eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 10/19/2026 3:40:32 PM

## JOB DESCRIPTION

INTERA - Red-Hill-Incident
Site S1 PFAS 1633

## JOB NUMBER

380-240810-1

Eurofins Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.



my EOL

## 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



Generated
10/19/2026 3:40:32 PM

Authorized for release by
Maria Lopez, Project Manager
Maria.Lopez@et.eurofinsus.com
(626)386-1145

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 3
Definitions/Glossary . . . . . 4
Case Narrative . . . . . 5
Detection Summary . . . . . 6
Client Sample Results . . . . . 7
Action Limit Summary . . . . . 9
Isotope Dilution Summary . . . . . 10
QC Sample Results . . . . . 12
QC Association Summary . . . . . 22
Lab Chronicle . . . . . 23
Certification Summary . . . . . 24
Method Summary . . . . . 25
Sample Summary . . . . . 26
Chain of Custody . . . . . 27
Receipt Checklists . . . . . 30

# Definitions/Glossary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## Qualifiers

### LCMS

| Qualifier | Qualifier Description |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| E | Result exceeded calibration range. |

## 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**
**380-240810-1**

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 sample was received on 10/8/2026 9:10 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C.

**PFAS**
Method QSM B-24: If aqueous samples were extracted beyond 7 days from collection, NMeFOSE, NEtFOSE, NMeFOSAA, and NEtFOSAA may be affected. If soil or tissue samples were extracted beyond 3 days from collection, NFDHA may be affected. If sample extracts, regardless of matrix, were analyzed beyond 28 days from extraction, 9Cl-PF3ONS and 11Cl-PF3OUdS may be affected. Per DoD Environmental Data Quality Workgroup Memorandum dated March 27, 2025, none of these analytes have associated regulatory limits or toxicity factors, thus any additional uncertainty associated with a holding time exceedance for these analytes will not affect current decision making and the DoD is willing to accept any additional uncertainty.

Method QSM B-24: The concentration of one or more analytes in one or more samples exceeded the instrument calibration range, as indicated by the E-qualifier; however, the peak(s) did not saturate the instrument detector.

Method QSM B-24: Due to the high concentration of Perfluoropentanoic acid (PFPeA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-941822 and analytical batch 320-942347 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

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: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## Client Sample ID: BWS2153-S1-AQ

## Lab Sample ID: 380-240810-1

| Analyte | Result | Qualifier | RL | | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorooctanoic acid (PFOA) | 5.4 | | 1.5 | | ng/L | 1 | | QSM B-24 | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 3.2 | | 1.5 | | ng/L | 1 | | QSM B-24 | Total/NA |
| Perfluorooctanesulfonic acid (PFOS) | 16 | | 1.5 | | ng/L | 1 | | QSM B-24 | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: BWS2153-S1-AQ

**Date Collected: 10/07/26 09:15**
**Date Received: 10/08/26 09:10**

## Lab Sample ID: 380-240810-1

**Matrix: Water**

### Method: DoD 6.0 QSM B-24 - PFAS for QSM 6.0, Table B-24

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | <3.0 | | 3.0 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoropentanoic acid (PFPeA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorohexanoic acid (PFHxA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| **Perfluorooctanoic acid (PFOA)** | **5.4** | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorononanoic acid (PFNA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorodecanoic acid (PFDA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorododecanoic acid (PFDoA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <3.0 | | 3.0 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| **Perfluorohexanesulfonic acid (PFHxS)** | **3.2** | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| **Perfluorooctanesulfonic acid (PFOS)** | **16** | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorononanesulfonic acid (PFNS) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <3.0 | | 3.0 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <3.0 | | 3.0 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <3.0 | | 3.0 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | <7.5 | | 7.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | <7.5 | | 7.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | <1.1 | | 1.1 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

**Client Sample ID: BWS2153-S1-AQ**
**Date Collected: 10/07/26 09:15**
**Date Received: 10/08/26 09:10**

**Lab Sample ID: 380-240810-1**
**Matrix: Water**

**Method: DoD 6.0 QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)**

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | <3.0 | | 3.0 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | <7.5 | | 7.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | <7.5 | | 7.5 | | ng/L | | 10/12/26 19:32 | 10/15/26 02:51 | 1 |

| *Isotope Dilution* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *87.9* | | *5 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C5 PFPeA* | *97.0* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C5 PFHxA* | *90.6* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C4 PFHpA* | *83.2* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C8 PFOA* | *83.9* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C9 PFNA* | *95.0* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C6 PFDA* | *85.7* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C7 PFUnA* | *82.7* | | *30 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C2 PFDoA* | *81.7* | | *10 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C2 PFTeDA* | *75.2* | | *10 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C6 PFTrDA* | *80.8* | | *20 - 150* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C3 PFBS* | *88.4* | | *40 - 135* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C3 PFHxS* | *88.9* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C8 PFOS* | *88.7* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C8 PFOSA* | *81.9* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *d3-NMeFOSAA* | *89.2* | | *40 - 170* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *d5-NEtFOSAA* | *88.4* | | *25 - 135* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C2 4:2 FTS* | *121* | | *40 - 200* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C2 6:2 FTS* | *108* | | *40 - 200* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C2 8:2 FTS* | *106* | | *40 - 300* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C3 HFPO-DA* | *90.2* | | *40 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *d7-N-MeFOSE-M* | *68.5* | | *10 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *d9-N-EtFOSE-M* | *66.3* | | *10 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *d5-NEtPFOSA* | *65.4* | | *10 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *d3-NMePFOSA* | *65.4* | | *10 - 130* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C3-3:3 FTCA* | *94.0* | | *20 - 150* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |
| *13C3-5:3 FTCA* | *89.1* | | *20 - 150* | *10/12/26 19:32* | *10/15/26 02:51* | *1* |

# Action Limit Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## Client Sample ID: BWS2153-S1-AQ

## Lab Sample ID: 380-240810-1

### 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 Limit | RL | Method | Prep Type |
|---|---|---|---|---|---|---|---|
| **Perfluorooctanoic acid (PFOA)** | **5.4** | | ng/L | **4** | 1.5 | QSM B-24 | Total/NA |
| Perfluorononanoic acid (PFNA) | <1.5 | | ng/L | 10 | 1.5 | QSM B-24 | Total/NA |
| Perfluorohexanesulfonic acid (PFHxS) | 3.2 | | ng/L | 10 | 1.5 | QSM B-24 | Total/NA |
| **Perfluorooctanesulfonic acid (PFOS)** | **16** | | ng/L | **4** | 1.5 | QSM B-24 | Total/NA |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | <1.1 | | ng/L | 10 | 1.1 | QSM B-24 | Total/NA |

# Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24

### Matrix: Water

Prep Type: Total/NA

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | PFBA | PFPeA | 13C5PHA | C4PFHA | C8PFOA | C9PFNA | C6PFDA | 13C7PUA |
| Lab Sample ID | Client Sample ID | (5-130) | (40-130) | (40-130) | (40-130) | (40-130) | (40-130) | (40-130) | (30-130) |
| 320-136708-A-2-B MS | Matrix Spike | 92.0 | 94.3 | 93.2 | 87.1 | 89.4 | 93.2 | 86.8 | 82.3 |
| 320-136708-A-2-C MSD | Matrix Spike Duplicate | 91.1 | 88.9 | 88.9 | 86.6 | 90.5 | 93.6 | 86.9 | 80.7 |
| 380-240810-1 | BWS2153-S1-AQ | 87.9 | 97.0 | 90.6 | 83.2 | 83.9 | 95.0 | 85.7 | 82.7 |
| LCS 320-941822/3-A | Lab Control Sample | 90.3 | 93.1 | 91.4 | 84.1 | 89.2 | 92.6 | 87.7 | 83.5 |
| LLCS 320-941822/2-A | Lab Control Sample | 88.3 | 89.7 | 90.0 | 81.0 | 88.2 | 91.0 | 88.0 | 88.2 |
| MB 320-941822/1-A | Method Blank | 90.6 | 84.3 | 88.5 | 79.6 | 86.1 | 95.0 | 87.6 | 85.1 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | PFDoA | PFTDA | C6PFTrDA | C3PFBS | C3PFHS | C8PFOS | PFOSA | d3NMFOS |
| Lab Sample ID | Client Sample ID | (10-130) | (10-130) | (20-150) | (40-135) | (40-130) | (40-130) | (40-130) | (40-170) |
| 320-136708-A-2-B MS | Matrix Spike | 84.2 | 83.5 | 80.7 | 97.4 | 90.1 | 92.1 | 87.7 | 87.7 |
| 320-136708-A-2-C MSD | Matrix Spike Duplicate | 76.9 | 73.4 | 78.1 | 93.2 | 91.0 | 89.7 | 86.4 | 87.4 |
| 380-240810-1 | BWS2153-S1-AQ | 81.7 | 75.2 | 80.8 | 88.4 | 88.9 | 88.7 | 81.9 | 89.2 |
| LCS 320-941822/3-A | Lab Control Sample | 90.1 | 86.2 | 88.6 | 92.1 | 88.3 | 93.2 | 86.3 | 88.5 |
| LLCS 320-941822/2-A | Lab Control Sample | 91.1 | 85.8 | 92.1 | 89.4 | 87.9 | 95.1 | 85.0 | 92.2 |
| MB 320-941822/1-A | Method Blank | 87.1 | 86.5 | 89.2 | 90.5 | 89.5 | 93.6 | 82.2 | 86.3 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | d5NEFOS | M242FTS | M262FTS | M282FTS | HFPODA | NMFM | NEFM | d5NPFSA |
| Lab Sample ID | Client Sample ID | (25-135) | (40-200) | (40-200) | (40-300) | (40-130) | (10-130) | (10-130) | (10-130) |
| 320-136708-A-2-B MS | Matrix Spike | 87.1 | 94.1 | 97.1 | 91.4 | 95.5 | 74.4 | 73.3 | 70.6 |
| 320-136708-A-2-C MSD | Matrix Spike Duplicate | 79.0 | 93.5 | 99.3 | 88.3 | 92.1 | 74.5 | 68.7 | 64.9 |
| 380-240810-1 | BWS2153-S1-AQ | 88.4 | 121 | 108 | 106 | 90.2 | 68.5 | 66.3 | 65.4 |
| LCS 320-941822/3-A | Lab Control Sample | 84.8 | 97.1 | 99.7 | 84.6 | 87.7 | 81.4 | 77.0 | 69.5 |
| LLCS 320-941822/2-A | Lab Control Sample | 87.0 | 94.9 | 96.9 | 86.4 | 87.1 | 73.8 | 75.3 | 66.7 |
| MB 320-941822/1-A | Method Blank | 84.0 | 93.2 | 96.4 | 90.7 | 83.5 | 77.2 | 78.4 | 68.7 |

| | | Percent Isotope Dilution Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | d3NMFSA | 3-3:3 FTC | 3-5:3 FTC |
| Lab Sample ID | Client Sample ID | (10-130) | (20-150) | (20-150) |
| 320-136708-A-2-B MS | Matrix Spike | 69.0 | 91.1 | 90.6 |
| 320-136708-A-2-C MSD | Matrix Spike Duplicate | 67.6 | 89.0 | 89.6 |
| 380-240810-1 | BWS2153-S1-AQ | 65.4 | 94.0 | 89.1 |
| LCS 320-941822/3-A | Lab Control Sample | 67.7 | 89.7 | 90.9 |
| LLCS 320-941822/2-A | Lab Control Sample | 67.4 | 87.1 | 89.4 |
| MB 320-941822/1-A | Method Blank | 65.3 | 83.0 | 80.3 |

**Surrogate Legend**

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C6PFTrDA = 13C6 PFTrDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS

# Isotope Dilution Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

PFOSA = 13C8 PFOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = 13C2 4:2 FTS
M262FTS = 13C2 6:2 FTS
M282FTS = 13C2 8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA
C3-3:3 FTCA = 13C3-3:3 FTCA
C3-5:3 FTCA = 13C3-5:3 FTCA

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24

**Lab Sample ID: MB 320-941822/1-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | <4.0 | | 4.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoropentanoic acid (PFPeA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorohexanoic acid (PFHxA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoroheptanoic acid (PFHpA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorooctanoic acid (PFOA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorononanoic acid (PFNA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorodecanoic acid (PFDA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoroundecanoic acid (PFUnA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorododecanoic acid (PFDoA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorotridecanoic acid (PFTrDA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorotetradecanoic acid (PFTeDA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorobutanesulfonic acid (PFBS) | <4.0 | | 4.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoropentanesulfonic acid (PFPeS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorohexanesulfonic acid (PFHxS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoroheptanesulfonic acid (PFHpS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorooctanesulfonic acid (PFOS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorononanesulfonic acid (PFNS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorodecanesulfonic acid (PFDS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorododecanesulfonic acid (PFDoS) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <4.0 | | 4.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | <4.0 | | 4.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <4.0 | | 4.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluorooctanesulfonamide (PFOSA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | <10 | | 10 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | <10 | | 10 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | <1.5 | | 1.5 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: MB 320-941822/1-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <2.0 | | 2.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | <4.0 | | 4.0 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | <10 | | 10 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | <10 | | 10 | | ng/L | | 10/12/26 19:32 | 10/14/26 19:35 | 1 |

