

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 8/7/2024 9:30:08 AM

JOB DESCRIPTION

INTERA - Red-Hill-Incident
Site J - PFAS

JOB NUMBER

380-106600-1

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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Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106



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Definitions/Glossary

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

Job ID: 380-106600-1
SDG: Site J - PFAS

Qualifiers

LCMS

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: INTERA - Red-Hill-Incident

Job ID: 380-106600-1

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Job Narrative 380-106600-1

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

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

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

Receipt

The samples were received on 8/1/2024 10:23 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.1°C.

PFAS

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: 380-106600-1
SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-106600-1

No Detections.

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-106600-2

No Detections.

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

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-106600-1

Date Collected: 07/31/24 11:15

Matrix: Drinking Water

Date Received: 08/01/24 10:23

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		08/04/24 12:25	08/05/24 13:19	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C6 PFDA	72		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C5 PFHxA	95		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C4 PFHpA	94		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C8 PFOA	90		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C9 PFNA	88		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C7 PFUnA	64		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C2 PFDoA	70		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C4 PFBA	104		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C5 PFPeA	105		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C3 PFBS	113		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C3 PFHxS	111		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C8 PFOS	112		50 - 200	08/04/24 12:25	08/05/24 13:19	1

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Client Sample Results

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

Job ID: 380-106600-1
SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-106600-1

Date Collected: 07/31/24 11:15

Matrix: Drinking Water

Date Received: 08/01/24 10:23

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	155		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C2-6:2-FTS	146		50 - 200	08/04/24 12:25	08/05/24 13:19	1
13C2-8:2-FTS	123		50 - 200	08/04/24 12:25	08/05/24 13:19	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		08/01/24 15:22	08/02/24 21:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:01	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	104		70 - 130	08/01/24 15:22	08/02/24 21:01	1		
13C2 PFHxA	96		70 - 130	08/01/24 15:22	08/02/24 21:01	1		
13C2 PFDA	103		70 - 130	08/01/24 15:22	08/02/24 21:01	1		
13C3-GenX	95		70 - 130	08/01/24 15:22	08/02/24 21:01	1		

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-106600-2

Date Collected: 07/31/24 11:15

Matrix: Water

Date Received: 08/01/24 10:23

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		08/04/24 12:25	08/05/24 13:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1

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Client Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-106600-2

Date Collected: 07/31/24 11:15

Matrix: Water

Date Received: 08/01/24 10:23

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		08/04/24 12:25	08/05/24 13:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/04/24 12:25	08/05/24 13:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C6 PFDA	91		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C5 PFHxA	96		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C4 PFHpA	100		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C8 PFOA	92		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C9 PFNA	98		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C7 PFUnA	90		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C2 PFDoA	90		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C4 PFBA	104		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C5 PFPeA	98		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C3 PFBS	119		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C3 PFHxS	114		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C8 PFOS	110		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C2-4:2-FTS	141		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C2-6:2-FTS	123		50 - 200	08/04/24 12:25	08/05/24 13:48	1
13C2-8:2-FTS	112		50 - 200	08/04/24 12:25	08/05/24 13:48	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		08/01/24 15:22	08/02/24 21:11	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-106600-2

Date Collected: 07/31/24 11:15

Matrix: Water

Date Received: 08/01/24 10:23

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		08/01/24 15:22	08/02/24 21:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/01/24 15:22	08/02/24 21:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130			08/01/24 15:22	08/02/24 21:11	1
13C2 PFHxA	94		70 - 130			08/01/24 15:22	08/02/24 21:11	1
13C2 PFDA	105		70 - 130			08/01/24 15:22	08/02/24 21:11	1
13C3-GenX	86		70 - 130			08/01/24 15:22	08/02/24 21:11	1

Action Limit Summary

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-106600-1

Compliance Check

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

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

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-106600-2

Compliance Check

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

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

Surrogate Summary

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Matrix: Drinking 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)
380-106600-1	BWS2253-J1-AQ	104	96	103	95

