

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

INTERA - Red-Hill-Incident
Site S1 PFAS 1633

JOB NUMBER

380-217879-1

Eurofins Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Qualifiers

LCMS

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
I	Ion ratio outside limits

Glossary

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

Case Narrative

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

Job ID: 380-217879-1

Job ID: 380-217879-1

Eurofins Pomona

Job Narrative 380-217879-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The sample was received on 6/4/2026 9:10 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C.

PFAS

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

Method QSM B-24: The low level continuing calibration verification (CCVL) and continuing calibration verification (CCV) associated with batch 320-921126 recovered above the upper control limit for Nonafluoro-3,6-dioxaheptanoic acid (NFDHA). The method blank (MB) and client samples associated with these CCVs were non-detects, the low level laboratory control sample/ laboratory control sample and laboratory control sample duplicate (LLCS/LCS/LCSD) recoveries were in control for the associated target analyte; therefore, the data have been reported. The associated samples are impacted: BWS2153-S1-AQ (380-217879-1), (CCV 320-921126/27), (CCVL 320-921126/2), (LCS 320-920826/3-A), (LCSD 320-920826/4-A), (LLCS 320-920826/2-A) and (MB 320-920826/1-A).

Method QSM B-24: The low level continuing calibration verification (CCVL) and continuing calibration verification (CCV) associated with batch 320-921126 recovered above the upper control limit for one or more of the following isotope dilution analytes (IDA): 13C2 4:2 FTS, d3-NMeFOSAA and d5-NEtFOSAA. The associated target analytes, 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS), N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA) and N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA), were within control limits in the CCVs. The client samples were in control for the affected IDA. The method blank (MB) and client samples associated with these CCVs were non-detects for the associated target analytes, the low level laboratory control sample, laboratory control sample and laboratory control sample duplicate (LLCS/LCS/LCSD) recoveries were in control for the associated target analyte; therefore, the data have been reported. The associated samples are impacted: (CCV 320-921126/15), (CCV 320-921126/3), (CCVL 320-921126/2), (LCS 320-920826/3-A), (LCSD 320-920826/4-A), (LLCS 320-920826/2-A) and (MB 320-920826/1-A).

Method QSM B-24: The low level laboratory control sample (LLCS) and laboratory control sample duplicate (LCSD) for preparation batch 320-920826 and analytical batch 320-921126 recovered outside control limits for the following analytes: 4,8-Dioxa-3H-perfluorononanoic acid (ADONA). This analyte was biased high in the LLCS/LCSD and was not detected in the associated samples; therefore, the data have been reported.

Method QSM B-24: The continuing calibration verification (CCV) associated with batch 320-921126 recovered above the upper control limit for one or more of the following isotope dilution analyte (IDA): 13C5 PFPeA and d3-NMeFOSAA. The associated target analytes, Perfluoro-3-methoxypropanoic acid (PFMPA), Perfluoro-4-methoxybutanoic acid (PFMBA), Perfluoropentanoic acid (PFPeA) and N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA), were within control limits in the CCVs. The client samples were in control for the affected IDA. The client samples associated with this CCV were non-detects for the associated target analytes; therefore, the data have been reported. The associated samples are impacted: BWS2153-S1-AQ (380-217879-1), (CCV 320-921126/27) and (CCV 320-921126/32).

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Case Narrative

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

Job ID: 380-217879-1

Job ID: 380-217879-1 (Continued)

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

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Detection Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Client Sample ID: BWS2153-S1-AQ

Lab Sample ID: 380-217879-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.0		3.0	ng/L	1		QSM B-24	Total/NA
Perfluorooctanoic acid (PFOA)	5.1		1.5	ng/L	1		QSM B-24	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		1.5	ng/L	1		QSM B-24	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18	I	1.5	ng/L	1		QSM B-24	Total/NA

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: 380-217879-1
SDG: Site S1 PFAS 1633

Client Sample ID: BWS2153-S1-AQ

Lab Sample ID: 380-217879-1

Date Collected: 06/03/26 08:30

Matrix: Water

Date Received: 06/04/26 09:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	3.0		3.0	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoropentanoic acid (PFPeA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorohexanoic acid (PFHxA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoroheptanoic acid (PFHpA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorooctanoic acid (PFOA)	5.1		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorononanoic acid (PFNA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorodecanoic acid (PFDA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoroundecanoic acid (PFUnA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorododecanoic acid (PFDoA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorotridecanoic acid (PFTrDA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorotetradecanoic acid (PFTeDA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorobutanesulfonic acid (PFBS)	<3.0		3.0	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoropentanesulfonic acid (PFPeS)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorooctanesulfonic acid (PFOS)	18	I	1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorononanesulfonic acid (PFNS)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorodecanesulfonic acid (PFDS)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorododecanesulfonic acid (PFDoS)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<3.0		3.0	ng/L		06/08/26 20:04	06/11/26 09:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<3.0		3.0	ng/L		06/08/26 20:04	06/11/26 09:18	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<3.0		3.0	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluorooctanesulfonamide (PFOSA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	<7.5		7.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	<7.5		7.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<1.1		1.1	ng/L		06/08/26 20:04	06/11/26 09:18	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<1.5	*+	1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	<1.5	^+	1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1