| *Isotope Dilution* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *13C4 PFBA* | *90.6* | | *5 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C5 PFPeA* | *84.3* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C5 PFHxA* | *88.5* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C4 PFHpA* | *79.6* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C8 PFOA* | *86.1* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C9 PFNA* | *95.0* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C6 PFDA* | *87.6* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C7 PFUnA* | *85.1* | | *30 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C2 PFDoA* | *87.1* | | *10 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C2 PFTeDA* | *86.5* | | *10 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C6 PFTrDA* | *89.2* | | *20 - 150* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C3 PFBS* | *90.5* | | *40 - 135* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C3 PFHxS* | *89.5* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C8 PFOS* | *93.6* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C8 PFOSA* | *82.2* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *d3-NMeFOSAA* | *86.3* | | *40 - 170* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *d5-NEtFOSAA* | *84.0* | | *25 - 135* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C2 4:2 FTS* | *93.2* | | *40 - 200* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C2 6:2 FTS* | *96.4* | | *40 - 200* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C2 8:2 FTS* | *90.7* | | *40 - 300* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C3 HFPO-DA* | *83.5* | | *40 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *d7-N-MeFOSE-M* | *77.2* | | *10 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *d9-N-EtFOSE-M* | *78.4* | | *10 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *d5-NEtPFOSA* | *68.7* | | *10 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *d3-NMePFOSA* | *65.3* | | *10 - 130* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C3-3:3 FTCA* | *83.0* | | *20 - 150* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |
| *13C3-5:3 FTCA* | *80.3* | | *20 - 150* | *10/12/26 19:32* | *10/14/26 19:35* | *1* |

**Lab Sample ID: LCS 320-941822/3-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | | | 80.0 | 88.0 | | ng/L | | 110 | 70 - 140 | | |
| Perfluoropentanoic acid (PFPeA) | | | 40.0 | 40.1 | | ng/L | | 100 | 65 - 135 | | |
| Perfluorohexanoic acid (PFHxA) | | | 40.0 | 40.2 | | ng/L | | 100 | 70 - 145 | | |
| Perfluoroheptanoic acid (PFHpA) | | | 40.0 | 44.1 | | ng/L | | 110 | 70 - 150 | | |
| Perfluorooctanoic acid (PFOA) | | | 40.0 | 44.4 | | ng/L | | 111 | 70 - 150 | | |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: LCS 320-941822/3-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluorononanoic acid (PFNA) | 40.0 | 40.6 | | ng/L | | 101 | 70 - 150 |
| Perfluorodecanoic acid (PFDA) | 40.0 | 40.8 | | ng/L | | 102 | 70 - 140 |
| Perfluoroundecanoic acid (PFUnA) | 40.0 | 43.6 | | ng/L | | 109 | 70 - 145 |
| Perfluorododecanoic acid (PFDoA) | 40.0 | 45.5 | | ng/L | | 114 | 70 - 140 |
| Perfluorotridecanoic acid (PFTrDA) | 40.0 | 43.6 | | ng/L | | 109 | 65 - 140 |
| Perfluorotetradecanoic acid (PFTeDA) | 40.0 | 42.3 | | ng/L | | 106 | 60 - 140 |
| Perfluorobutanesulfonic acid (PFBS) | 71.0 | 79.1 | | ng/L | | 111 | 60 - 145 |
| Perfluoropentanesulfonic acid (PFPeS) | 37.6 | 42.1 | | ng/L | | 112 | 65 - 140 |
| Perfluorohexanesulfonic acid (PFHxS) | 36.5 | 38.0 | | ng/L | | 104 | 65 - 145 |
| Perfluoroheptanesulfonic acid (PFHpS) | 38.2 | 41.6 | | ng/L | | 109 | 70 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | 37.2 | 38.0 | | ng/L | | 102 | 55 - 150 |
| Perfluorononanesulfonic acid (PFNS) | 38.5 | 38.6 | | ng/L | | 100 | 65 - 145 |
| Perfluorodecanesulfonic acid (PFDS) | 38.6 | 38.0 | | ng/L | | 99 | 60 - 145 |
| Perfluorododecanesulfonic acid (PFDoS) | 38.8 | 37.0 | | ng/L | | 95 | 50 - 145 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 75.0 | 80.6 | | ng/L | | 107 | 70 - 145 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 76.2 | 78.3 | | ng/L | | 103 | 65 - 155 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 76.8 | 85.2 | | ng/L | | 111 | 60 - 150 |
| Perfluorooctanesulfonamide (PFOSA) | 40.0 | 42.7 | | ng/L | | 107 | 70 - 145 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | 40.0 | 44.7 | | ng/L | | 112 | 60 - 150 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | 40.0 | 39.8 | | ng/L | | 99 | 65 - 145 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 40.0 | 41.6 | | ng/L | | 104 | 50 - 140 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 40.0 | 41.3 | | ng/L | | 103 | 70 - 145 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | 200 | 206 | | ng/L | | 103 | 70 - 145 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | 200 | 214 | | ng/L | | 107 | 70 - 135 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | 30.0 | 31.2 | | ng/L | | 104 | 70 - 140 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 37.8 | 38.8 | | ng/L | | 103 | 65 - 145 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 40.0 | 43.1 | | ng/L | | 108 | 60 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | 40.0 | 37.7 | | ng/L | | 94 | 50 - 150 |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: LCS 320-941822/3-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluoro-3-methoxypropanoic acid (PFMPA) | 40.0 | 40.7 | | ng/L | | 102 | 55 - 140 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid | 37.4 | 38.0 | | ng/L | | 102 | 70 - 155 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid | 37.8 | 38.5 | | ng/L | | 102 | 55 - 160 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | 35.7 | 39.7 | | ng/L | | 111 | 70 - 140 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | 80.0 | 83.1 | | ng/L | | 104 | 65 - 130 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | 200 | 207 | | ng/L | | 103 | 70 - 135 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | 200 | 199 | | ng/L | | 100 | 50 - 145 |