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-106365-B-1-A MS	Matrix Spike	101	102	106	105
380-106365-B-1-B MSD	Matrix Spike Duplicate	99	89	98	93
380-106600-2	BWS2253-J1-FB	102	94	105	86
LCS 380-101812/22-A	Lab Control Sample	94	96	100	90
MBL 380-101812/20-A	Method Blank	96	97	103	91
MRL 380-101812/21-A	Lab Control Sample	101	95	105	89

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

Isotope Dilution Summary

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-106600-1	BWS2253-J1-AQ	94	72	95	94	90	88	64	70
380-106600-1 MS	BWS2253-J1-AQ	91	60	90	94	85	80	53	57
380-106600-1 MSD	BWS2253-J1-AQ	97	90	95	100	94	99	85	83

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)
380-106600-1	BWS2253-J1-AQ	104	105	113	111	112	155	146	123
380-106600-1 MS	BWS2253-J1-AQ	97	106	118	114	111	150	144	122
380-106600-1 MSD	BWS2253-J1-AQ	105	111	117	114	110	150	140	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

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)
380-106600-2	BWS2253-J1-FB	90	91	96	100	92	98	90	90
LCS 380-102130/23-A	Lab Control Sample	88	95	92	95	93	97	93	98
MBL 380-102130/21-A	Method Blank	88	92	95	99	96	100	92	97
MRL 380-102130/22-A	Lab Control Sample	86	94	93	99	93	101	92	95

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)
380-106600-2	BWS2253-J1-FB	104	98	119	114	110	141	123	112
LCS 380-102130/23-A	Lab Control Sample	95	93	120	120	116	126	122	116
MBL 380-102130/21-A	Method Blank	102	96	123	120	113	136	131	113
MRL 380-102130/22-A	Lab Control Sample	97	94	117	117	112	130	128	109

Surrogate Legend

- HFPODA = 13C3 HFPO-DA
- C6PFDA = 13C6 PFDA
- 13C5PHA = 13C5 PFHxA

Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: INTERA - Red-Hill-Incident

Job ID: 380-106600-1

SDG: Site J - PFAS

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

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

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: MBL 380-102130/21-A
Matrix: Water
Analysis Batch: 102249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 102130

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		08/04/24 12:25	08/05/24 12:51	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/04/24 12:25	08/05/24 12:51	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C6 PFDA	92		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C5 PFHxA	95		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C4 PFHpA	99		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C8 PFOA	96		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C9 PFNA	100		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C7 PFUnA	92		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C2 PFDoA	97		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C4 PFBA	102		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C5 PFPeA	96		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C3 PFBS	123		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C3 PFHxS	120		50 - 200	08/04/24 12:25	08/05/24 12:51	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: MBL 380-102130/21-A
Matrix: Water
Analysis Batch: 102249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 102130

<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	113		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C2-4:2-FTS	136		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C2-6:2-FTS	131		50 - 200	08/04/24 12:25	08/05/24 12:51	1
13C2-8:2-FTS	113		50 - 200	08/04/24 12:25	08/05/24 12:51	1

Lab Sample ID: LCS 380-102130/23-A
Matrix: Water
Analysis Batch: 102249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102130

<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	103		ng/L		86	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	105		ng/L		87	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	102		ng/L		85	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	105		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	106		ng/L		88	70 - 130
Perfluorodecanoic acid (PFDA)	120	107		ng/L		89	70 - 130
Perfluorododecanoic acid (PFDoA)	120	107		ng/L		89	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	109		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	107		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	120	112		ng/L		93	70 - 130
Perfluorononanoic acid (PFNA)	120	107		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	105		ng/L		87	70 - 130
Perfluorooctanoic acid (PFOA)	120	109		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	114		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	120	109		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	108		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	108		ng/L		90	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	111		ng/L		92	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	110		ng/L		92	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	96.6		ng/L		80	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	107		ng/L		89	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	107		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	120	111		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	108		ng/L		90	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: LCS 380-102130/23-A
Matrix: Water
Analysis Batch: 102249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	120	105		ng/L		87	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	88		50 - 200				
13C6 PFDA	95		50 - 200				
13C5 PFHxA	92		50 - 200				
13C4 PFHpA	95		50 - 200				
13C8 PFOA	93		50 - 200				
13C9 PFNA	97		50 - 200				
13C7 PFUnA	93		50 - 200				
13C2 PFDoA	98		50 - 200				
13C4 PFBA	95		50 - 200				
13C5 PFPeA	93		50 - 200				
13C3 PFBS	120		50 - 200				
13C3 PFHxS	120		50 - 200				
13C8 PFOS	116		50 - 200				
13C2-4:2-FTS	126		50 - 200				
13C2-6:2-FTS	122		50 - 200				
13C2-8:2-FTS	116		50 - 200				