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Client Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Client Sample ID: BWS2153-S1-AQ

Lab Sample ID: 380-217879-1

Date Collected: 06/03/26 08:30

Matrix: Water

Date Received: 06/04/26 09:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	<3.0		3.0	ng/L		06/08/26 20:04	06/11/26 09:18	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	<7.5		7.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	<7.5		7.5	ng/L		06/08/26 20:04	06/11/26 09:18	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C4 PFBA	95.4		5 - 130			06/08/26 20:04	06/11/26 09:18	1
13C5 PFPeA	103		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C5 PFHxA	87.1		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C4 PFHpA	98.7		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C8 PFOA	96.0		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C9 PFNA	100		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C6 PFDA	89.7		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C7 PFUnA	95.5		30 - 130			06/08/26 20:04	06/11/26 09:18	1
13C2 PFDoA	98.8		10 - 130			06/08/26 20:04	06/11/26 09:18	1
13C2 PFTeDA	87.0		10 - 130			06/08/26 20:04	06/11/26 09:18	1
13C6 PFTrDA	87.6		20 - 150			06/08/26 20:04	06/11/26 09:18	1
13C3 PFBS	94.9		40 - 135			06/08/26 20:04	06/11/26 09:18	1
13C3 PFHxS	114		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C8 PFOS	95.0		40 - 130			06/08/26 20:04	06/11/26 09:18	1
13C8 PFOSA	107		40 - 130			06/08/26 20:04	06/11/26 09:18	1
d3-NMeFOSAA	121		40 - 170			06/08/26 20:04	06/11/26 09:18	1
d5-NEtFOSAA	98.2		25 - 135			06/08/26 20:04	06/11/26 09:18	1
13C2 4:2 FTS	146		40 - 200			06/08/26 20:04	06/11/26 09:18	1
13C2 6:2 FTS	157		40 - 200			06/08/26 20:04	06/11/26 09:18	1
13C2 8:2 FTS	106		40 - 300			06/08/26 20:04	06/11/26 09:18	1
13C3 HFPO-DA	78.0		40 - 130			06/08/26 20:04	06/11/26 09:18	1
d7-N-MeFOSE-M	106		10 - 130			06/08/26 20:04	06/11/26 09:18	1
d9-N-EtFOSE-M	98.4		10 - 130			06/08/26 20:04	06/11/26 09:18	1
d5-NEtPFOSA	85.3		10 - 130			06/08/26 20:04	06/11/26 09:18	1
d3-NMePFOSA	93.4		10 - 130			06/08/26 20:04	06/11/26 09:18	1
13C3-3:3 FTCA	103		20 - 150			06/08/26 20:04	06/11/26 09:18	1
13C3-5:3 FTCA	86.1		20 - 150			06/08/26 20:04	06/11/26 09:18	1

Action Limit Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Client Sample ID: BWS2153-S1-AQ

Lab Sample ID: 380-217879-1

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			
Perfluorooctanoic acid (PFOA)	5.1		ng/L	4	1.5	QSM B-24	Total/NA
Perfluorononanoic acid (PFNA)	<1.5		ng/L	10	1.5	QSM B-24	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		ng/L	10	1.5	QSM B-24	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18	I	ng/L	4	1.5	QSM B-24	Total/NA
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<1.1		ng/L	10	1.1	QSM B-24	Total/NA

Isotope Dilution Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (5-130)	PFPeA (40-130)	13C5PHA (40-130)	C4PFHA (40-130)	C8PFOA (40-130)	C9PFNA (40-130)	C6PFDA (40-130)	13C7PUA (30-130)
380-217879-1	BWS2153-S1-AQ	95.4	103	87.1	98.7	96.0	100	89.7	95.5
LCS 320-920826/3-A	Lab Control Sample	95.0	99.8	85.1	93.8	91.8	97.2	92.7	92.3
LCSD 320-920826/4-A	Lab Control Sample Dup	89.6	95.1	87.6	81.9	92.2	101	90.2	97.7
LLCS 320-920826/2-A	Lab Control Sample	89.3	111	86.0	99.2	88.7	91.5	83.6	88.8
MB 320-920826/1-A	Method Blank	91.4	109	93.0	97.9	97.9	105	90.0	88.9