| *Isotope Dilution* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *90.3* | | *5 - 130* |
| *13C5 PFPeA* | *93.1* | | *40 - 130* |
| *13C5 PFHxA* | *91.4* | | *40 - 130* |
| *13C4 PFHpA* | *84.1* | | *40 - 130* |
| *13C8 PFOA* | *89.2* | | *40 - 130* |
| *13C9 PFNA* | *92.6* | | *40 - 130* |
| *13C6 PFDA* | *87.7* | | *40 - 130* |
| *13C7 PFUnA* | *83.5* | | *30 - 130* |
| *13C2 PFDoA* | *90.1* | | *10 - 130* |
| *13C2 PFTeDA* | *86.2* | | *10 - 130* |
| *13C6 PFTrDA* | *88.6* | | *20 - 150* |
| *13C3 PFBS* | *92.1* | | *40 - 135* |
| *13C3 PFHxS* | *88.3* | | *40 - 130* |
| *13C8 PFOS* | *93.2* | | *40 - 130* |
| *13C8 PFOSA* | *86.3* | | *40 - 130* |
| *d3-NMeFOSAA* | *88.5* | | *40 - 170* |
| *d5-NEtFOSAA* | *84.8* | | *25 - 135* |
| *13C2 4:2 FTS* | *97.1* | | *40 - 200* |
| *13C2 6:2 FTS* | *99.7* | | *40 - 200* |
| *13C2 8:2 FTS* | *84.6* | | *40 - 300* |
| *13C3 HFPO-DA* | *87.7* | | *40 - 130* |
| *d7-N-MeFOSE-M* | *81.4* | | *10 - 130* |
| *d9-N-EtFOSE-M* | *77.0* | | *10 - 130* |
| *d5-NEtPFOSA* | *69.5* | | *10 - 130* |
| *d3-NMePFOSA* | *67.7* | | *10 - 130* |
| *13C3-3:3 FTCA* | *89.7* | | *20 - 150* |
| *13C3-5:3 FTCA* | *90.9* | | *20 - 150* |

**Lab Sample ID: LLCS 320-941822/2-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Spike Added | LLCS Result | LLCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 8.00 | 9.64 | | ng/L | | 120 | 70 - 140 |
| Perfluoropentanoic acid (PFPeA) | 4.00 | 4.26 | | ng/L | | 107 | 65 - 135 |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: LLCS 320-941822/2-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Spike Added | LLCS Result | LLCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Perfluorohexanoic acid (PFHxA) | 4.00 | 3.72 | | ng/L | | 93 | 70 - 145 |
| Perfluoroheptanoic acid (PFHpA) | 4.00 | 4.75 | | ng/L | | 119 | 70 - 150 |
| Perfluorooctanoic acid (PFOA) | 4.00 | 4.82 | | ng/L | | 121 | 70 - 150 |
| Perfluorononanoic acid (PFNA) | 4.00 | 4.12 | | ng/L | | 103 | 70 - 150 |
| Perfluorodecanoic acid (PFDA) | 4.00 | 4.59 | | ng/L | | 115 | 70 - 140 |
| Perfluoroundecanoic acid (PFUnA) | 4.00 | 4.20 | | ng/L | | 105 | 70 - 145 |
| Perfluorododecanoic acid (PFDoA) | 4.00 | 4.92 | | ng/L | | 123 | 70 - 140 |
| Perfluorotridecanoic acid (PFTrDA) | 4.00 | 4.11 | | ng/L | | 103 | 65 - 140 |
| Perfluorotetradecanoic acid (PFTeDA) | 4.00 | 4.33 | | ng/L | | 108 | 60 - 140 |
| Perfluorobutanesulfonic acid (PFBS) | 7.10 | 8.45 | | ng/L | | 119 | 60 - 145 |
| Perfluoropentanesulfonic acid (PFPeS) | 3.76 | 4.03 | | ng/L | | 107 | 65 - 140 |
| Perfluorohexanesulfonic acid (PFHxS) | 3.65 | 4.24 | | ng/L | | 116 | 65 - 145 |
| Perfluoroheptanesulfonic acid (PFHpS) | 3.82 | 4.17 | | ng/L | | 109 | 70 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | 3.72 | 3.78 | | ng/L | | 102 | 55 - 150 |
| Perfluorononanesulfonic acid (PFNS) | 3.85 | 4.02 | | ng/L | | 104 | 65 - 145 |
| Perfluorodecanesulfonic acid (PFDS) | 3.86 | 4.00 | | ng/L | | 104 | 60 - 145 |
| Perfluorododecanesulfonic acid (PFDoS) | 3.88 | 3.72 | | ng/L | | 96 | 50 - 145 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | 7.50 | 8.51 | | ng/L | | 113 | 70 - 145 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 7.62 | 8.37 | | ng/L | | 110 | 65 - 155 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | 7.68 | 8.73 | | ng/L | | 114 | 60 - 150 |
| Perfluorooctanesulfonamide (PFOSA) | 4.00 | 4.40 | | ng/L | | 110 | 70 - 145 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | 4.00 | 4.65 | | ng/L | | 116 | 60 - 150 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | 4.00 | 4.18 | | ng/L | | 105 | 65 - 145 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | 4.00 | 4.34 | | ng/L | | 108 | 50 - 140 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | 4.00 | 3.96 | | ng/L | | 99 | 70 - 145 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | 20.0 | 21.3 | | ng/L | | 106 | 70 - 145 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | 20.0 | 20.8 | | ng/L | | 104 | 70 - 135 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | 3.00 | 3.33 | | ng/L | | 111 | 70 - 140 |
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | 3.78 | 4.18 | | ng/L | | 110 | 65 - 145 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | 4.00 | 4.78 | | ng/L | | 119 | 60 - 150 |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: LLCS 320-941822/2-A**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | | | Spike Added | LLCS Result | LLCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | | | 4.00 | 5.03 | | ng/L | | 126 | 50 - 150 | | |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | | | 4.00 | 4.17 | | ng/L | | 104 | 55 - 140 | | |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid | | | 3.74 | 3.91 | | ng/L | | 105 | 70 - 155 | | |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid | | | 3.78 | 4.08 | | ng/L | | 108 | 55 - 160 | | |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | | | 3.57 | 4.16 | | ng/L | | 117 | 70 - 140 | | |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | | | 8.00 | 8.25 | | ng/L | | 103 | 65 - 130 | | |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | | | 20.0 | 21.0 | | ng/L | | 105 | 70 - 135 | | |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | | | 20.0 | 19.8 | | ng/L | | 99 | 50 - 145 | | |

