | 2.00 | 1.94 | J | ng/L | | 97 | 50 - 150 | | |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | | | 2.00 | 2.02 | J | ng/L | | 101 | 50 - 150 | | |
| Perfluorohexanoic acid (PFHxA) | | | 2.00 | 1.91 | J | ng/L | | 96 | 50 - 150 | | |
| Perfluorododecanoic acid (PFDoA) | | | 2.00 | 1.92 | J | ng/L | | 96 | 50 - 150 | | |
| Perfluorooctanoic acid (PFOA) | | | 2.00 | 2.05 | J | ng/L | | 103 | 50 - 150 | | |
| Perfluorodecanoic acid (PFDA) | | | 2.00 | 1.95 | J | ng/L | | 98 | 50 - 150 | | |
| Perfluorohexanesulfonic acid (PFHxS) | | | 2.00 | 2.28 | J | ng/L | | 114 | 50 - 150 | | |
| Perfluorobutanesulfonic acid (PFBS) | | | 2.00 | 2.02 | J | ng/L | | 101 | 50 - 150 | | |
| Perfluoroheptanoic acid (PFHpA) | | | 2.00 | 2.13 | J | ng/L | | 107 | 50 - 150 | | |
| Perfluorononanoic acid (PFNA) | | | 2.00 | 2.03 | J | ng/L | | 102 | 50 - 150 | | |
| Perfluorotetradecanoic acid (PFTA) | | | 2.00 | 2.03 | J | ng/L | | 102 | 50 - 150 | | |
| Perfluorotridecanoic acid (PFTrDA) | | | 2.00 | 1.90 | J | ng/L | | 95 | 50 - 150 | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | | | 2.00 | 2.08 | J | ng/L | | 104 | 50 - 150 | | |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | | | 2.00 | 1.95 | J | ng/L | | 98 | 50 - 150 | | |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | | | 2.00 | 1.99 | J | ng/L | | 100 | 50 - 150 | | |

| *Surrogate* | *MRL %Recovery* | *MRL Qualifier* | *Limits* |
|---|---|---|---|
| *d5-NEtFOSAA* | *109* | | *70 - 130* |
| *13C2 PFHxA* | *109* | | *70 - 130* |
| *13C2 PFDA* | *108* | | *70 - 130* |
| *13C3-GenX* | *98* | | *70 - 130* |

**Lab Sample ID: 380-119083-E-1-A MS**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 25.2 | 25.9 | | ng/L | | 103 | 70 - 130 | | |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 25.2 | 27.8 | | ng/L | | 111 | 70 - 130 | | |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 25.2 | 25.9 | | ng/L | | 103 | 70 - 130 | | |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 25.2 | 27.1 | | ng/L | | 108 | 70 - 130 | | |

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

**Lab Sample ID: 380-119083-E-1-A MS**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 25.2 | 28.6 | | ng/L | | 114 | 70 - 130 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 25.2 | 27.3 | | ng/L | | 109 | 70 - 130 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 25.2 | 26.8 | | ng/L | | 106 | 70 - 130 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 25.2 | 28.9 | | ng/L | | 115 | 70 - 130 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 25.2 | 25.4 | | ng/L | | 101 | 70 - 130 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 25.2 | 29.0 | | ng/L | | 115 | 70 - 130 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 25.2 | 27.0 | | ng/L | | 107 | 70 - 130 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 25.2 | 28.2 | | ng/L | | 112 | 70 - 130 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 25.2 | 27.3 | | ng/L | | 109 | 70 - 130 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 25.2 | 25.9 | | ng/L | | 103 | 70 - 130 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 25.2 | 26.4 | | ng/L | | 105 | 70 - 130 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 25.2 | 27.2 | | ng/L | | 108 | 70 - 130 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 25.2 | 26.4 | | ng/L | | 105 | 70 - 130 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 25.2 | 27.7 | | ng/L | | 110 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *d5-NEtFOSAA* | *115* | | *70 - 130* |
| *13C2 PFHxA* | *117* | | *70 - 130* |
| *13C2 PFDA* | *110* | | *70 - 130* |
| *13C3-GenX* | *106* | | *70 - 130* |

**Lab Sample ID: 380-119083-F-1-A MSD**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX) | <2.0 | | 25.2 | 25.1 | | ng/L | | 100 | 70 - 130 | 3 | 30 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 25.2 | 27.6 | | ng/L | | 110 | 70 - 130 | 1 | 30 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 25.2 | 26.2 | | ng/L | | 104 | 70 - 130 | 1 | 30 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 25.2 | 27.5 | | ng/L | | 109 | 70 - 130 | 1 | 30 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 25.2 | 28.0 | | ng/L | | 111 | 70 - 130 | 2 | 30 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 25.2 | 27.4 | | ng/L | | 109 | 70 - 130 | 1 | 30 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 25.2 | 26.7 | | ng/L | | 106 | 70 - 130 | 0 | 30 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 25.2 | 28.3 | | ng/L | | 113 | 70 - 130 | 2 | 30 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 25.2 | 26.2 | | ng/L | | 104 | 70 - 130 | 3 | 30 |