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (10-130)	PFTDA (10-130)	C6PFTTrDA (20-150)	C3PFBS (40-135)	C3PFHS (40-130)	C8PFOS (40-130)	PFOSA (40-130)	d3NMFOS (40-170)
380-217879-1	BWS2153-S1-AQ	98.8	87.0	87.6	94.9	114	95.0	107	121
LCS 320-920826/3-A	Lab Control Sample	95.8	91.6	81.2	107	94.5	102	92.3	118
LCSD 320-920826/4-A	Lab Control Sample Dup	98.2	91.0	93.3	101	99.5	97.4	92.4	112
LLCS 320-920826/2-A	Lab Control Sample	88.8	83.5	77.7	107	96.2	90.5	88.9	105
MB 320-920826/1-A	Method Blank	102	93.0	86.0	111	101	102	94.6	117

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (25-135)	M242FTS (40-200)	M262FTS (40-200)	M282FTS (40-300)	HFPODA (40-130)	NMFM (10-130)	NEFM (10-130)	d5NPFSA (10-130)
380-217879-1	BWS2153-S1-AQ	98.2	146	157	106	78.0	106	98.4	85.3
LCS 320-920826/3-A	Lab Control Sample	107	119	114	106	67.4	91.0	86.9	69.0
LCSD 320-920826/4-A	Lab Control Sample Dup	108	119	132	109	66.5	87.7	83.6	67.6
LLCS 320-920826/2-A	Lab Control Sample	110	110	126	110	72.0	84.3	82.3	67.5
MB 320-920826/1-A	Method Blank	113	121	128	113	67.5	90.3	84.8	70.7

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d3NMFSA (10-130)	3:3:3 FTC/ (20-150)	3:5:3 FTC/ (20-150)
380-217879-1	BWS2153-S1-AQ	93.4	103	86.1
LCS 320-920826/3-A	Lab Control Sample	78.3	92.2	76.2
LCSD 320-920826/4-A	Lab Control Sample Dup	75.5	93.5	77.4
LLCS 320-920826/2-A	Lab Control Sample	75.7	103	81.0
MB 320-920826/1-A	Method Blank	77.8	94.6	83.0

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDaA = 13C2 PFDaA
PFTDA = 13C2 PFTeDA
C6PFTTrDA = 13C6 PFTTrDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 PFOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = 13C2 4:2 FTS

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Isotope Dilution Summary

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

M262FTS = 13C2 6:2 FTS

M282FTS = 13C2 8:2 FTS

HFPODA = 13C3 HFPO-DA

NMFM = d7-N-MeFOSE-M

NEFM = d9-N-EtFOSE-M

d5NPFSA = d5-NEtPFOSA

d3NMFSA = d3-NMePFOSA

C3-3:3 FTCA = 13C3-3:3 FTCA

C3-5:3 FTCA = 13C3-5:3 FTCA

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: MB 320-920826/1-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 920826

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.0		4.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorotridecanoic acid (PFTriDA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorotetradecanoic acid (PFTeDA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorobutanesulfonic acid (PFBS)	<4.0		4.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<4.0		4.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<4.0		4.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<4.0		4.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluorooctanesulfonamide (PFOSA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	<10		10	ng/L		06/08/26 20:04	06/11/26 02:28	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	<10		10	ng/L		06/08/26 20:04	06/11/26 02:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<1.5		1.5	ng/L		06/08/26 20:04	06/11/26 02:28	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: MB 320-920826/1-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 920826