| *Isotope Dilution* | *LLCS %Recovery* | *LLCS Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *88.3* | | *5 - 130* |
| *13C5 PFPeA* | *89.7* | | *40 - 130* |
| *13C5 PFHxA* | *90.0* | | *40 - 130* |
| *13C4 PFHpA* | *81.0* | | *40 - 130* |
| *13C8 PFOA* | *88.2* | | *40 - 130* |
| *13C9 PFNA* | *91.0* | | *40 - 130* |
| *13C6 PFDA* | *88.0* | | *40 - 130* |
| *13C7 PFUnA* | *88.2* | | *30 - 130* |
| *13C2 PFDoA* | *91.1* | | *10 - 130* |
| *13C2 PFTeDA* | *85.8* | | *10 - 130* |
| *13C6 PFTrDA* | *92.1* | | *20 - 150* |
| *13C3 PFBS* | *89.4* | | *40 - 135* |
| *13C3 PFHxS* | *87.9* | | *40 - 130* |
| *13C8 PFOS* | *95.1* | | *40 - 130* |
| *13C8 PFOSA* | *85.0* | | *40 - 130* |
| *d3-NMeFOSAA* | *92.2* | | *40 - 170* |
| *d5-NEtFOSAA* | *87.0* | | *25 - 135* |
| *13C2 4:2 FTS* | *94.9* | | *40 - 200* |
| *13C2 6:2 FTS* | *96.9* | | *40 - 200* |
| *13C2 8:2 FTS* | *86.4* | | *40 - 300* |
| *13C3 HFPO-DA* | *87.1* | | *40 - 130* |
| *d7-N-MeFOSE-M* | *73.8* | | *10 - 130* |
| *d9-N-EtFOSE-M* | *75.3* | | *10 - 130* |
| *d5-NEtPFOSA* | *66.7* | | *10 - 130* |
| *d3-NMePFOSA* | *67.4* | | *10 - 130* |
| *13C3-3:3 FTCA* | *87.1* | | *20 - 150* |
| *13C3-5:3 FTCA* | *89.4* | | *20 - 150* |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: 320-136708-A-2-B MS**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 61 | | 63.7 | 126 | | ng/L | | 102 | 70 - 140 |
| Perfluoropentanoic acid (PFPeA) | 130 | | 31.8 | 150 | 4 | ng/L | | 61 | 65 - 135 |
| Perfluorohexanoic acid (PFHxA) | 100 | | 31.8 | 130 | | ng/L | | 86 | 70 - 145 |
| Perfluoroheptanoic acid (PFHpA) | 19 | | 31.8 | 51.1 | | ng/L | | 100 | 70 - 150 |
| Perfluorooctanoic acid (PFOA) | 17 | | 31.8 | 53.5 | | ng/L | | 114 | 70 - 150 |
| Perfluorononanoic acid (PFNA) | <1.5 | | 31.8 | 30.6 | | ng/L | | 96 | 70 - 150 |
| Perfluorodecanoic acid (PFDA) | <1.5 | | 31.8 | 32.5 | | ng/L | | 102 | 70 - 140 |
| Perfluoroundecanoic acid (PFUnA) | <1.5 | | 31.8 | 31.9 | | ng/L | | 100 | 70 - 145 |
| Perfluorododecanoic acid (PFDoA) | <1.5 | | 31.8 | 34.8 | | ng/L | | 109 | 70 - 140 |
| Perfluorotridecanoic acid (PFTrDA) | <1.5 | | 31.8 | 34.1 | | ng/L | | 107 | 65 - 140 |
| Perfluorotetradecanoic acid (PFTeDA) | <1.5 | | 31.8 | 31.3 | | ng/L | | 98 | 60 - 140 |
| Perfluorobutanesulfonic acid (PFBS) | 15 | | 56.6 | 71.3 | | ng/L | | 100 | 60 - 145 |
| Perfluoropentanesulfonic acid (PFPeS) | 6.4 | | 29.9 | 38.3 | | ng/L | | 107 | 65 - 140 |
| Perfluorohexanesulfonic acid (PFHxS) | 42 | | 29.0 | 72.0 | | ng/L | | 105 | 65 - 145 |
| Perfluoroheptanesulfonic acid (PFHpS) | <1.5 | | 30.4 | 33.1 | | ng/L | | 107 | 70 - 150 |
| Perfluorooctanesulfonic acid (PFOS) | 13 | | 29.6 | 42.5 | | ng/L | | 100 | 55 - 150 |
| Perfluorononanesulfonic acid (PFNS) | <1.5 | | 30.6 | 29.7 | | ng/L | | 97 | 65 - 145 |
| Perfluorodecanesulfonic acid (PFDS) | <1.5 | | 30.7 | 30.2 | | ng/L | | 98 | 60 - 145 |
| Perfluorododecanesulfonic acid (PFDoS) | <1.5 | | 30.9 | 29.2 | | ng/L | | 95 | 50 - 145 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.9 | | 59.7 | 67.9 | | ng/L | | 114 | 70 - 145 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 11 | | 60.6 | 75.7 | | ng/L | | 107 | 65 - 155 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.9 | | 61.1 | 64.6 | | ng/L | | 106 | 60 - 150 |
| Perfluorooctanesulfonamide (PFOSA) | 2.1 | | 31.8 | 34.2 | | ng/L | | 101 | 70 - 145 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | <1.5 | | 31.8 | 32.9 | | ng/L | | 103 | 60 - 150 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | <1.5 | | 31.8 | 30.1 | | ng/L | | 95 | 65 - 145 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <1.5 | | 31.8 | 31.8 | | ng/L | | 100 | 50 - 140 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <1.5 | | 31.8 | 28.8 | | ng/L | | 90 | 70 - 145 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | <7.3 | | 159 | 163 | | ng/L | | 102 | 70 - 145 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | <7.3 | | 159 | 164 | | ng/L | | 103 | 70 - 135 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | <1.1 | | 23.9 | 22.4 | | ng/L | | 94 | 70 - 140 |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: 320-136708-A-2-B MS**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <1.5 | | 30.1 | 28.7 | | ng/L | | 95 | 65 - 145 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <1.5 | | 31.8 | 33.6 | | ng/L | | 106 | 60 - 150 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <1.5 | | 31.8 | 30.2 | | ng/L | | 95 | 50 - 150 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <1.5 | | 31.8 | 31.8 | | ng/L | | 100 | 55 - 140 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid | <1.5 | | 29.7 | 30.2 | | ng/L | | 102 | 70 - 155 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid | <1.5 | | 30.1 | 29.2 | | ng/L | | 97 | 55 - 160 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <1.5 | | 28.4 | 31.3 | | ng/L | | 110 | 70 - 140 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | <2.9 | | 63.7 | 63.4 | | ng/L | | 99 | 65 - 130 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | <7.3 | | 159 | 166 | | ng/L | | 105 | 70 - 135 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | <7.3 | | 159 | 156 | | ng/L | | 98 | 50 - 145 |

