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ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-100702-1

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

See page two for job notes and contact information.

Job Notes

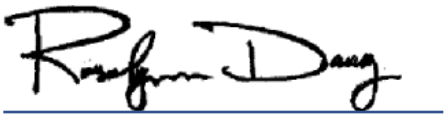
This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-100702-1

Qualifiers

LCMS

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

Glossary

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

Job Narrative
380-100702-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 6/20/2024 10:20 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 3.3°C.

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

PFAS
EPA 537.1 and EPA 533 are two distinct methods for the analysis of PFAS in drinking water. The analyses are conducted on differing instrumentation, with calibrations, extraction solvents and sample preservatives being dissimilar among the two methods. Therefore it is probable and not unexpected to see the methods having slight variations in analytical results.

Detection Summary

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

Job ID: 380-100702-1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-100702-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.021		0.0099		ug/L	1		525.2	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0		ng/L	1		533	Total/NA

Client Sample ID: FB: MOANALUA WELLS — Lab Sample ID: 380-100702-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-100702-1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/18/24 11:05
Date Received: 06/20/24 10:20

Lab Sample ID: 380-100702-1
Matrix: Water

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
2,4'-DDD	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
2,4'-DDE	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
2,4'-DDT	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
2,4-Dinitrotoluene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
2,6-Dinitrotoluene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
2-Methylnaphthalene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
4,4'-DDD	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
4,4'-DDE	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
4,4'-DDT	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Acenaphthene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Acenaphthylene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Acetochlor	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Alachlor	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
alpha-BHC	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
alpha-Chlordane	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Anthracene	<0.020		0.020		ug/L		06/21/24 08:40	06/24/24 12:14	1
Atrazine	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Benz(a)anthracene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Benzo[a]pyrene	<0.020		0.020		ug/L		06/21/24 08:40	06/24/24 12:14	1
Benzo[b]fluoranthene	<0.020		0.020		ug/L		06/21/24 08:40	06/24/24 12:14	1
Benzo[g,h,i]perylene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Benzo[k]fluoranthene	<0.020		0.020		ug/L		06/21/24 08:40	06/24/24 12:14	1
beta-BHC	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59		ug/L		06/21/24 08:40	06/24/24 12:14	1
Bromacil	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Butachlor	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Butylbenzylphthalate	<0.49		0.49		ug/L		06/21/24 08:40	06/24/24 12:14	1
Chlorobenzilate	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Chloroneb	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Chlorpyrifos	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Chrysene	<0.020		0.020		ug/L		06/21/24 08:40	06/24/24 12:14	1
delta-BHC	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Di(2-ethylhexyl)adipate	<0.59		0.59		ug/L		06/21/24 08:40	06/24/24 12:14	1
Dibenz(a,h)anthracene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Diclorvos (DDVP)	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Dieldrin	**0.021**		0.0099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Diethylphthalate	<0.49		0.49		ug/L		06/21/24 08:40	06/24/24 12:14	1
Dimethylphthalate	<0.49		0.49		ug/L		06/21/24 08:40	06/24/24 12:14	1
Di-n-butyl phthalate	<0.99		0.99		ug/L		06/21/24 08:40	06/24/24 12:14	1
Di-n-octyl phthalate	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Endosulfan I (Alpha)	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Endosulfan II (Beta)	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Endosulfan sulfate	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Endrin	<0.0099		0.0099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Endrin aldehyde	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
EPTC	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Fluoranthene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1

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

Job ID: 380-100702-1

Client Sample ID: MOANALUA WELLS
Date Collected: 06/18/24 11:05
Date Received: 06/20/24 10:20