Lab Sample ID: MRL 380-102130/22-A
Matrix: Water
Analysis Batch: 102249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102130

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.79	J	ng/L		90	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.93	J	ng/L		97	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.76	J	ng/L		88	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.89	J	ng/L		95	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.97	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.95	J	ng/L		98	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.77	J	ng/L		88	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.99	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.98	J	ng/L		99	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: MRL 380-102130/22-A
Matrix: Water
Analysis Batch: 102249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102130

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.98	J	ng/L		99	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.07	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.10	J	ng/L		105	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.73	J	ng/L		86	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.89	J	ng/L		95	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.92	J	ng/L		96	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.91	J	ng/L		95	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	86		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	93		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	95		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	94		50 - 200
13C3 PFBS	117		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	112		50 - 200
13C2-4:2-FTS	130		50 - 200
13C2-6:2-FTS	128		50 - 200
13C2-8:2-FTS	109		50 - 200

Lab Sample ID: 380-106600-1 MS
Matrix: Drinking Water
Analysis Batch: 102249

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 102130

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	53.3		ng/L		89	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	55.8		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	53.7		ng/L		89	70 - 130

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: 380-106600-1 MS
Matrix: Drinking Water
Analysis Batch: 102249

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 102130

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.2	52.1		ng/L		86	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	54.4		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	53.9		ng/L		89	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	54.5		ng/L		90	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.2	56.8		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.2	57.0		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.2	59.8		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	52.0		ng/L		86	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.2	56.4		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.2	57.9		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	59.6		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.2	61.7		ng/L		101	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	57.8		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	55.7		ng/L		92	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	56.6		ng/L		94	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	62.5		ng/L		104	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	51.7		ng/L		86	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	60.4		ng/L		100	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	59.2		ng/L		98	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.2	59.5		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	56.9		ng/L		94	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	59.0		ng/L		97	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	60		50 - 200
13C5 PFHxA	90		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	85		50 - 200
13C9 PFNA	80		50 - 200
13C7 PFUnA	53		50 - 200
13C2 PFDoA	57		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	106		50 - 200
13C3 PFBS	118		50 - 200
13C3 PFHxS	114		50 - 200
13C8 PFOS	111		50 - 200

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: 380-106600-1 MS
Matrix: Drinking Water
Analysis Batch: 102249

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 102130

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	150		50 - 200
13C2-6:2-FTS	144		50 - 200
13C2-8:2-FTS	122		50 - 200