| *Isotope Dilution* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *92.0* | | *5 - 130* |
| *13C5 PFPeA* | *94.3* | | *40 - 130* |
| *13C5 PFHxA* | *93.2* | | *40 - 130* |
| *13C4 PFHpA* | *87.1* | | *40 - 130* |
| *13C8 PFOA* | *89.4* | | *40 - 130* |
| *13C9 PFNA* | *93.2* | | *40 - 130* |
| *13C6 PFDA* | *86.8* | | *40 - 130* |
| *13C7 PFUnA* | *82.3* | | *30 - 130* |
| *13C2 PFDoA* | *84.2* | | *10 - 130* |
| *13C2 PFTeDA* | *83.5* | | *10 - 130* |
| *13C6 PFTrDA* | *80.7* | | *20 - 150* |
| *13C3 PFBS* | *97.4* | | *40 - 135* |
| *13C3 PFHxS* | *90.1* | | *40 - 130* |
| *13C8 PFOS* | *92.1* | | *40 - 130* |
| *13C8 PFOSA* | *87.7* | | *40 - 130* |
| *d3-NMeFOSAA* | *87.7* | | *40 - 170* |
| *d5-NEtFOSAA* | *87.1* | | *25 - 135* |
| *13C2 4:2 FTS* | *94.1* | | *40 - 200* |
| *13C2 6:2 FTS* | *97.1* | | *40 - 200* |
| *13C2 8:2 FTS* | *91.4* | | *40 - 300* |
| *13C3 HFPO-DA* | *95.5* | | *40 - 130* |
| *d7-N-MeFOSE-M* | *74.4* | | *10 - 130* |
| *d9-N-EtFOSE-M* | *73.3* | | *10 - 130* |
| *d5-NEtPFOSA* | *70.6* | | *10 - 130* |
| *d3-NMePFOSA* | *69.0* | | *10 - 130* |
| *13C3-3:3 FTCA* | *91.1* | | *20 - 150* |
| *13C3-5:3 FTCA* | *90.6* | | *20 - 150* |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: 320-136708-A-2-C MSD**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) | 61 | | 58.6 | 123 | | ng/L | | 106 | 70 - 140 | 2 | 30 |
| Perfluoropentanoic acid (PFPeA) | 130 | | 29.3 | 158 | E 4 | ng/L | | 95 | 65 - 135 | 5 | 30 |
| Perfluorohexanoic acid (PFHxA) | 100 | | 29.3 | 134 | | ng/L | | 109 | 70 - 145 | 3 | 30 |
| Perfluoroheptanoic acid (PFHpA) | 19 | | 29.3 | 50.1 | | ng/L | | 105 | 70 - 150 | 2 | 30 |
| Perfluorooctanoic acid (PFOA) | 17 | | 29.3 | 48.6 | | ng/L | | 108 | 70 - 150 | 10 | 30 |
| Perfluorononanoic acid (PFNA) | <1.5 | | 29.3 | 28.1 | | ng/L | | 96 | 70 - 150 | 8 | 30 |
| Perfluorodecanoic acid (PFDA) | <1.5 | | 29.3 | 29.7 | | ng/L | | 101 | 70 - 140 | 9 | 30 |
| Perfluoroundecanoic acid (PFUnA) | <1.5 | | 29.3 | 28.7 | | ng/L | | 98 | 70 - 145 | 11 | 30 |
| Perfluorododecanoic acid (PFDoA) | <1.5 | | 29.3 | 31.7 | | ng/L | | 108 | 70 - 140 | 9 | 30 |
| Perfluorotridecanoic acid (PFTrDA) | <1.5 | | 29.3 | 29.4 | | ng/L | | 100 | 65 - 140 | 15 | 30 |
| Perfluorotetradecanoic acid (PFTeDA) | <1.5 | | 29.3 | 28.6 | | ng/L | | 98 | 60 - 140 | 9 | 30 |
| Perfluorobutanesulfonic acid (PFBS) | 15 | | 52.0 | 68.3 | | ng/L | | 103 | 60 - 145 | 4 | 30 |
| Perfluoropentanesulfonic acid (PFPeS) | 6.4 | | 27.5 | 34.9 | | ng/L | | 104 | 65 - 140 | 9 | 30 |
| Perfluorohexanesulfonic acid (PFHxS) | 42 | | 26.7 | 68.5 | | ng/L | | 101 | 65 - 145 | 5 | 30 |
| Perfluoroheptanesulfonic acid (PFHpS) | <1.5 | | 27.9 | 30.1 | | ng/L | | 106 | 70 - 150 | 10 | 30 |
| Perfluorooctanesulfonic acid (PFOS) | 13 | | 27.2 | 40.6 | | ng/L | | 102 | 55 - 150 | 5 | 30 |
| Perfluorononanesulfonic acid (PFNS) | <1.5 | | 28.2 | 27.2 | | ng/L | | 96 | 65 - 145 | 9 | 30 |
| Perfluorodecanesulfonic acid (PFDS) | <1.5 | | 28.2 | 25.3 | | ng/L | | 90 | 60 - 145 | 18 | 30 |
| Perfluorododecanesulfonic acid (PFDoS) | <1.5 | | 28.4 | 24.0 | | ng/L | | 85 | 50 - 145 | 20 | 30 |
| 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS) | <2.9 | | 54.9 | 60.1 | | ng/L | | 109 | 70 - 145 | 12 | 30 |
| 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) | 11 | | 55.8 | 65.6 | | ng/L | | 98 | 65 - 155 | 14 | 30 |
| 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) | <2.9 | | 56.2 | 59.1 | | ng/L | | 105 | 60 - 150 | 9 | 30 |
| Perfluorooctanesulfonamide (PFOSA) | 2.1 | | 29.3 | 31.3 | | ng/L | | 100 | 70 - 145 | 9 | 30 |
| N-methylperfluorooctane sulfonamide (NMeFOSA) | <1.5 | | 29.3 | 30.7 | | ng/L | | 105 | 60 - 150 | 7 | 30 |
| N-ethylperfluorooctane sulfonamide (NEtFOSA) | <1.5 | | 29.3 | 27.9 | | ng/L | | 95 | 65 - 145 | 8 | 30 |
| N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) | <1.5 | | 29.3 | 28.3 | | ng/L | | 97 | 50 - 140 | 12 | 30 |
| N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) | <1.5 | | 29.3 | 27.3 | | ng/L | | 93 | 70 - 145 | 5 | 30 |
| N-methylperfluorooctane sulfonamidoethanol (NMeFOSE) | <7.3 | | 146 | 142 | | ng/L | | 97 | 70 - 145 | 14 | 30 |
| N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE) | <7.3 | | 146 | 142 | | ng/L | | 97 | 70 - 135 | 14 | 30 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | <1.1 | | 22.0 | 20.5 | | ng/L | | 93 | 70 - 140 | 9 | 30 |