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	<4.0		4.0	ng/L		06/08/26 20:04	06/11/26 02:28	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	<10		10	ng/L		06/08/26 20:04	06/11/26 02:28	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	<10		10	ng/L		06/08/26 20:04	06/11/26 02:28	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	91.4		5 - 130	06/08/26 20:04	06/11/26 02:28	1
13C5 PFPeA	109		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C5 PFHxA	93.0		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C4 PFHpA	97.9		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C8 PFOA	97.9		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C9 PFNA	105		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C6 PFDA	90.0		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C7 PFUnA	88.9		30 - 130	06/08/26 20:04	06/11/26 02:28	1
13C2 PFDoA	102		10 - 130	06/08/26 20:04	06/11/26 02:28	1
13C2 PFTeDA	93.0		10 - 130	06/08/26 20:04	06/11/26 02:28	1
13C6 PFTrDA	86.0		20 - 150	06/08/26 20:04	06/11/26 02:28	1
13C3 PFBS	111		40 - 135	06/08/26 20:04	06/11/26 02:28	1
13C3 PFHxS	101		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C8 PFOS	102		40 - 130	06/08/26 20:04	06/11/26 02:28	1
13C8 PFOSA	94.6		40 - 130	06/08/26 20:04	06/11/26 02:28	1
d3-NMeFOSAA	117		40 - 170	06/08/26 20:04	06/11/26 02:28	1
d5-NEtFOSAA	113		25 - 135	06/08/26 20:04	06/11/26 02:28	1
13C2 4:2 FTS	121		40 - 200	06/08/26 20:04	06/11/26 02:28	1
13C2 6:2 FTS	128		40 - 200	06/08/26 20:04	06/11/26 02:28	1
13C2 8:2 FTS	113		40 - 300	06/08/26 20:04	06/11/26 02:28	1
13C3 HFPO-DA	67.5		40 - 130	06/08/26 20:04	06/11/26 02:28	1
d7-N-MeFOSE-M	90.3		10 - 130	06/08/26 20:04	06/11/26 02:28	1
d9-N-EtFOSE-M	84.8		10 - 130	06/08/26 20:04	06/11/26 02:28	1
d5-NEtPFOSA	70.7		10 - 130	06/08/26 20:04	06/11/26 02:28	1
d3-NMePFOSA	77.8		10 - 130	06/08/26 20:04	06/11/26 02:28	1
13C3-3:3 FTCA	94.6		20 - 150	06/08/26 20:04	06/11/26 02:28	1
13C3-5:3 FTCA	83.0		20 - 150	06/08/26 20:04	06/11/26 02:28	1

Lab Sample ID: LCS 320-920826/3-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	80.0	81.9		ng/L		102	70 - 140
Perfluoropentanoic acid (PFPeA)	40.0	40.7		ng/L		102	65 - 135
Perfluorohexanoic acid (PFHxA)	40.0	44.6		ng/L		112	70 - 145
Perfluoroheptanoic acid (PFHpA)	40.0	40.8		ng/L		102	70 - 150
Perfluorooctanoic acid (PFOA)	40.0	42.2		ng/L		105	70 - 150

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: LCS 320-920826/3-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	40.0	45.8		ng/L		114	70 - 150
Perfluorodecanoic acid (PFDA)	40.0	41.1		ng/L		103	70 - 140
Perfluoroundecanoic acid (PFUnA)	40.0	45.1		ng/L		113	70 - 145
Perfluorododecanoic acid (PFDoA)	40.0	43.2		ng/L		108	70 - 140
Perfluorotridecanoic acid (PFTrDA)	40.0	42.1		ng/L		105	65 - 140
Perfluorotetradecanoic acid (PFTeDA)	40.0	40.8		ng/L		102	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.5	32.9		ng/L		93	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	37.6	42.1		ng/L		112	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	36.5	35.2		ng/L		96	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	38.2	37.3		ng/L		98	70 - 150
Perfluorooctanesulfonic acid (PFOS)	37.2	35.1		ng/L		94	55 - 150
Perfluorononanesulfonic acid (PFNS)	38.5	40.8		ng/L		106	65 - 145
Perfluorodecanesulfonic acid (PFDS)	38.6	40.1		ng/L		104	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	38.8	43.7		ng/L		113	50 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	75.0	91.4		ng/L		122	70 - 145
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	76.2	88.5		ng/L		116	65 - 155
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	76.8	83.2		ng/L		108	60 - 150
Perfluorooctanesulfonamide (PFOSA)	40.0	42.2		ng/L		105	70 - 145
N-methylperfluorooctane sulfonamide (NMeFOSA)	40.0	41.2		ng/L		103	60 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	40.0	44.9		ng/L		112	65 - 145
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.7		ng/L		99	50 - 140
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	41.8		ng/L		104	70 - 145
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	200	208		ng/L		104	70 - 145
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	200	209		ng/L		105	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	30.0	34.4		ng/L		115	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	52.6		ng/L		139	65 - 145
Perfluoro-4-methoxybutanoic acid (PFMBA)	40.0	38.1		ng/L		95	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	40.0	48.5		ng/L		121	50 - 150

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: LCS 320-920826/3-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	40.0	37.1		ng/L		93	55 - 140
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.4	39.5		ng/L		106	70 - 155
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.8	36.8		ng/L		97	55 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	35.7	39.4		ng/L		110	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	80.0	81.2		ng/L		102	65 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	200	234		ng/L		117	70 - 135
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	200	203		ng/L		101	50 - 145

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	95.0		5 - 130
13C5 PFPeA	99.8		40 - 130
13C5 PFHxA	85.1		40 - 130
13C4 PFHpA	93.8		40 - 130
13C8 PFOA	91.8		40 - 130
13C9 PFNA	97.2		40 - 130
13C6 PFDA	92.7		40 - 130
13C7 PFUnA	92.3		30 - 130
13C2 PFDoA	95.8		10 - 130
13C2 PFTeDA	91.6		10 - 130
13C6 PFTrDA	81.2		20 - 150
13C3 PFBS	107		40 - 135
13C3 PFHxS	94.5		40 - 130
13C8 PFOS	102		40 - 130
13C8 PFOSA	92.3		40 - 130
d3-NMeFOSAA	118		40 - 170
d5-NEtFOSAA	107		25 - 135
13C2 4:2 FTS	119		40 - 200
13C2 6:2 FTS	114		40 - 200
13C2 8:2 FTS	106		40 - 300
13C3 HFPO-DA	67.4		40 - 130
d7-N-MeFOSE-M	91.0		10 - 130
d9-N-EtFOSE-M	86.9		10 - 130
d5-NEtPFOSA	69.0		10 - 130
d3-NMePFOSA	78.3		10 - 130
13C3-3:3 FTCA	92.2		20 - 150
13C3-5:3 FTCA	76.2		20 - 150

Lab Sample ID: LCSD 320-920826/4-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	80.0	88.1		ng/L		110	70 - 140	7	30
Perfluoropentanoic acid (PFPeA)	40.0	43.5		ng/L		109	65 - 135	7	30

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: LCSD 320-920826/4-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)	40.0	47.4		ng/L		119	70 - 145	6	30
Perfluoroheptanoic acid (PFHpA)	40.0	47.5		ng/L		119	70 - 150	15	30
Perfluorooctanoic acid (PFOA)	40.0	41.5		ng/L		104	70 - 150	2	30
Perfluorononanoic acid (PFNA)	40.0	40.0		ng/L		100	70 - 150	13	30
Perfluorodecanoic acid (PFDA)	40.0	44.7		ng/L		112	70 - 140	8	30
Perfluoroundecanoic acid (PFUnA)	40.0	45.8		ng/L		115	70 - 145	2	30
Perfluorododecanoic acid (PFDoA)	40.0	44.8		ng/L		112	70 - 140	4	30
Perfluorotridecanoic acid (PFTrDA)	40.0	43.9		ng/L		110	65 - 140	4	30
Perfluorotetradecanoic acid (PFTeDA)	40.0	45.2		ng/L		113	60 - 140	10	30
Perfluorobutanesulfonic acid (PFBS)	35.5	37.0		ng/L		104	60 - 145	12	30
Perfluoropentanesulfonic acid (PFPeS)	37.6	41.2		ng/L		110	65 - 140	2	30
Perfluorohexanesulfonic acid (PFHxS)	36.5	36.4		ng/L		100	65 - 145	3	30
Perfluoroheptanesulfonic acid (PFHpS)	38.2	37.7		ng/L		99	70 - 150	1	30
Perfluorooctanesulfonic acid (PFOS)	37.2	37.1		ng/L		100	55 - 150	6	30
Perfluorononanesulfonic acid (PFNS)	38.5	42.0		ng/L		109	65 - 145	3	30
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	60 - 145	1	30
Perfluorododecanesulfonic acid (PFDoS)	38.8	48.1		ng/L		124	50 - 145	10	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	75.0	94.3		ng/L		126	70 - 145	3	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	76.2	88.9		ng/L		117	65 - 155	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	76.8	85.5		ng/L		111	60 - 150	3	30
Perfluorooctanesulfonamide (PFOSA)	40.0	43.4		ng/L		109	70 - 145	3	30
N-methylperfluorooctane sulfonamide (NMeFOSA)	40.0	44.5		ng/L		111	60 - 150	8	30
N-ethylperfluorooctane sulfonamide (NEtFOSA)	40.0	46.6		ng/L		116	65 - 145	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	41.4		ng/L		103	50 - 140	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	43.3		ng/L		108	70 - 145	4	30
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	200	224		ng/L		112	70 - 145	7	30
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	200	220		ng/L		110	70 - 135	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	30.0	36.3		ng/L		121	70 - 140	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	55.8	*+	ng/L		148	65 - 145	6	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	40.0	43.4		ng/L		108	60 - 150	13	30