Lab Sample ID: 380-106600-1 MSD
Matrix: Drinking Water
Analysis Batch: 102249

Client Sample ID: BWS2253-J1-AQ
Prep Type: Total/NA
Prep Batch: 102130

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.1	54.1		ng/L		90	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.1	53.3		ng/L		89	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.1	54.0		ng/L		90	70 - 130	0	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.1	54.3		ng/L		90	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.1	54.8		ng/L		91	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		60.1	56.9		ng/L		95	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.1	55.3		ng/L		92	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		60.1	55.6		ng/L		92	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.1	56.0		ng/L		93	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		60.1	60.2		ng/L		98	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		60.1	54.7		ng/L		91	70 - 130	5	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.1	56.1		ng/L		93	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		60.1	58.7		ng/L		98	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.1	58.3		ng/L		97	70 - 130	2	30
Perfluorobutanoic acid (PFBA)	<2.0		60.1	58.0		ng/L		95	70 - 130	6	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.1	54.7		ng/L		91	70 - 130	6	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.1	56.5		ng/L		94	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.1	57.0		ng/L		95	70 - 130	1	30
Nonfluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.1	51.1		ng/L		85	70 - 130	20	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.1	52.3		ng/L		87	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.1	58.1		ng/L		97	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.1	58.7		ng/L		98	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		60.1	58.8		ng/L		95	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.1	56.7		ng/L		94	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.1	56.1		ng/L		92	70 - 130	5	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	97		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	94		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	85		50 - 200
13C2 PFDoA	83		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	111		50 - 200
13C3 PFBS	117		50 - 200
13C3 PFHxS	114		50 - 200
13C8 PFOS	110		50 - 200
13C2-4:2-FTS	150		50 - 200
13C2-6:2-FTS	140		50 - 200
13C2-8:2-FTS	116		50 - 200

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

Lab Sample ID: MBL 380-101812/20-A
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101812

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		08/01/24 15:22	08/02/24 17:21	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/01/24 15:22	08/02/24 17:21	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	96		70 - 130			08/01/24 15:22	08/02/24 17:21	1
13C2 PFHxA	97		70 - 130			08/01/24 15:22	08/02/24 17:21	1
13C2 PFDA	103		70 - 130			08/01/24 15:22	08/02/24 17:21	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: MBL 380-101812/20-A
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101812

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	91		70 - 130	08/01/24 15:22	08/02/24 17:21	1

Lab Sample ID: LCS 380-101812/22-A
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101812

<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>Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.0	46.8		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.0	54.2		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.0	52.5		ng/L		105	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.0	50.6		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.0	49.0		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	50.0	47.3		ng/L		95	70 - 130
Perfluorododecanoic acid (PFDoA)	50.0	49.0		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	50.0	50.3		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	50.0	49.0		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.0	55.5		ng/L		111	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.0	51.9		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.0	50.2		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	50.0	51.3		ng/L		103	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.0	48.4		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.0	47.8		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	50.0	53.3		ng/L		107	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.0	52.0		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.0	48.9		ng/L		98	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	94		70 - 130
13C2 PFHxA	96		70 - 130
13C2 PFDA	100		70 - 130
13C3-GenX	90		70 - 130

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: MRL 380-101812/21-A
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101812

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.43	J	ng/L		121	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.39	J	ng/L		119	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.39	J	ng/L		119	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.42	J	ng/L		121	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.19	J	ng/L		109	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.39	J	ng/L		119	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.51	J	ng/L		125	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.34	J	ng/L		117	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.27	J	ng/L		113	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.45	J	ng/L		122	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.24	J	ng/L		112	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.31	J	ng/L		115	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	95		70 - 130
13C2 PFDA	105		70 - 130
13C3-GenX	89		70 - 130

Lab Sample ID: 380-106365-B-1-A MS
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 101812

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	24.6		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	28.2		ng/L		112	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	28.0		ng/L		111	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.2	26.5		ng/L		105	70 - 130

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QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: 380-106365-B-1-A MS
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 101812

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	<2.0		25.2	25.3		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	25.0		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	25.5		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.2	27.7		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.2	26.9		ng/L		107	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		25.2	28.8		ng/L		113	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	26.8		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	26.6		ng/L		106	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.2	27.4		ng/L		109	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	26.8		ng/L		107	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	26.1		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	26.9		ng/L		107	70 - 130
11-Chloroeicosasfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	25.8		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	26.8		ng/L		107	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	106		70 - 130
13C3-GenX	105		70 - 130

Lab Sample ID: 380-106365-B-1-B MSD
Matrix: Water
Analysis Batch: 101978

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 101812

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.2	25.0		ng/L		99	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		25.2	27.6		ng/L		110	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.2	26.1		ng/L		104	70 - 130	7	30
N-methylperfluorooctanesulfonamide doacetic acid (NMeFOSAA)	<2.0		25.2	26.9		ng/L		107	70 - 130	1	30
N-ethylperfluorooctanesulfonamide doacetic acid (NEtFOSAA)	<2.0		25.2	26.3		ng/L		105	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.2	24.2		ng/L		96	70 - 130	3	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.2	24.7		ng/L		98	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	<2.0		25.2	26.4		ng/L		102	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<2.0		25.2	25.5		ng/L		101	70 - 130	5	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