## Method: QSM B-24 - PFAS for QSM 6.0, Table B-24 (Continued)

**Lab Sample ID: 320-136708-A-2-C MSD**
**Matrix: Water**
**Analysis Batch: 942347**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 941822**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,8-Dioxa-3H-perfluorononanoic acid (ADONA) | <1.5 | | 27.7 | 26.0 | | ng/L | | 94 | 65 - 145 | 10 | 30 |
| Perfluoro-4-methoxybutanoic acid (PFMBA) | <1.5 | | 29.3 | 32.5 | | ng/L | | 111 | 60 - 150 | 3 | 30 |
| Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) | <1.5 | | 29.3 | 26.5 | | ng/L | | 91 | 50 - 150 | 13 | 30 |
| Perfluoro-3-methoxypropanoic acid (PFMPA) | <1.5 | | 29.3 | 30.4 | | ng/L | | 104 | 55 - 140 | 5 | 30 |
| 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid | <1.5 | | 27.4 | 27.9 | | ng/L | | 102 | 70 - 155 | 8 | 30 |
| 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid | <1.5 | | 27.6 | 25.3 | | ng/L | | 92 | 55 - 160 | 14 | 30 |
| Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA) | <1.5 | | 26.1 | 28.2 | | ng/L | | 108 | 70 - 140 | 10 | 30 |
| 3-Perfluoropropylpropanoic acid (3:3 FTCA) | <2.9 | | 58.6 | 59.6 | | ng/L | | 102 | 65 - 130 | 6 | 30 |
| 3-Perfluoropentylpropanoic acid (5:3 FTCA) | <7.3 | | 146 | 149 | | ng/L | | 102 | 70 - 135 | 11 | 30 |
| 3-Perfluoroheptylpropanoic acid (7:3 FTCA) | <7.3 | | 146 | 143 | | ng/L | | 98 | 50 - 145 | 9 | 30 |

| *Isotope Dilution* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *13C4 PFBA* | *91.1* | | *5 - 130* |
| *13C5 PFPeA* | *88.9* | | *40 - 130* |
| *13C5 PFHxA* | *88.9* | | *40 - 130* |
| *13C4 PFHpA* | *86.6* | | *40 - 130* |
| *13C8 PFOA* | *90.5* | | *40 - 130* |
| *13C9 PFNA* | *93.6* | | *40 - 130* |
| *13C6 PFDA* | *86.9* | | *40 - 130* |
| *13C7 PFUnA* | *80.7* | | *30 - 130* |
| *13C2 PFDoA* | *76.9* | | *10 - 130* |
| *13C2 PFTeDA* | *73.4* | | *10 - 130* |
| *13C6 PFTrDA* | *78.1* | | *20 - 150* |
| *13C3 PFBS* | *93.2* | | *40 - 135* |
| *13C3 PFHxS* | *91.0* | | *40 - 130* |
| *13C8 PFOS* | *89.7* | | *40 - 130* |
| *13C8 PFOSA* | *86.4* | | *40 - 130* |
| *d3-NMeFOSAA* | *87.4* | | *40 - 170* |
| *d5-NEtFOSAA* | *79.0* | | *25 - 135* |
| *13C2 4:2 FTS* | *93.5* | | *40 - 200* |
| *13C2 6:2 FTS* | *99.3* | | *40 - 200* |
| *13C2 8:2 FTS* | *88.3* | | *40 - 300* |
| *13C3 HFPO-DA* | *92.1* | | *40 - 130* |
| *d7-N-MeFOSE-M* | *74.5* | | *10 - 130* |
| *d9-N-EtFOSE-M* | *68.7* | | *10 - 130* |
| *d5-NEtPFOSA* | *64.9* | | *10 - 130* |
| *d3-NMePFOSA* | *67.6* | | *10 - 130* |
| *13C3-3:3 FTCA* | *89.0* | | *20 - 150* |
| *13C3-5:3 FTCA* | *89.6* | | *20 - 150* |

# QC Association Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## LCMS

### Prep Batch: 941822

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-240810-1 | BWS2153-S1-AQ | Total/NA | Water | 1633 | |
| MB 320-941822/1-A | Method Blank | Total/NA | Water | 1633 | |
| LCS 320-941822/3-A | Lab Control Sample | Total/NA | Water | 1633 | |
| LLCS 320-941822/2-A | Lab Control Sample | Total/NA | Water | 1633 | |
| 320-136708-A-2-B MS | Matrix Spike | Total/NA | Water | 1633 | |
| 320-136708-A-2-C MSD | Matrix Spike Duplicate | Total/NA | Water | 1633 | |

### Analysis Batch: 942347

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 380-240810-1 | BWS2153-S1-AQ | Total/NA | Water | QSM B-24 | 941822 |
| MB 320-941822/1-A | Method Blank | Total/NA | Water | QSM B-24 | 941822 |
| LCS 320-941822/3-A | Lab Control Sample | Total/NA | Water | QSM B-24 | 941822 |
| LLCS 320-941822/2-A | Lab Control Sample | Total/NA | Water | QSM B-24 | 941822 |
| 320-136708-A-2-B MS | Matrix Spike | Total/NA | Water | QSM B-24 | 941822 |
| 320-136708-A-2-C MSD | Matrix Spike Duplicate | Total/NA | Water | QSM B-24 | 941822 |

# Lab Chronicle

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## Client Sample ID: BWS2153-S1-AQ

**Date Collected: 10/07/26 09:15**
**Date Received: 10/08/26 09:10**

## Lab Sample ID: 380-240810-1

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Analyst | Lab | Prepared or Analyzed |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 1633 | | | 941822 | H2V | EET SAC | 10/12/26 19:32 |
| Total/NA | Analysis | QSM B-24 | | 1 | 942347 | N1K | EET SAC | 10/15/26 02:51 |

**Laboratory References:**

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Accreditation/Certification Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

## Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Alaska | State | CA00044 | 06-30-27 |
| Alaska (UST) | State | 17-020 | 02-22-27 |
| ANAB | Dept. of Defense ELAP | L2468 | 01-20-27 |
| ANAB | Dept. of Energy | L2468.01 | 01-20-27 |
| ANAB | ISO/IEC 17025 | L2468.03 | 01-20-27 |
| Arizona | State | AZ0708 | 08-11-27 |
| Arkansas DEQ | State | 88-0691 | 05-17-27 |
| California | State | 2897 | 01-31-28 |
| Colorado | State | CA00044 | 08-31-27 |
| Florida | NELAP | E87570 | 06-30-27 |
| Georgia | State | 4040 | 01-29-27 |
| Illinois | NELAP | 200060 | 03-31-27 |
| Kansas | NELAP | E-10375 | 10-31-26 |
| Louisiana (All) | NELAP | 01944 | 06-30-27 |
| Maine | State | CA00004 | 04-14-28 |
| Massachusetts | State | M-CA044 | 07-01-27 |
| Minnesota | NELAP | 006-999-474 | 12-31-26 |
| Nevada | State | CA00044 | 07-31-27 |
| New Jersey | NELAP | CA005 | 06-30-27 |
| New York | NELAP | 11666 | 04-01-27 |
| Ohio | State | 41252 | 01-29-27 |
| Oregon | NELAP | 4040 | 01-29-27 |
| Texas | NELAP | T104704399-23-17 | 05-31-27 |
| US Fish & Wildlife | US Federal Programs | A22139 | 04-30-27 |
| USDA | US Federal Programs | 525-23-59-76739 | 03-01-27 |
| Utah | NELAP | CA000442026-20 | 02-28-27 |
| Virginia | NELAP | 460278 | 09-30-27 |
| Washington | State | C581 | 05-06-27 |
| West Virginia (DW) | State | 9930C | 01-31-27 |
| West Virginia DEP | State | 422 | 07-31-27 |
| Wisconsin | State | 998204680 | 08-31-27 |
| Wyoming | State Program | 8TMS-L | 01-28-19 * |