Lab Sample ID: 380-100702-1
Matrix: Water

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
gamma-Chlordane	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Heptachlor	<0.0099		0.0099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Heptachlor epoxide (isomer B)	<0.0099		0.0099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Hexachlorobenzene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Hexachlorocyclopentadiene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Isophorone	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Lindane	<0.0099		0.0099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Malathion	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Methoxychlor	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Metolachlor	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Molinate	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Naphthalene	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Parathion	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Pendimethalin (Penoxaline)	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Phenanthrene	<0.039		0.039		ug/L		06/21/24 08:40	06/24/24 12:14	1
Propachlor	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Pyrene	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Simazine	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Terbacil	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Terbuthylazine	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Thiobencarb	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1
Total Permethrin (mixed isomers)	<0.20		0.20		ug/L		06/21/24 08:40	06/24/24 12:14	1
trans-Nonachlor	<0.049		0.049		ug/L		06/21/24 08:40	06/24/24 12:14	1
Trifluralin	<0.099		0.099		ug/L		06/21/24 08:40	06/24/24 12:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*06/21/24 08:40*	*06/24/24 12:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*98*		*70 - 130*	*06/21/24 08:40*	*06/24/24 12:14*	*1*
Perylene-d12	*96*		*70 - 130*	*06/21/24 08:40*	*06/24/24 12:14*	*1*
Triphenylphosphate	*103*		*70 - 130*	*06/21/24 08:40*	*06/24/24 12:14*	*1*

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1

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

Job ID: 380-100702-1

Client Sample ID: MOANALUA WELLS

Date Collected: 06/18/24 11:05
Date Received: 06/20/24 10:20

Lab Sample ID: 380-100702-1

Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/21/24 06:15	06/21/24 22:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*78*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C6 PFDA	*85*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C5 PFHxA	*82*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C4 PFHpA	*86*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C8 PFOA	*86*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C9 PFNA	*83*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C7 PFUnA	*83*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C2 PFDoA	*82*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C4 PFBA	*88*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C5 PFPeA	*97*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C3 PFBS	*105*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C3 PFHxS	*116*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C8 PFOS	*104*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C2-4:2-FTS	*154*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C2-6:2-FTS	*154*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*1*
13C2-8:2-FTS	*120*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:49*	*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		06/21/24 05:46	06/21/24 23:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-100702-1

Date Collected: 06/18/24 11:05

Matrix: Water

Date Received: 06/20/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:33*	*1*
13C2 PFHxA	*108*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:33*	*1*
13C2 PFDA	*109*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:33*	*1*
13C3-GenX	*106*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:33*	*1*

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-100702-2

Date Collected: 06/18/24 11:05

Matrix: Water

Date Received: 06/20/24 10:20

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1

Client Sample ID: FB: MOANALUA WELLS
Date Collected: 06/18/24 11:05
Date Received: 06/20/24 10:20

Lab Sample ID: 380-100702-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	2 0		2 0		ng/L		06/21/24 06 15	06/22/24 01 22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		06/21/24 06:15	06/22/24 01:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*90*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C6 PFDA	*102*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C5 PFHxA	*95*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C4 PFHpA	*105*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C8 PFOA	*111*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C9 PFNA	*106*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C7 PFUnA	*96*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C2 PFDoA	*96*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C4 PFBA	*107*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C5 PFPeA	*118*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C3 PFBS	*106*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C3 PFHxS	*113*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C8 PFOS	*106*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C2-4:2-FTS	*140*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C2-6:2-FTS	*139*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*1*
13C2-8:2-FTS	*117*		*50 - 200*	*06/21/24 06:15*	*06/22/24 01:22*	*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		06/21/24 05:46	06/21/24 23:43	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1

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

Job ID: 380-100702-1

Client Sample ID: FB: MOANALUA WELLS
Date Collected: 06/18/24 11:05
Date Received: 06/20/24 10:20

Lab Sample ID: 380-100702-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0		ng/L		06/21/24 05:46	06/21/24 23:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*99*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:43*	*1*
13C2 PFHxA	*106*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:43*	*1*
13C2 PFDA	*109*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:43*	*1*
13C3-GenX	*103*		*70 - 130*	*06/21/24 05:46*	*06/21/24 23:43*	*1*

Action Limit Summary

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

Job ID: 380-100702-1

Client Sample ID: MOANALUA WELLS — Lab Sample ID: 380-100702-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.0099		ug/L	2	0.0099	525.2	Total/NA
Heptachlor	<0.0099		ug/L	0.4	0.0099	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.0099		ug/L	0.2	0.0099	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.0099		ug/L	0.2	0.0099	525.2	Total/NA
Methoxychlor	<0.049		ug/L	40	0.049	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA
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)	2.1		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: FB: MOANALUA WELLS — Lab Sample ID: 380-100702-2