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: LCSD 320-920826/4-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	40.0	50.2		ng/L		125	50 - 150	3	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	40.0	41.0		ng/L		103	55 - 140	10	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	37.4	41.3		ng/L		110	70 - 155	4	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	37.8	40.8		ng/L		108	55 - 160	10	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	35.7	37.5		ng/L		105	70 - 140	5	30
3-Perfluoropropylpropanoic acid (3:3 FTCA)	80.0	82.7		ng/L		103	65 - 130	2	30
3-Perfluoropentylpropanoic acid (5:3 FTCA)	200	249		ng/L		125	70 - 135	6	30
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	200	207		ng/L		103	50 - 145	2	30
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits						
13C4 PFBA	89.6		5 - 130						
13C5 PFPeA	95.1		40 - 130						
13C5 PFHxA	87.6		40 - 130						
13C4 PFHpA	81.9		40 - 130						
13C8 PFOA	92.2		40 - 130						
13C9 PFNA	101		40 - 130						
13C6 PFDA	90.2		40 - 130						
13C7 PFUnA	97.7		30 - 130						
13C2 PFDoA	98.2		10 - 130						
13C2 PFTeDA	91.0		10 - 130						
13C6 PFTrDA	93.3		20 - 150						
13C3 PFBS	101		40 - 135						
13C3 PFHxS	99.5		40 - 130						
13C8 PFOS	97.4		40 - 130						
13C8 PFOSA	92.4		40 - 130						
d3-NMeFOSAA	112		40 - 170						
d5-NEtFOSAA	108		25 - 135						
13C2 4:2 FTS	119		40 - 200						
13C2 6:2 FTS	132		40 - 200						
13C2 8:2 FTS	109		40 - 300						
13C3 HFPO-DA	66.5		40 - 130						
d7-N-MeFOSE-M	87.7		10 - 130						
d9-N-EtFOSE-M	83.6		10 - 130						
d5-NEtPFOSA	67.6		10 - 130						
d3-NMePFOSA	75.5		10 - 130						
13C3-3:3 FTCA	93.5		20 - 150						
13C3-5:3 FTCA	77.4		20 - 150						

QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: LLCS 320-920826/2-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	9.10		ng/L		114	70 - 140
Perfluoropentanoic acid (PFPeA)	4.00	4.24		ng/L		106	65 - 135
Perfluorohexanoic acid (PFHxA)	4.00	5.10		ng/L		127	70 - 145
Perfluoroheptanoic acid (PFHpA)	4.00	4.50		ng/L		112	70 - 150
Perfluorooctanoic acid (PFOA)	4.00	4.71		ng/L		118	70 - 150
Perfluorononanoic acid (PFNA)	4.00	4.40		ng/L		110	70 - 150
Perfluorodecanoic acid (PFDA)	4.00	4.94		ng/L		124	70 - 140
Perfluoroundecanoic acid (PFUnA)	4.00	4.71		ng/L		118	70 - 145
Perfluorododecanoic acid (PFDoA)	4.00	4.62		ng/L		115	70 - 140
Perfluorotridecanoic acid (PFTrDA)	4.00	4.75		ng/L		119	65 - 140
Perfluorotetradecanoic acid (PFTeDA)	4.00	3.93		ng/L		98	60 - 140
Perfluorobutanesulfonic acid (PFBS)	3.55	4.71		ng/L		133	60 - 145
Perfluoropentanesulfonic acid (PFPeS)	3.76	4.10		ng/L		109	65 - 140
Perfluorohexanesulfonic acid (PFHxS)	3.65	3.70		ng/L		101	65 - 145
Perfluoroheptanesulfonic acid (PFHpS)	3.82	4.27		ng/L		112	70 - 150
Perfluorooctanesulfonic acid (PFOS)	3.72	4.36		ng/L		117	55 - 150
Perfluorononanesulfonic acid (PFNS)	3.85	4.40		ng/L		114	65 - 145
Perfluorodecanesulfonic acid (PFDS)	3.86	4.35		ng/L		113	60 - 145
Perfluorododecanesulfonic acid (PFDoS)	3.88	4.51		ng/L		116	50 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	7.50	9.87		ng/L		131	70 - 145
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	7.62	9.56		ng/L		126	65 - 155
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	7.68	9.39		ng/L		122	60 - 150
Perfluorooctanesulfonamide (PFOSA)	4.00	4.54		ng/L		113	70 - 145
N-methylperfluorooctane sulfonamide (NMeFOSA)	4.00	4.38		ng/L		110	60 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	4.00	4.83		ng/L		121	65 - 145
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	4.00	4.49		ng/L		112	50 - 140
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	4.00	4.42		ng/L		111	70 - 145
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	20.0	22.2		ng/L		111	70 - 145
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	20.0	22.1		ng/L		111	70 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	3.00	3.40		ng/L		113	70 - 140

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QC Sample Results

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Lab Sample ID: LLCS 320-920826/2-A