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

Lab Sample ID: 380-106365-B-1-B MSD
 Matrix: Water
 Analysis Batch: 101978

Client Sample ID: Matrix Spike Duplicate
 Prep Type: Total/NA
 Prep Batch: 101812

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	27.8		ng/L		109	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		25.2	26.4		ng/L		105	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.2	24.3		ng/L		97	70 - 130	9	30
Perfluorononanoic acid (PFNA)	<2.0		25.2	26.2		ng/L		104	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.2	25.0		ng/L		100	70 - 130	7	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.2	24.5		ng/L		98	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.2	26.8		ng/L		107	70 - 130	0	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.2	25.9		ng/L		103	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.2	25.2		ng/L		100	70 - 130	6	30
Surrogate											
		MSD %Recovery	MSD Qualifier	Limits							
d5-NEtFOSAA		99		70 - 130							
13C2 PFHxA		89		70 - 130							
13C2 PFDA		98		70 - 130							
13C3-GenX		93		70 - 130							

QC Association Summary

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

LCMS

Prep Batch: 101812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-106600-1	BWS2253-J1-AQ	Total/NA	Drinking Water	537.1 DW	
380-106600-2	BWS2253-J1-FB	Total/NA	Water	537.1 DW	
MBL 380-101812/20-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-101812/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-101812/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-106365-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-106365-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 101978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-106600-1	BWS2253-J1-AQ	Total/NA	Drinking Water	537.1	101812
380-106600-2	BWS2253-J1-FB	Total/NA	Water	537.1	101812
MBL 380-101812/20-A	Method Blank	Total/NA	Water	537.1	101812
LCS 380-101812/22-A	Lab Control Sample	Total/NA	Water	537.1	101812
MRL 380-101812/21-A	Lab Control Sample	Total/NA	Water	537.1	101812
380-106365-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	101812
380-106365-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	101812

Prep Batch: 102130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-106600-1	BWS2253-J1-AQ	Total/NA	Drinking Water	533	
380-106600-2	BWS2253-J1-FB	Total/NA	Water	533	
MBL 380-102130/21-A	Method Blank	Total/NA	Water	533	
LCS 380-102130/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-102130/22-A	Lab Control Sample	Total/NA	Water	533	
380-106600-1 MS	BWS2253-J1-AQ	Total/NA	Drinking Water	533	
380-106600-1 MSD	BWS2253-J1-AQ	Total/NA	Drinking Water	533	

Analysis Batch: 102249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-106600-1	BWS2253-J1-AQ	Total/NA	Drinking Water	533	102130
380-106600-2	BWS2253-J1-FB	Total/NA	Water	533	102130
MBL 380-102130/21-A	Method Blank	Total/NA	Water	533	102130
LCS 380-102130/23-A	Lab Control Sample	Total/NA	Water	533	102130
MRL 380-102130/22-A	Lab Control Sample	Total/NA	Water	533	102130
380-106600-1 MS	BWS2253-J1-AQ	Total/NA	Drinking Water	533	102130
380-106600-1 MSD	BWS2253-J1-AQ	Total/NA	Drinking Water	533	102130

Lab Chronicle

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

Job ID: 380-106600-1
 SDG: Site J - PFAS

Client Sample ID: BWS2253-J1-AQ

Lab Sample ID: 380-106600-1

Date Collected: 07/31/24 11:15

Matrix: Drinking Water

Date Received: 08/01/24 10:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			102130	N8NE	EA POM	08/04/24 12:25
Total/NA	Analysis	533		1	102249	SZ9R	EA POM	08/05/24 13:19
Total/NA	Prep	537.1 DW			101812	N8NE	EA POM	08/01/24 15:22
Total/NA	Analysis	537.1		1	101978	Y5FM	EA POM	08/02/24 21:01