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

# Method Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| QSM B-24 | PFAS for QSM 6.0, Table B-24 | DoD 6.0 | EET SAC |
| 1633 | Solid-Phase Extraction (SPE) | EPA | EET SAC |

**Protocol References:**

DoD 6.0 = Department of Defense Quality Systems Manual V6.0

EPA = US Environmental Protection Agency

**Laboratory References:**

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Sample Summary

Client: City & County of Honolulu
Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-240810-1
SDG: Site S1 PFAS 1633

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Sample Origin |
|---|---|---|---|---|---|
| 380-240810-1 | BWS2153-S1-AQ | Water | 10/07/26 09:15 | 10/08/26 09:10 | Hawaii |

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

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler | Lab PM | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr Erwin Kawata | Phone: 858-205-0730 | E-Mail: Maria Lopez@et.eurofinsus com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: City & County of Honolulu | PWSID: | Analysis Requested | | Job #: |
| Address: 630 South Beretania Street | Due Date Requested: | | | Preservation Codes: A- HCL N- None |
| City: Honolulu | TAT Requested (days): Standard | | | |
| State, Zip: HI, 96843 | Compliance Project: Δ Yes X No | | | |
| Phone: 808-748-5066 | PO #: | | | |
| Email: ekawata@hbws.org | WO #: | | | |
| Project Name: INTERA - Red-Hill-Incident | Project #: 38000861 | | | Other: |
| Site: S1 | SSOW#: | | | |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air, DW=Drinking Water) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 1633_DOD6 - EPA Method 1633 Std List | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | N | | |
| BWS2153-S1-AQ | 10/7/26 | 9:15 | G | Water | N | N | 2 | 2 | BILL TO POMONA EEA |

380-240810 COC

*Possible Hazard Identification*
☐ X 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 ☐ X Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements

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

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| | 10/7/26 14 00 | INTERA, INC | | 10/8/26 0916 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact. | Custody Seal No. | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|
| Δ Yes Δ No | Seal | 3.4 |

Ver 05/06/2024

Eurofins Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone. 626-386-1100

# Chain of Custody Record

eurofins | Environment Testing

| Client Information (Sub Contract Lab) | Sampler: N/A | Lab PM: Lopez, Maria | Carrier Tracking No(s): N/A | COC No: 380-390910.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: N/A | E-Mail: Maria.Lopez@et.eurofinsus.com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing Northern Ca | | Accreditations Required (See note): State - Hawaii | | Job #: 380-240810-1 |
| Address: 880 Riverside Parkway, , | Due Date Requested: 10/19/2026 | | | Preservation Codes: - |
| City: West Sacramento | TAT Requested (days): N/A | | | |
| State, Zip: CA, 95605 | | | | |
| Phone: 916-373-5600(Tel) 916-372-1059(Fax) | PO #: N/A | | | |
| Email: N/A | WO #: N/A | | | |
| Project Name: INTERA - Red-Hill-Incident | Project #: 38000861 | | | |
| Site: Honolulu BWS Sites | SSOW#: N/A | | | Other: N/A |

Analysis Requested

| Sample Identification - Client ID (Lab ID) | 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) | 1633_DOD6/1633_SPE_125(MOD) EPA Method 1633 Sld List | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| BWS2153-S1-AQ (380-240810-1) | 10/7/26 | 09:15 Hawaiian | G | Water | | | X | 2 | |

Note: Since laboratory accreditations are subject to change, Eurofins Drinking Water and Wastewater West, LLC places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Drinking Water and Wastewater West, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Drinking Water and Wastewater West, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Drinking Water and Wastewater West, LLC.

| *Possible Hazard Identification* | *Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)* |
|---|---|
| *Unconfirmed* | ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months* |
| Deliverable Requested. I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 | Special Instructions/QC Requirements. |

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

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| | | | | 10/8/26 0910 | EET |
| 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. Seal | Cooler Temperature(s) °C and Other Remarks: 3.9°C |
|---|---|---|

Ver 08/18/2026



10/19/2026

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

# Chain of Custody Record

eurofins | Environment Testing

| Client Information | Sampler: H Bentley (808) 321-0683 | Lab PM: Lopez Maria | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr Erwin Kawata | Phone: 858-205-0730 | E-Mail: Maria.Lopez@et.eurofinsus com | State of Origin: Hawaii | Page: Page 1 of 1 |
| Company: City & County of Honolulu | PWSID: | | | Job #: |
| Address: 630 South Beretania Street | Due Date Requested: | | | |
| City: Honolulu | TAT Requested (days): Standard | | | |
| State, Zip: HI 96843 | Compliance Project: Δ Yes X No | | | |
| Phone: 808-748-5066 | PO #: | | | |
| Email: ekawata@hbws.org | WO #: | | | |
| Project Name: INTERA - Red-Hill-Incident | Project #: 38000861 | | | |
| Site: S1 | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**
A - HCL
N - None
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 DW=Drinking Water) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 1633_DOD6 - EPA Method 1633 Std List | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | X | X | N | X | |
| BWS2153-S1-AQ | 10/7/26 | 9 15 | G | Water | N | N | 2 | 2 | BILL TO POMONA EEA |

380-240810 Chain of Custody

***Possible Hazard Identification***
☐ X 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 ☐ X Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

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

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| 1 | | 10/7/26 14 00 | INTERA, INC | | 10/8/26 0910 | WETSTONE |
| 2 | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| 3 | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: ~~Δ Yes~~ Δ No | Custody Seal No: Seal | Cooler Temperature(s) °C and Other Remarks: 3.4 |
|---|---|---|

Ver: 05/06/2024

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-240810-1
SDG Number: Site S1 PFAS 1633

**Login Number: 240810**
**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 | |
| ClO4 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 | |

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-240810-1
SDG Number: Site S1 PFAS 1633

**Login Number: 240810**
**List Number: 2**
**Creator: Helie, Courtney M**

**List Source: Eurofins Sacramento**
**List Creation: 10/09/26 05:49 PM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | Seal present with no number. |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 3.4 |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | 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 | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| 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 | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |