

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

HRS-340E - RED-HILL - INTERA

JOB NUMBER

380-81191-1

Eurofins Eaton Analytical Pomona

Job Notes

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

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

Compliance Statement

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

Authorization



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Definitions/Glossary

Client: City & County of Honolulu
Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Case Narrative

Client: City & County of Honolulu
Project: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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Job Narrative 380-81191-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 2/1/2024 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°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: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-81191-1

No Detections.

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-81191-2

No Detections.

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

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-81191-1

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 17:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	113		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C6 PFDA	106		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C5 PFHxA	111		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C4 PFHpA	118		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C8 PFOA	109		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C9 PFNA	105		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C7 PFUnA	116		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C2 PFDoA	113		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C4 PFBA	109		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C5 PFPeA	126		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C3 PFBS	117		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C3 PFHxS	113		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C8 PFOS	110		50 - 200	02/04/24 11:29	02/05/24 17:02	1

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Client Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-81191-1

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	130		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C2-6:2-FTS	129		50 - 200	02/04/24 11:29	02/05/24 17:02	1
13C2-8:2-FTS	120		50 - 200	02/04/24 11:29	02/05/24 17:02	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		02/02/24 09:33	02/03/24 02:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:36	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	110		70 - 130	02/02/24 09:33	02/03/24 02:36	1		
13C2 PFHxA	113		70 - 130	02/02/24 09:33	02/03/24 02:36	1		
13C2 PFDA	109		70 - 130	02/02/24 09:33	02/03/24 02:36	1		
13C3-GenX	100		70 - 130	02/02/24 09:33	02/03/24 02:36	1		

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-81191-2

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1

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Client Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-81191-2

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		02/04/24 11:29	02/05/24 18:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	103		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C6 PFDA	110		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C5 PFHxA	109		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C4 PFHpA	121		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C8 PFOA	110		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C9 PFNA	104		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C7 PFUnA	113		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C2 PFDoA	106		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C4 PFBA	108		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C5 PFPeA	104		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C3 PFBS	112		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C3 PFHxS	111		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C8 PFOS	111		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C2-4:2-FTS	113		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C2-6:2-FTS	120		50 - 200	02/04/24 11:29	02/05/24 18:19	1
13C2-8:2-FTS	112		50 - 200	02/04/24 11:29	02/05/24 18:19	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		02/02/24 09:33	02/03/24 02:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1

Eurofins Eaton Analytical Pomona

Client Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-81191-2

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		02/02/24 09:33	02/03/24 02:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	115		70 - 130			02/02/24 09:33	02/03/24 02:46	1
13C2 PFHxA	109		70 - 130			02/02/24 09:33	02/03/24 02:46	1
13C2 PFDA	105		70 - 130			02/02/24 09:33	02/03/24 02:46	1
13C3-GenX	101		70 - 130			02/02/24 09:33	02/03/24 02:46	1

Surrogate Summary

Client: City & County of Honolulu
Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-81191-1	BWS2253-J1-AQ	110	113	109	100
380-81191-2	BWS2253-J1-FB	115	109	105	101
380-81242-B-2-A MS	Matrix Spike	99	105	100	94
380-81242-C-2-A MSD	Matrix Spike Duplicate	111	109	103	99
LCS 380-74565/23-A	Lab Control Sample	106	102	101	95
MBL 380-74565/21-A	Method Blank	97	99	99	89
MRL 380-74565/22-A	Lab Control Sample	103	95	98	88

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

Isotope Dilution Summary

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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)
380-81191-1	BWS2253-J1-AQ	113	106	111	118	109	105	116	113
380-81191-1 MS	BWS2253-J1-AQ	125	109	107	112	111	105	116	113
380-81191-1 MSD	BWS2253-J1-AQ	118	118	110	114	116	114	121	118
380-81191-2	BWS2253-J1-FB	103	110	109	121	110	104	113	106
LCS 380-74819/23-A	Lab Control Sample	112	108	107	113	107	103	113	111
MBL 380-74819/21-A	Method Blank	100	108	108	120	111	104	113	110
MRL 380-74819/22-A	Lab Control Sample	110	108	112	122	113	106	114	111