Matrix: Water

Analysis Batch: 921126

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 920826

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	3.78	5.67	*+	ng/L		150	65 - 145
Perfluoro-4-methoxybutanoic acid (PFMBA)	4.00	4.06		ng/L		101	60 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	4.00	5.02		ng/L		125	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	4.00	3.90		ng/L		98	55 - 140
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	3.74	4.19		ng/L		112	70 - 155
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	3.78	4.42		ng/L		117	55 - 160
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	3.57	4.61		ng/L		129	70 - 140
3-Perfluoropropylpropanoic acid (3:3 FTCA)	8.00	8.53		ng/L		107	65 - 130
3-Perfluoropentylpropanoic acid (5:3 FTCA)	20.0	26.7		ng/L		134	70 - 135
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	20.0	22.0		ng/L		110	50 - 145

Isotope Dilution	LLCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	89.3		5 - 130
13C5 PFPeA	111		40 - 130
13C5 PFHxA	86.0		40 - 130
13C4 PFHpA	99.2		40 - 130
13C8 PFOA	88.7		40 - 130
13C9 PFNA	91.5		40 - 130
13C6 PFDA	83.6		40 - 130
13C7 PFUnA	88.8		30 - 130
13C2 PFDoA	88.8		10 - 130
13C2 PFTeDA	83.5		10 - 130
13C6 PFTriDA	77.7		20 - 150
13C3 PFBS	107		40 - 135
13C3 PFHxS	96.2		40 - 130
13C8 PFOS	90.5		40 - 130
13C8 PFOSA	88.9		40 - 130
d3-NMeFOSAA	105		40 - 170
d5-NEtFOSAA	110		25 - 135
13C2 4:2 FTS	110		40 - 200
13C2 6:2 FTS	126		40 - 200
13C2 8:2 FTS	110		40 - 300
13C3 HFPO-DA	72.0		40 - 130
d7-N-MeFOSE-M	84.3		10 - 130
d9-N-EtFOSE-M	82.3		10 - 130
d5-NEtPFOSA	67.5		10 - 130
d3-NMePFOSA	75.7		10 - 130
13C3-3:3 FTCA	103		20 - 150
13C3-5:3 FTCA	81.0		20 - 150

QC Association Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

LCMS

Prep Batch: 920826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-217879-1	BWS2153-S1-AQ	Total/NA	Water	1633	
MB 320-920826/1-A	Method Blank	Total/NA	Water	1633	
LCS 320-920826/3-A	Lab Control Sample	Total/NA	Water	1633	
LCSD 320-920826/4-A	Lab Control Sample Dup	Total/NA	Water	1633	
LLCS 320-920826/2-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 921126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-217879-1	BWS2153-S1-AQ	Total/NA	Water	QSM B-24	920826
MB 320-920826/1-A	Method Blank	Total/NA	Water	QSM B-24	920826
LCS 320-920826/3-A	Lab Control Sample	Total/NA	Water	QSM B-24	920826
LCSD 320-920826/4-A	Lab Control Sample Dup	Total/NA	Water	QSM B-24	920826
LLCS 320-920826/2-A	Lab Control Sample	Total/NA	Water	QSM B-24	920826

Lab Chronicle

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Client Sample ID: BWS2153-S1-AQ
Date Collected: 06/03/26 08:30
Date Received: 06/04/26 09:10

Lab Sample ID: 380-217879-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633			920826	EBH	EET SAC	06/08/26 20:04
Total/NA	Analysis	QSM B-24		1	921126	C1P	EET SAC	06/11/26 09:18

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA00044	06-30-26
Alaska (UST)	State	17-020	02-22-27
ANAB	Dept. of Defense ELAP	L2468	01-20-27
ANAB	Dept. of Energy	L2468.01	01-20-27
ANAB	ISO/IEC 17025	L2468.03	01-20-27
Arizona	State	AZ0708	08-11-26
Arkansas DEQ	State	88-0691	05-17-27
California	State	2897	01-31-28
Colorado	State	CA00044	08-31-26
Florida	NELAP	E87570	06-30-26
Georgia	State	4040	01-29-27
Illinois	NELAP	200060	03-31-27
Kansas	NELAP	E-10375	10-31-26
Louisiana	NELAP	01944	06-30-26
Louisiana (All)	NELAP	01944	06-30-26
Maine	State	CA00004	04-14-28
Massachusetts	State	M-CA044	06-30-26
Michigan	State	9947	08-03-26
Minnesota	NELAP	006-999-474	12-31-26
Nevada	State	CA00044	07-31-26
New Jersey	NELAP	CA005	06-30-26
New York	NELAP	11666	04-01-27
Ohio	State	41252	01-29-27
Oregon	NELAP	4040	01-29-27
Texas	NELAP	T104704399-23-17	05-31-27
US Fish & Wildlife	US Federal Programs	A22139	04-30-27
USDA	US Federal Programs	525-23-59-76739	03-01-27
Utah	NELAP	CA000442023-16	02-28-27
Virginia	NELAP	460278	09-30-26
Washington	State	C581	05-06-27
West Virginia (DW)	State	9930C	01-31-27
West Virginia DEP	State	422	07-31-26
Wisconsin	State	998204680	08-31-26
Wyoming	State Program	8TMS-L	01-28-19 *