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

**Lab Sample ID: 380-119083-F-1-A MSD**
**Matrix: Water**
**Analysis Batch: 115558**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 115449**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 25.2 | 29.3 | | ng/L | | 117 | 70 - 130 | 1 | 30 |
| Perfluorobutanesulfonic acid (PFBS) | <2.0 | | 25.2 | 28.3 | | ng/L | | 113 | 70 - 130 | 5 | 30 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 25.2 | 28.0 | | ng/L | | 111 | 70 - 130 | 1 | 30 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 25.2 | 26.5 | | ng/L | | 105 | 70 - 130 | 3 | 30 |
| Perfluorotetradecanoic acid (PFTA) | <2.0 | | 25.2 | 25.7 | | ng/L | | 102 | 70 - 130 | 1 | 30 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 25.2 | 26.1 | | ng/L | | 104 | 70 - 130 | 1 | 30 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS) | <2.0 | | 25.2 | 27.8 | | ng/L | | 111 | 70 - 130 | 2 | 30 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | <2.0 | | 25.2 | 26.9 | | ng/L | | 107 | 70 - 130 | 2 | 30 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 25.2 | 27.4 | | ng/L | | 109 | 70 - 130 | 1 | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *d5-NEtFOSAA* | *109* | | *70 - 130* |
| *13C2 PFHxA* | *113* | | *70 - 130* |
| *13C2 PFDA* | *106* | | *70 - 130* |
| *13C3-GenX* | *102* | | *70 - 130* |

# QC Association Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

## LCMS

### Prep Batch: 115449

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-119248-1 | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 537.1 DW | |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING POOL (331-241- | Total/NA | Water | 537.1 DW | |
| MBL 380-115449/20-A | Method Blank | Total/NA | Water | 537.1 DW | |
| LCS 380-115449/22-A | Lab Control Sample | Total/NA | Water | 537.1 DW | |
| MRL 380-115449/21-A | Lab Control Sample | Total/NA | Water | 537.1 DW | |
| 380-119083-E-1-A MS | Matrix Spike | Total/NA | Water | 537.1 DW | |
| 380-119083-F-1-A MSD | Matrix Spike Duplicate | Total/NA | Water | 537.1 DW | |

### Analysis Batch: 115558

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-119248-1 | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 537.1 | 115449 |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING POOL (331-241- | Total/NA | Water | 537.1 | 115449 |
| MBL 380-115449/20-A | Method Blank | Total/NA | Water | 537.1 | 115449 |
| LCS 380-115449/22-A | Lab Control Sample | Total/NA | Water | 537.1 | 115449 |
| MRL 380-115449/21-A | Lab Control Sample | Total/NA | Water | 537.1 | 115449 |
| 380-119083-E-1-A MS | Matrix Spike | Total/NA | Water | 537.1 | 115449 |
| 380-119083-F-1-A MSD | Matrix Spike Duplicate | Total/NA | Water | 537.1 | 115449 |

### Prep Batch: 115886

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-119248-1 | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 533 | |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING POOL (331-241- | Total/NA | Water | 533 | |
| MBL 380-115886/20-A | Method Blank | Total/NA | Water | 533 | |
| LCS 380-115886/22-A | Lab Control Sample | Total/NA | Water | 533 | |
| MRL 380-115886/21-A | Lab Control Sample | Total/NA | Water | 533 | |
| 380-119248-1 MS | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 533 | |
| 380-119248-1 MSD | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 533 | |

### Analysis Batch: 116139

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-119248-1 | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 533 | 115886 |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING POOL (331-241- | Total/NA | Water | 533 | 115886 |
| MBL 380-115886/20-A | Method Blank | Total/NA | Water | 533 | 115886 |
| LCS 380-115886/22-A | Lab Control Sample | Total/NA | Water | 533 | 115886 |
| MRL 380-115886/21-A | Lab Control Sample | Total/NA | Water | 533 | 115886 |
| 380-119248-1 MS | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 533 | 115886 |
| 380-119248-1 MSD | HALAWA SHAFT VIEWING POOL (331-241-TP4 | Total/NA | Drinking Water | 533 | 115886 |

# Lab Chronicle

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

Job ID: 380-119248-1
SDG: Weekly PFAS

## Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-1**

**Date Collected: 10/22/24 10:30**
**Date Received: 10/24/24 10:24**

**Matrix: Drinking Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 533 | | | 115886 | N8NE | EA POM | 10/28/24 14:07 |
| Total/NA | Analysis | 533 | | 1 | 116139 | Y5FM | EA POM | 10/29/24 14:39 |
| Total/NA | Prep | 537.1 DW | | | 115449 | G9MN | EA POM | 10/25/24 07:32 |
| Total/NA | Analysis | 537.1 | | 1 | 115558 | Y5FM | EA POM | 10/25/24 21:07 |

## Client Sample ID: FB: HALAWA SHAFT VIEWING POOL (331-241-TP401)

**Lab Sample ID: 380-119248-2**

**Date Collected: 10/22/24 10:30**
**Date Received: 10/24/24 10:24**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 533 | | | 115886 | N8NE | EA POM | 10/28/24 14:07 |
| Total/NA | Analysis | 533 | | 1 | 116139 | Y5FM | EA POM | 10/29/24 17:41 |
| Total/NA | Prep | 537.1 DW | | | 115449 | G9MN | EA POM | 10/25/24 07:32 |
| Total/NA | Analysis | 537.1 | | 1 | 115558 | Y5FM | EA POM | 10/25/24 21:17 |

**Laboratory References:**

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

# Accreditation/Certification Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

## Laboratory: Eurofins Eaton Analytical Pomona

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Hawaii | State | CA00006 | 01-31-25 |

# Method Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 533 | Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water | EPA | EA POM |
| 537.1 | Perfluorinated Alkyl Acids (LC/MS) | EPA | EA POM |
| 533 | Extraction of Perfluorinated and Polyfluorinated Alkyl Acids | EPA | EA POM |
| 537.1 DW | Extraction of Perfluorinated Alkyl Acids | EPA | EA POM |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

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

# Sample Summary

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

Job ID: 380-119248-1
SDG: Weekly PFAS

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | PWSID Number |
|---|---|---|---|---|---|
| 380-119248-1 | HALAWA SHAFT VIEWING POOL (331-241-TP401) | Drinking Water | 10/22/24 10:30 | 10/24/24 10:24 | HI0000331 |
| 380-119248-2 | FB: HALAWA SHAFT VIEWING POOL (331-241-TP401) | Water | 10/22/24 10:30 | 10/24/24 10:24 | HI0000331 |

**Eurofins Eaton Analytical Pomona**
941 Corporate Center Drive
Pomona CA 91768-2642
Phone (626) 386-1100

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler: EJ | Lab PM: Arada Rachelle | Carrier Tracking No(s): | COC No: 380-28005-2757 1 |
|---|---|---|---|---|
| Client Contact: Dr Ron Fenstemacher | Phone: 808-748-5840 | E-Mail: Rachelle.Arada@et.eurofinsus.com | State of Origin: | Page: Page 1 of 1 |
| Company: City & County of Honolulu | PWSID: | | | Job #: |
| Address: 630 South Beretania Street Chemistry Lab | Due Date Requested | | | |
| City: Honolulu | TAT Requested (days) | | | |
| State, Zip: HI 96843 | Compliance Project: Δ Yes Δ No | | | |
| Phone: 808-748-5091(Tel) | PO #: C20525101 exp 05312023 | | | |
| Email: RFENSTEMACHER@hbws org | WO #: | | | |
| Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill | Project #: 38001111 | | | |
| Site: Hawaii | SSOW#: | | | |

**Analysis Requested**

Preservation Codes:
R NaThioSO4
RA NaThio/HCl
Q Na2SO3
QA Na2SO3/HCl
Y Trizma
I NH4 Acetate
Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 625 1, 625.1_SIM R | 8015B_GRO_LL (MOD) GRO RA | 8015B_DRO_LL_CS HNL Ranges C10-C24/C24 C36/C8-C18 Q | 525 2_PREC (MOD) 525plus Plus TICs QA | 537 1_DW_PREC 537 1 Full List Y | 533 All Analytes I | Total Number of containers | Special Instructions/Note. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | | |
| Halawa Shaft Viewing Pool | 10/22/24 | 1030 | G | Water | | | | | | | 3 | 3 | | |
| FB Halawa Shaft Viewing Pool | 10/22/24 | 1030 | | Water | | | | | | | 1 | 1 | | |

380-119248 COC

***Possible Hazard Identification***
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

***Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)***
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

① 7794 7406 3170 ② 7794 7406 3180

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: FED EX |
|---|---|---|---|

| | Relinquished by: [redacted] | Date/Time: 10/23/24 1200 | Company | Received by: B. RETTNER | Date/Time: 10/24/2024 10:24 | Company EEAP |
|---|---|---|---|---|---|---|
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No. | Cooler Temperature(s) °C and Other Remarks: (757A) ① 1.8°-0.0°=1.8° ② 2.3°-0.0°=2.3° GEL-FROZEN |
|---|---|---|

Ver: 04/02/2024

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-119248-1
SDG Number: Weekly PFAS

**Login Number: 119248**
**List Number: 1**
**Creator: Segura, Ryan**

**List Source: Eurofins Eaton Analytical Pomona**

| Question | Answer | Comment |
|---|---|---|
| The coolers custody seal, if present, is intact. | N/A | |
| Sample custody seals, if present, are intact. | N/A | |
| Samples were received on ice. | True | |
| Cooler(s) Temperature is acceptable. | True | |
| Cooler(s) Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and is legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| ClO4 headspace requirement met (>50% for CA, >30% for other states). | True | |
| Samples do not require splitting or compositing. | True | |
| Container provided by EEA | True | |