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-81191-1	BWS2253-J1-AQ	109	126	117	113	110	130	129	120
380-81191-1 MS	BWS2253-J1-AQ	109	127	113	114	112	124	136	125
380-81191-1 MSD	BWS2253-J1-AQ	114	134	112	112	107	126	131	122
380-81191-2	BWS2253-J1-FB	108	104	112	111	111	113	120	112
LCS 380-74819/23-A	Lab Control Sample	112	114	108	112	106	110	122	116
MBL 380-74819/21-A	Method Blank	111	108	116	115	110	114	125	115
MRL 380-74819/22-A	Lab Control Sample	111	109	114	114	109	118	123	116

Surrogate Legend

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

QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: MBL 380-74819/21-A
Matrix: Water
Analysis Batch: 74944

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74819

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		02/04/24 11:29	02/05/24 16:33	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	100		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C6 PFDA	108		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C5 PFHxA	108		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C4 PFHpA	120		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C8 PFOA	111		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C9 PFNA	104		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C7 PFUnA	113		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C2 PFDoA	110		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C4 PFBA	111		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C5 PFPeA	108		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C3 PFBS	116		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C3 PFHxS	115		50 - 200	02/04/24 11:29	02/05/24 16:33	1

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: MBL 380-74819/21-A
Matrix: Water
Analysis Batch: 74944

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74819

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	110		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C2-4:2-FTS	114		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C2-6:2-FTS	125		50 - 200	02/04/24 11:29	02/05/24 16:33	1
13C2-8:2-FTS	115		50 - 200	02/04/24 11:29	02/05/24 16:33	1

Lab Sample ID: LCS 380-74819/23-A
Matrix: Water
Analysis Batch: 74944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74819

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	117		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	118		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	118		ng/L		98	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	123		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	119		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	120	118		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	120	119		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	122		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	120		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	120	120		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	120	120		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	119		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	120	123		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	120	122		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	128		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	123		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	120		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	126		ng/L		105	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	122		ng/L		101	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	125		ng/L		104	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	123		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	120	124		ng/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	128		ng/L		106	70 - 130

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: LCS 380-74819/23-A
Matrix: Water
Analysis Batch: 74944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74819

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	109		ng/L		91	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	112		50 - 200				
13C6 PFDA	108		50 - 200				
13C5 PFHxA	107		50 - 200				
13C4 PFHpA	113		50 - 200				
13C8 PFOA	107		50 - 200				
13C9 PFNA	103		50 - 200				
13C7 PFUnA	113		50 - 200				
13C2 PFDoA	111		50 - 200				
13C4 PFBA	112		50 - 200				
13C5 PFPeA	114		50 - 200				
13C3 PFBS	108		50 - 200				
13C3 PFHxS	112		50 - 200				
13C8 PFOS	106		50 - 200				
13C2-4:2-FTS	110		50 - 200				
13C2-6:2-FTS	122		50 - 200				
13C2-8:2-FTS	116		50 - 200				

Lab Sample ID: MRL 380-74819/22-A
Matrix: Water
Analysis Batch: 74944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74819

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.93	J	ng/L		96	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.85	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.90	J	ng/L		95	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.82	J	ng/L		91	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.06	J	ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.03	J	ng/L		102	50 - 150

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: MRL 380-74819/22-A
Matrix: Water
Analysis Batch: 74944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74819

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.12	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.16	J	ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.08	J	ng/L		104	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.79	J	ng/L		89	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.96	J	ng/L		98	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	110		50 - 200
13C6 PFDA	108		50 - 200
13C5 PFHxA	112		50 - 200
13C4 PFHpA	122		50 - 200
13C8 PFOA	113		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	114		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	111		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	114		50 - 200
13C3 PFHxS	114		50 - 200
13C8 PFOS	109		50 - 200
13C2-4:2-FTS	118		50 - 200
13C2-6:2-FTS	123		50 - 200
13C2-8:2-FTS	116		50 - 200

Lab Sample ID: 380-81191-1 MS
Matrix: Water
Analysis Batch: 74944

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 74819

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	114		ng/L		94	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	114		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	122		ng/L		101	70 - 130

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: 380-81191-1 MS

Client Sample ID: BWS2253-J1-AQ

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 74944

Prep Batch: 74819

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		120	117		ng/L		97	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	120		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	123		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	115		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	125		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	119		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	122		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	118		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	120		ng/L		99	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		120	122		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	117		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	123		ng/L		102	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	120		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	122		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	120		ng/L		99	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	119		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	116		ng/L		96	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	142		ng/L		118	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	130		ng/L		108	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		120	121		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	121		ng/L		101	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	114		ng/L		95	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	125		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	107		50 - 200
13C4 PFHpA	112		50 - 200
13C8 PFOA	111		50 - 200
13C9 PFNA	105		50 - 200
13C7 PFUnA	116		50 - 200
13C2 PFDoA	113		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	127		50 - 200
13C3 PFBS	113		50 - 200
13C3 PFHxS	114		50 - 200
13C8 PFOS	112		50 - 200

QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: 380-81191-1 MS
Matrix: Water
Analysis Batch: 74944

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 74819

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	124		50 - 200
13C2-6:2-FTS	136		50 - 200
13C2-8:2-FTS	125		50 - 200

Lab Sample ID: 380-81191-1 MSD
Matrix: Water
Analysis Batch: 74944

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 74819

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	114		ng/L		95	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	121		ng/L		101	70 - 130	6	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	125		ng/L		104	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	121		ng/L		100	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	123		ng/L		102	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		120	123		ng/L		102	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	120		ng/L		99	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	129		ng/L		107	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		120	120		ng/L		100	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	128		ng/L		106	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		120	116		ng/L		97	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		120	124		ng/L		103	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	<2.0		120	121		ng/L		101	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	123		ng/L		102	70 - 130	5	30
Perfluorobutanoic acid (PFBA)	<2.0		120	125		ng/L		104	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	126		ng/L		104	70 - 130	4	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	130		ng/L		108	70 - 130	7	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	122		ng/L		102	70 - 130	2	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	137		ng/L		114	70 - 130	14	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	115		ng/L		96	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	140		ng/L		116	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	129		ng/L		107	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		120	122		ng/L		102	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	127		ng/L		106	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	117		ng/L		97	70 - 130	2	30

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	118		50 - 200
13C6 PFDA	118		50 - 200
13C5 PFHxA	110		50 - 200
13C4 PFHpA	114		50 - 200
13C8 PFOA	116		50 - 200
13C9 PFNA	114		50 - 200
13C7 PFUnA	121		50 - 200
13C2 PFDoA	118		50 - 200
13C4 PFBA	114		50 - 200
13C5 PFPeA	134		50 - 200
13C3 PFBS	112		50 - 200
13C3 PFHxS	112		50 - 200
13C8 PFOS	107		50 - 200
13C2-4:2-FTS	126		50 - 200
13C2-6:2-FTS	131		50 - 200
13C2-8:2-FTS	122		50 - 200

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

Lab Sample ID: MBL 380-74565/21-A
 Matrix: Water
 Analysis Batch: 74667

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 74565

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		02/02/24 09:33	02/03/24 01:36	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	97		70 - 130			02/02/24 09:33	02/03/24 01:36	1
13C2 PFHxA	99		70 - 130			02/02/24 09:33	02/03/24 01:36	1
13C2 PFDA	99		70 - 130			02/02/24 09:33	02/03/24 01:36	1

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: MBL 380-74565/21-A
Matrix: Water
Analysis Batch: 74667

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74565

<i>Surrogate</i>	<i>MBL</i>	<i>MBL</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	89	Qualifier	70 - 130	02/02/24 09:33	02/03/24 01:36	1

Lab Sample ID: LCS 380-74565/23-A
Matrix: Water
Analysis Batch: 74667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74565

<i>Analyte</i>	<i>Spike</i>	<i>LCS</i>	<i>LCS</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	<i>Limits</i>
	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>					
Hexafluoropropylene Oxide	25.1	23.6		ng/L		94		70 - 130
Dimer Acid (HFPO-DA/GenX)								
Perfluorooctanesulfonic acid (PFOS)	25.1	26.0		ng/L		104		70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.2		ng/L		101		70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	27.2		ng/L		108		70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	26.0		ng/L		104		70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	25.8		ng/L		103		70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	23.9		ng/L		96		70 - 130
Perfluorooctanoic acid (PFOA)	25.1	27.2		ng/L		109		70 - 130
Perfluorodecanoic acid (PFDA)	25.1	24.9		ng/L		99		70 - 130
Perfluorohexanesulfonic acid (PFHxS)	25.1	26.8		ng/L		107		70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	23.7		ng/L		95		70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	27.5		ng/L		110		70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.4		ng/L		106		70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	23.0		ng/L		92		70 - 130
Perfluorotridecanoic acid (PFTrDA)	25.1	23.9		ng/L		95		70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	26.2		ng/L		105		70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	25.0		ng/L		100		70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	27.3		ng/L		109		70 - 130

<i>Surrogate</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
d5-NEtFOSAA	106		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	101		70 - 130
13C3-GenX	95		70 - 130

QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: MRL 380-74565/22-A
Matrix: Water
Analysis Batch: 74667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74565

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.22	J	ng/L		111	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	2.08	J	ng/L		104	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.01	2.30	J	ng/L		114	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.01	2.10	J	ng/L		105	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	2.13	J	ng/L		106	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	2.11	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	2.33	J	ng/L		116	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	2.16	J	ng/L		108	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	2.23	J	ng/L		111	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	2.04	J	ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	2.39	J	ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.01	2.08	J	ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.01	2.12	J	ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	2.23	J	ng/L		111	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	2.14	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	2.19	J	ng/L		109	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	95		70 - 130
13C2 PFDA	98		70 - 130
13C3-GenX	88		70 - 130

Lab Sample ID: 380-81242-B-2-A MS
Matrix: Water
Analysis Batch: 74667

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74565

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		25.1	24.1		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.1	26.6		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.9		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.0		ng/L		104	70 - 130

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QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: 380-81242-B-2-A MS
Matrix: Water
Analysis Batch: 74667

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 74565

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	25.7		ng/L		103	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	27.9		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	24.3		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	27.1		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.6		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.1	28.2		ng/L		112	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.1	28.5		ng/L		112	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	27.6		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.9		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	22.4		ng/L		89	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	23.9		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	26.8		ng/L		107	70 - 130
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	25.4		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	27.4		ng/L		109	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	105		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	94		70 - 130

Lab Sample ID: 380-81242-C-2-A MSD
Matrix: Water
Analysis Batch: 74667

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 74565

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	24.1		ng/L		96	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	26.5		ng/L		106	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	25.9		ng/L		103	70 - 130	0	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	27.8		ng/L		111	70 - 130	7	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.2	27.3		ng/L		108	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	28.1		ng/L		109	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.2		ng/L		96	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	27.4		ng/L		109	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	25.9		ng/L		103	70 - 130	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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

Lab Sample ID: 380-81242-C-2-A MSD

Matrix: Water

Analysis Batch: 74667

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 74565

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	28.7		ng/L		114	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	26.2		ng/L		103	70 - 130	8	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	28.2		ng/L		111	70 - 130	2	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	26.6		ng/L		106	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	22.4		ng/L		89	70 - 130	0	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.2	24.1		ng/L		96	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	25.7		ng/L		102	70 - 130	4	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	25.4		ng/L		101	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	27.1		ng/L		108	70 - 130	1	30

Surrogate	MSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	109		70 - 130
13C2 PFDA	103		70 - 130
13C3-GenX	99		70 - 130

QC Association Summary

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

LCMS

Prep Batch: 74565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-81191-1	BWS2253-J1-AQ	Total/NA	Water	537.1 DW	
380-81191-2	BWS2253-J1-FB	Total/NA	Water	537.1 DW	
MBL 380-74565/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-74565/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-74565/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-81242-B-2-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-81242-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 74667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-81191-1	BWS2253-J1-AQ	Total/NA	Water	537.1	74565
380-81191-2	BWS2253-J1-FB	Total/NA	Water	537.1	74565
MBL 380-74565/21-A	Method Blank	Total/NA	Water	537.1	74565
LCS 380-74565/23-A	Lab Control Sample	Total/NA	Water	537.1	74565
MRL 380-74565/22-A	Lab Control Sample	Total/NA	Water	537.1	74565
380-81242-B-2-A MS	Matrix Spike	Total/NA	Water	537.1	74565
380-81242-C-2-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	74565

Prep Batch: 74819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-81191-1	BWS2253-J1-AQ	Total/NA	Water	533	
380-81191-2	BWS2253-J1-FB	Total/NA	Water	533	
MBL 380-74819/21-A	Method Blank	Total/NA	Water	533	
LCS 380-74819/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-74819/22-A	Lab Control Sample	Total/NA	Water	533	
380-81191-1 MS	BWS2253-J1-AQ	Total/NA	Water	533	
380-81191-1 MSD	BWS2253-J1-AQ	Total/NA	Water	533	

Analysis Batch: 74944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-81191-1	BWS2253-J1-AQ	Total/NA	Water	533	74819
380-81191-2	BWS2253-J1-FB	Total/NA	Water	533	74819
MBL 380-74819/21-A	Method Blank	Total/NA	Water	533	74819
LCS 380-74819/23-A	Lab Control Sample	Total/NA	Water	533	74819
MRL 380-74819/22-A	Lab Control Sample	Total/NA	Water	533	74819
380-81191-1 MS	BWS2253-J1-AQ	Total/NA	Water	533	74819
380-81191-1 MSD	BWS2253-J1-AQ	Total/NA	Water	533	74819

Lab Chronicle

Client: City & County of Honolulu
 Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-81191-1

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74819	T2EP	EA POM	02/04/24 11:29
Total/NA	Analysis	533		1	74944	SZ9R	EA POM	02/05/24 17:02
Total/NA	Prep	537.1 DW			74565	SL5Q	EA POM	02/02/24 09:33
Total/NA	Analysis	537.1		1	74667	R6YA	EA POM	02/03/24 02:36

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-81191-2

Date Collected: 01/31/24 10:45

Matrix: Water

Date Received: 02/01/24 10:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			74819	T2EP	EA POM	02/04/24 11:29
Total/NA	Analysis	533		1	74944	SZ9R	EA POM	02/05/24 18:19
Total/NA	Prep	537.1 DW			74565	SL5Q	EA POM	02/02/24 09:33
Total/NA	Analysis	537.1		1	74667	R6YA	EA POM	02/03/24 02:46

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: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

Laboratory: Eurofins Eaton Analytical Pomona

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-24 *

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
533	533	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

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

Method Summary

Client: City & County of Honolulu
Project/Site: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

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: HRS-340E - RED-HILL - INTERA

Job ID: 380-81191-1

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-81191-1	BWS2253-J1-AQ	Water	01/31/24 10:45	02/01/24 10:35
380-81191-2	BWS2253-J1-FB	Water	01/31/24 10:45	02/01/24 10:35

- 1
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- 16

Chain of Custody Record

Client Information		Lab PM Arada, Rachelle		Carrier Tracking Note(s)		COC No	
Client Contact: Mr. Erwin Kawata		E-Mail Rachelle.Arada@eurofins.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:		Total Number of Containers		Preservation Codes: M - Hexane N - None O - AsNaO2 P - NazOAS Q - Zn Acetate R - NazSO3 S - H2SO4 T - TSP Dodecylhydrate U - Acalene V - MCAA W - pH 4-5 X - EDTA Y - Trizma Z - other (specify) Other:	
City Honolulu		TAT Requested (days): Standard		Subcontract Notes		Special Instructions/Note: x = testing comes from another container.	
State, Zip HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Subcontract Notes			
Phone 808-748-5066 (Tel)		Project #: C20525101 exp 06312023		Subcontract Notes			
Email: ekawata@hbws.org		SSOW#: 98002227		Subcontract Notes			
Project Name HRS-340E - RED-HILL - INTERA		Field Filtered Sample (Yes or No)		Subcontract Notes			
Site Site J		Perform MS/MSD (Yes or No)		Subcontract Notes			
Sample Identification		Sample Date		Subcontract Notes			
BWS2253-J1-AQ		1/31/24 1045		Subcontract Notes			
BWS2253-J1-TB		1/31/24 1045		Subcontract Notes			
BWS2253-J1-FB				Subcontract Notes			
Matrix (Water, Solid, On-wastobill, BETA-tissue, Acid)		Sample Type (C=comp, G=grab)		Subcontract Notes			
Water		G		Subcontract Notes			
Water		G		Subcontract Notes			
Water		G		Subcontract Notes			
Sample Time		Sample Time		Subcontract Notes			
1/31/24 1045		1/31/24 1045		Subcontract Notes			
Sample Time		Sample Time		Subcontract Notes			
1/31/24 1045		1/31/24 1045		Subcontract Notes			
Sample Time		Sample Time		Subcontract Notes			
1/31/24 1045		1/31/24 1045		Subcontract Notes			
Sample Time		Sample Time		Subcontract Notes			
1/31/24 1045		1/31/24 1045		Subcontract Notes			

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date _____ Time: _____
Relinquished by: _____ Date _____ Time: _____
Company: INTERA
Received by: [Signature] Date: 1/31/24, 1330
Company: INTERA
Received by: [Signature] Date: 02/01/2024 10:35
Company: COMPANY
Received by: _____ Date _____ Time _____
Company: COMPANY

Custody Seals Intact: _____
 Yes No

Custody Seal No.: _____

Cooler Temperature(s) °C and Other Remarks: (751A) 0.7' - 0.1° - 0.6° REAL FROZEN



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-81191-1

Login Number: 81191
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and 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	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	