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

Surrogate Summary

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

Job ID: 380-100702-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	PRY	TPP
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-100702-1	MOANALUA WELLS	98	96	103
LCS 380-96040/24-A	Lab Control Sample	96	93	103

Surrogate Legend

2NMX = 2-Nitro-m-xylene
PRY = Perylene-d12
TPP = Triphenylphosphate

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	GenX
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
380-100658-B-1-A LMS	Matrix Spike	107	106	109	106
380-100658-C-1-A LMSD	Matrix Spike Duplicate	105	110	110	108
380-100702-1	MOANALUA WELLS	106	108	109	106
380-100702-2	FB: MOANALUA WELLS	99	106	109	103
LCS 380-96036/23-A	Lab Control Sample	101	101	104	101
MBL 380-96036/21-A	Method Blank	99	105	102	100
MRL 380-96036/22-A	Lab Control Sample	98	101	103	99

Surrogate Legend

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

Isotope Dilution Summary

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

Job ID: 380-100702-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-100702-1	MOANALUA WELLS	78	85	82	86	86	83	83	82
380-100702-1 MS	MOANALUA WELLS	87	99	87	95	99	99	92	91
380-100702-1 MSD	MOANALUA WELLS	90	99	85	91	97	96	91	91
380-100702-2	FB: MOANALUA WELLS	90	102	95	105	111	106	96	96
LCS 380-96038/22-A	Lab Control Sample	97	106	98	106	114	108	100	98
MBL 380-96038/20-A	Method Blank	99	103	100	107	112	106	96	93
MRL 380-96038/21-A	Lab Control Sample	96	110	103	112	114	112	101	99

		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)
380-100702-1	MOANALUA WELLS	88	97	105	116	104	154	154	120
380-100702-1 MS	MOANALUA WELLS	98	108	109	122	106	141	139	126
380-100702-1 MSD	MOANALUA WELLS	93	103	106	115	108	139	144	123
380-100702-2	FB: MOANALUA WELLS	107	118	106	113	106	140	139	117
LCS 380-96038/22-A	Lab Control Sample	109	120	105	117	105	137	138	121
MBL 380-96038/20-A	Method Blank	103	113	104	115	104	145	148	121
MRL 380-96038/21-A	Lab Control Sample	105	117	109	121	108	151	148	122

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: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 380-96040/24-A
Matrix: Water
Analysis Batch: 96283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96040

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.98	1.95		ug/L		98	70 - 130
2,4'-DDD	1.98	2.06		ug/L		104	70 - 130
2,4'-DDE	1.98	1.90		ug/L		96	70 - 130
2,4'-DDT	1.98	2.10		ug/L		106	70 - 130
2,4-Dinitrotoluene	1.98	1.93		ug/L		97	70 - 130
2,6-Dinitrotoluene	1.98	1.88		ug/L		95	70 - 130
2-Methylnaphthalene	1.98	1.95		ug/L		98	70 - 130
4,4'-DDD	1.98	1.93		ug/L		97	70 - 130
4,4'-DDE	1.98	1.95		ug/L		98	70 - 130
4,4'-DDT	1.98	1.83		ug/L		92	70 - 130
Acenaphthene	1.98	1.82		ug/L		92	70 - 130
Acenaphthylene	1.98	2.03		ug/L		102	70 - 130
Acetochlor	1.98	1.96		ug/L		99	70 - 130
Alachlor	1.98	1.91		ug/L		96	70 - 130
alpha-BHC	1.98	1.84		ug/L		93	70 - 130
alpha-Chlordane	1.98	1.91		ug/L		96	70 - 130
Anthracene	1.98	1.75		ug/L		88	70 - 130
Atrazine	1.98	2.12		ug/L		107	70 - 130
Benz(a)anthracene	1.98	1.71		ug/L		86	70 - 130
Benzo[a]pyrene	1.98	2.01		ug/L		101	70 - 130
Benzo[b]fluoranthene	1.98	2.06		ug/L		104	70 - 130
Benzo[g,h,i]perylene	1.98	2.08		ug/L		105	70 - 130
Benzo[k]fluoranthene	1.98	2.21		ug/L		111	70 - 130
beta-BHC	1.98	1.85		ug/L		93	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.13		ug/L		107	70 - 130
Bromacil	1.98	2.06		ug/L		104	70 - 130
Butachlor	1.98	2.01		ug/L		101	70 - 130
Butylbenzylphthalate	1.98	2.03		ug/L		102	70 - 130
Chlorobenzilate	1.98	1.67		ug/L		84	70 - 130
Chloroneb	1.98	1.97		ug/L		99	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.13		ug/L		108	70 - 130
Chlorpyrifos	1.98	2.02		ug/L		102	70 - 130
Chrysene	1.98	2.08		ug/L		105	70 - 130
delta-BHC	1.98	1.78		ug/L		90	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.04		ug/L		103	70 - 130
Dibenz(a,h)anthracene	1.98	2.02		ug/L		102	70 - 130
Diclorvos (DDVP)	1.98	2.06		ug/L		104	70 - 130
Dieldrin	1.98	1.75		ug/L		88	70 - 130
Diethylphthalate	1.98	1.99		ug/L		100	70 - 130
Dimethylphthalate	1.98	2.02		ug/L		102	70 - 130
Di-n-butyl phthalate	3.97	4.02		ug/L		101	70 - 130
Di-n-octyl phthalate	1.98	1.91		ug/L		96	70 - 130
Endosulfan I (Alpha)	1.98	1.77		ug/L		89	70 - 130
Endosulfan II (Beta)	1.98	1.84		ug/L		93	70 - 130
Endosulfan sulfate	1.98	1.90		ug/L		96	70 - 130
Endrin	1.98	1.75		ug/L		88	70 - 130
Endrin aldehyde	1.98	1.26		ug/L		64	60 - 130
EPTC	1.98	2.20		ug/L		111	70 - 130

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 380-96040/24-A
Matrix: Water
Analysis Batch: 96283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96040

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	1.98	1.98		ug/L		100	70 - 130
Fluorene	1.98	2.03		ug/L		103	70 - 130
gamma-Chlordane	1.98	1.99		ug/L		100	70 - 130
Heptachlor	1.98	1.91		ug/L		96	70 - 130
Heptachlor epoxide (isomer B)	1.98	1.91		ug/L		96	70 - 130
Hexachlorobenzene	1.98	1.86		ug/L		94	70 - 130
Hexachlorocyclopentadiene	1.98	1.75		ug/L		88	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.07		ug/L		104	70 - 130
Isophorone	1.98	2.03		ug/L		102	70 - 130
Lindane	1.98	1.87		ug/L		94	70 - 130
Malathion	1.98	1.98		ug/L		100	70 - 130
Methoxychlor	1.98	2.08		ug/L		105	70 - 130
Metolachlor	1.98	2.04		ug/L		103	70 - 130
Molinate	1.98	2.09		ug/L		105	70 - 130
Naphthalene	1.98	1.80		ug/L		91	70 - 130
Parathion	1.98	2.08		ug/L		105	70 - 130
Pendimethalin (Penoxaline)	1.98	1.90		ug/L		96	70 - 130
Phenanthrene	1.98	1.80		ug/L		91	70 - 130
Propachlor	1.98	2.04		ug/L		103	70 - 130
Pyrene	1.98	2.01		ug/L		101	70 - 130
Simazine	1.98	2.09		ug/L		105	70 - 130
Terbacil	1.98	1.88		ug/L		95	70 - 130
Terbuthylazine	1.98	2.13		ug/L		108	70 - 130
Thiobencarb	1.98	2.31		ug/L		117	70 - 130
trans-Nonachlor	1.98	1.99		ug/L		100	70 - 130
Trifluralin	1.98	1.86		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*96*		*70 - 130*
Perylene-d12	*93*		*70 - 130*
Triphenylphosphate	*103*		*70 - 130*

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

Lab Sample ID: MBL 380-96038/20-A
Matrix: Water
Analysis Batch: 96150

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96038

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/21/24 06:15	06/21/24 22:20	1

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

Lab Sample ID: MBL 380-96038/20-A
Matrix: Water
Analysis Batch: 96150

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96038

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0		ng/L		06/21/24 06:15	06/21/24 22:20	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*99*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C6 PFDA	*103*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C5 PFHxA	*100*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C4 PFHpA	*107*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C8 PFOA	*112*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C9 PFNA	*106*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C7 PFUnA	*96*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C2 PFDoA	*93*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C4 PFBA	*103*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C5 PFPeA	*113*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C3 PFBS	*104*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C3 PFHxS	*115*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C8 PFOS	*104*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C2-4:2-FTS	*145*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C2-6:2-FTS	*148*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*
13C2-8:2-FTS	*121*		*50 - 200*	*06/21/24 06:15*	*06/21/24 22:20*	*1*

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

Lab Sample ID: LCS 380-96038/22-A
Matrix: Water
Analysis Batch: 96150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96038

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	103		ng/L		85	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	109		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	106		ng/L		88	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	110		ng/L		91	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	117		ng/L		98	70 - 130
Perfluorodecanoic acid (PFDA)	120	110		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	120	114		ng/L		95	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	111		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	106		ng/L		89	70 - 130
Perfluorohexanoic acid (PFHxA)	120	114		ng/L		95	70 - 130
Perfluorononanoic acid (PFNA)	120	110		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	113		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	120	107		ng/L		89	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	118		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	120	113		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	109		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	107		ng/L		89	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	116		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	113		ng/L		94	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	109		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	113		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	108		ng/L		90	70 - 130
Perfluoropentanoic acid (PFPeA)	120	99.6		ng/L		83	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	112		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	104		ng/L		86	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 HFPO-DA	*97*		*50 - 200*
13C6 PFDA	*106*		*50 - 200*
13C5 PFHxA	*98*		*50 - 200*
13C4 PFHpA	*106*		*50 - 200*
13C8 PFOA	*114*		*50 - 200*
13C9 PFNA	*108*		*50 - 200*

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

Lab Sample ID: LCS 380-96038/22-A
Matrix: Water
Analysis Batch: 96150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96038

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C7 PFUnA	100		50 - 200
13C2 PFDoA	98		50 - 200
13C4 PFBA	109		50 - 200
13C5 PFPeA	120		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	117		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	137		50 - 200
13C2-6:2-FTS	138		50 - 200
13C2-8:2-FTS	121		50 - 200

Lab Sample ID: MRL 380-96038/21-A
Matrix: Water
Analysis Batch: 96150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96038

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.63	J	ng/L		81	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.69	J	ng/L		84	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.70	J	ng/L		85	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	1.74	J	ng/L		86	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.92	J	ng/L		95	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.74	J	ng/L		86	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.89	J	ng/L		94	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.84	J	ng/L		91	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.83	J	ng/L		91	50 - 150
Perfluorononanoic acid (PFNA)	2.01	1.85	J	ng/L		92	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	2.07	J	ng/L		103	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.80	J	ng/L		89	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.93	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.85	J	ng/L		92	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	1.83	J	ng/L		91	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	1.89	J	ng/L		94	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	1.85	J	ng/L		92	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	1.76	J	ng/L		87	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.01	1.67	J	ng/L		83	50 - 150

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

Lab Sample ID: MRL 380-96038/21-A
Matrix: Water
Analysis Batch: 96150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96038

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluoro-3-methoxypropanoic acid (PFMPA)			2.01	1.91	J	ng/L		95	50 - 150		
Perfluoro-4-methoxybutanoic acid (PFMBA)			2.01	1.68	J	ng/L		83	50 - 150		
Perfluoropentanoic acid (PFPeA)			2.01	1.82	J	ng/L		91	50 - 150		
Perfluoroheptanesulfonic acid (PFHpS)			2.01	1.85	J	ng/L		92	50 - 150		
Perfluoropentanesulfonic acid (PFPeS)			2.01	1.65	J	ng/L		82	50 - 150		