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

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Method Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

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

Protocol References:

DoD 6.0 = Department of Defense Quality Systems Manual V6.0
EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-217879-1
SDG: Site S1 PFAS 1633

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
380-217879-1	BWS2153-S1-AQ	Water	06/03/26 08:30	06/04/26 09:10	Hawaii

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

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

Chain of Custody Record



Client Information		Sampler: H. Bentley (808) 321-0683		Lab Pkt: Lopez, Maria	Carrier Tracking No(s):	COC No:
Client Contact: Mr. Erwin Kawata		Phone: 858-205-0730		E-Mail: Maria.Lopez@eurofins.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: City & County of Honolulu		PWSID:		Analysis Requested		
Address: 630 South Beretania Street		Due Date Requested		Preservation Codes: A - HCL N - None		
City: Honolulu		TAT Requested (days): Standard		Other:		
State Zip: HI, 96843		Compliance Project: ☒ Yes ☐ No		Total Number of Containers		
Phone: 808-748-5066		PO #:		Special Instructions/Note:		
Email: ekawata@hbws.org		WO #:		BILL TO POMONA EEA		
Project Name: INTERA - Red-Hill-Incident		Project #: 38000861		380-217879 COC		
Site: S1		SSOW#:				
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=volatile, BT=tissue, AM=air, DW=drinking water)	
BWS2153-S1-AQ	6/12/26	8:30	G		Water	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Polson B ☐ Unknown ☐ Radiological						
Deliverable Requested: I, II, III, IV, Other (specify)						
Empty Kit Relinquished by						
Relinquished by		Date: 6/12/26	Time: 14:00	Company: INTERA	Received by: [Signature]	Date/Time: 6/12/26 0910
Relinquished by		Date/Time:		Company:	Received by:	Company:
Relinquished by		Date/Time:		Company:	Received by:	Company:
Custody Seals Intact: ☒ No		Custody Seal No.: Seal		Cooler Temperature(s) °C and Other Remarks: 1.0 °C		

Chain of Custody Record

Client Information		Sampler H Bentley (806) 321-0683		Lab PM Lopez, Maria	Carrier Tracking No(s)	COC No
Client Contact Mr Erwin Kawata		Phone 858-205-0730		E-Mail: Maria Lopez@et.eurofinsus.com	State of Origin Hawaii	Page: Page 1 of 1
Company City & County of Honolulu		PWSID:		Analysis Requested		
Address: 630 South Beretania Street		Due Date Requested		Preservation Codes. A - HCL N - None		
City Honolulu		TAT Requested (days) Standard		Other		
State, Zip HI, 96843		Compliance Project: ☐ Yes ☒ No		Total Number of containers		
Phone 808-748-5066		PO #:		1633 DDB - EPA Method 1633 Std List		
Email: ekawata@hbws.org		WO #:		Field Filtered Sample (Yes or No)		
Project Name: INTERA - Red-Hill-Incident		Project #: 38000861		Perform MS/MSD (Yes or No)		
Site S1		SSOW#:		1633 DDB - EPA Method 1633 Std List		
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Soil, Sediment, Organic, Inorganic, Benthic, Air, Dredging, Water)	Special Instructions/Note:
BWS2153-S1-AQ		6/13/20	8:30	G	Water	BILL TO POMONA EEA
380-217879 Chain of Custody						
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological						
Deliverable Requested 1, II, III IV, Other (specify)						
Empty Kit Relinquished by						
Relinquished by		Date/Time: 6/13/20 14:00		Date/Time: 6/13/20 09:10		
Relinquished by		Date/Time:		Date/Time:		
Relinquished by		Date/Time:		Date/Time:		
Custody Seal Intact: ☒ Yes ☐ No		Custody Seal No. <u>Seal</u>		Cooler Temperature(s) °C and Other Remarks: <u>1.0°C</u>		

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-217879-1
SDG Number: Site S1 PFAS 1633

Login Number: 217879

List Number: 1

Creator: Ngo, Theodore

List Source: Eurofins Pomona

Question	Answer	Comment
The coolers custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler(s) Temperature is acceptable.	True	
Cooler(s) Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and is legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
CIO4 headspace requirement met (>50% for CA, >30% for other states).	N/A	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-217879-1
SDG Number: Site S1 PFAS 1633

Login Number: 217879

List Number: 2

Creator: Morazzini, Dominic S

List Source: Eurofins Sacramento

List Creation: 06/04/26 05:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	