Client Sample ID: BWS2253-J1-FB

Lab Sample ID: 380-106600-2

Date Collected: 07/31/24 11:15

Matrix: Water

Date Received: 08/01/24 10:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			102130	N8NE	EA POM	08/04/24 12:25
Total/NA	Analysis	533		1	102249	SZ9R	EA POM	08/05/24 13:48
Total/NA	Prep	537.1 DW			101812	N8NE	EA POM	08/01/24 15:22
Total/NA	Analysis	537.1		1	101978	Y5FM	EA POM	08/02/24 21:11

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: INTERA - Red-Hill-Incident

Job ID: 380-106600-1
SDG: Site J - PFAS

Laboratory: Eurofins Eaton Analytical Pomona

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

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

- 1
- 2
- 3
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Method Summary

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

Job ID: 380-106600-1
SDG: Site J - PFAS

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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



Sample Summary

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

Job ID: 380-106600-1
SDG: Site J - PFAS

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-106600-1	BWS2253-J1-AQ	Drinking Water	07/31/24 11:15	08/01/24 10:23
380-106600-2	BWS2253-J1-FB	Water	07/31/24 11:15	08/01/24 10:23

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Client Information		Sampler: N Mattner/J Joseph	Lab PM: Arada, Rachelle	Carrier Tracking No(s): 380-106600 COC	COC No.:
Client Contact: Mr Erwin Kawata		Phone: 858-205-0730	E-Mail: Rachelle.Arada@eurofins.com	State of Origin: Hawaii	Page: Page 1 of 1
City & County of Honolulu		PWSID:		Job #:	
Address: 630 South Beretania Street		Due Date Requested		Analysis Requested	
City: Honolulu	TAT Requested (days): Standard				
State, Zip: HI 96843	Compliance Project: Δ Yes Δ No				
Phone: 808-748-5066(Tel)	PO #: C20525101 exp.05312023				
Email: ekawata@hbws.org	WO #:				
Project Name: HRS-340E - RED-HILL - INTERA	Project #: 38000861				
Site: Site J	SSOW#:				
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code:	Field Filtered Sample (Yes or No)
BWS2253-J1-AQ	7/31/2024	1115	G	Water	Perform MS/MSD (Yes or No)
BWS2253-J1-FB	7/31/2024	1115	G	Water	Subcontract - 625 - PAH Only + TICs
	7/31/2024	1115	G	Water	Subcontract - TPH 8015 P+M, JPS, JPS
					Subcontract - (MOB) Super Volatiles List
					Subcontract - 8045 Gas
					PFAS 633 - All Analytes
					PFAS 637 1_DW_PREC-537 1 Full List
					PFAS 1633 - DOD5 - 1633 Sig List
Total Number of Containers					
Special Instructions/Note: x = testing comes from another container					
Subcontract Notes: 625-PAH-EEA-Pom -> Ship to Galster 8015-TPH-TPM, JPS, JP8 - EEA-Pom 8045-Gas-EEA-Pom 8260B-EEA-Pom PFAS 537.1 & 533 - EEA-Pom PFAS 1633 - EEA-SAC Bill and Report to EEA - Pomona					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab Archive For _____ Months					
Special Instructions/QC Requirements					
Empty Kit Relinquished by			Time		
Relinquished by: <i>(Signature)</i>			Date: 7/31/24 1230		
Relinquished by: <i>(Signature)</i>			Company: INTERA Inc		
Relinquished by: <i>(Signature)</i>			Company: Company		
Relinquished by: <i>(Signature)</i>			Company: Company		
Custody Seals Intact: Δ Yes Δ No			Cooler Temperature(s) °C and Other Remarks: (75)A 1.2°-0.1°-1.1° REAL-FREEM		
Custody Seal No.:			Method of Shipment: FEDEX Priority Overnight 7777 5152 0182		



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-106600-1

SDG Number: Site J - PFAS

Login Number: 106600

List Source: Eurofins Eaton Analytical Pomona

List Number: 1

Creator: Gerfen, Chris

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").	N/A	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