Isotope Dilution	*MRL %Recovery*	*MRL Qualifier*	*Limits*
13C3 HFPO-DA	*96*		*50 - 200*
13C6 PFDA	*110*		*50 - 200*
13C5 PFHxA	*103*		*50 - 200*
13C4 PFHpA	*112*		*50 - 200*
13C8 PFOA	*114*		*50 - 200*
13C9 PFNA	*112*		*50 - 200*
13C7 PFUnA	*101*		*50 - 200*
13C2 PFDoA	*99*		*50 - 200*
13C4 PFBA	*105*		*50 - 200*
13C5 PFPeA	*117*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*121*		*50 - 200*
13C8 PFOS	*108*		*50 - 200*
13C2-4:2-FTS	*151*		*50 - 200*
13C2-6:2-FTS	*148*		*50 - 200*
13C2-8:2-FTS	*122*		*50 - 200*

Lab Sample ID: 380-100702-1 MS
Matrix: Water
Analysis Batch: 96150

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 96038

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		121	103		ng/L		85	70 - 130		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	109		ng/L		90	70 - 130		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	101		ng/L		84	70 - 130		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	109		ng/L		91	70 - 130		
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	114		ng/L		94	70 - 130		
Perfluorodecanoic acid (PFDA)	<2.0		121	113		ng/L		93	70 - 130		
Perfluorododecanoic acid (PFDoA)	<2.0		121	112		ng/L		92	70 - 130		
Perfluoroheptanoic acid (PFHpA)	<2.0		121	110		ng/L		91	70 - 130		
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	107		ng/L		88	70 - 130		
Perfluorohexanoic acid (PFHxA)	<2.0		121	117		ng/L		96	70 - 130		

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

Job ID: 380-100702-1

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

Lab Sample ID: 380-100702-1 MS
Matrix: Water
Analysis Batch: 96150

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 96038

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	<2.0		121	111		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.1		121	117		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		121	111		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		121	120		ng/L		99	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		121	111		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	111		ng/L		91	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	118		ng/L		97	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	110		ng/L		91	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	111		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	116		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	108		ng/L		89	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		121	107		ng/L		88	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	116		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	105		ng/L		87	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3 HFPO-DA	*87*		*50 - 200*
13C6 PFDA	*99*		*50 - 200*
13C5 PFHxA	*87*		*50 - 200*
13C4 PFHpA	*95*		*50 - 200*
13C8 PFOA	*99*		*50 - 200*
13C9 PFNA	*99*		*50 - 200*
13C7 PFUnA	*92*		*50 - 200*
13C2 PFDoA	*91*		*50 - 200*
13C4 PFBA	*98*		*50 - 200*
13C5 PFPeA	*108*		*50 - 200*
13C3 PFBS	*109*		*50 - 200*
13C3 PFHxS	*122*		*50 - 200*
13C8 PFOS	*106*		*50 - 200*
13C2-4:2-FTS	*141*		*50 - 200*
13C2-6:2-FTS	*139*		*50 - 200*
13C2-8:2-FTS	*126*		*50 - 200*

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

Lab Sample ID: 380-100702-1 MSD
Matrix: Water
Analysis Batch: 96150

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 96038

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	103		ng/L		85	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		121	109		ng/L		90	70 - 130	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		121	104		ng/L		86	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		121	107		ng/L		88	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		121	117		ng/L		96	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	<2.0		121	108		ng/L		89	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		121	113		ng/L		93	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		121	110		ng/L		91	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		121	114		ng/L		94	70 - 130	6	30
Perfluorohexanoic acid (PFHxA)	<2.0		121	110		ng/L		90	70 - 130	6	30
Perfluorononanoic acid (PFNA)	<2.0		121	114		ng/L		94	70 - 130	3	30
Perfluorooctanesulfonic acid (PFOS)	2.1		121	117		ng/L		95	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		121	111		ng/L		91	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		121	121		ng/L		100	70 - 130	0	30
Perfluorobutanoic acid (PFBA)	<2.0		121	113		ng/L		92	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		121	116		ng/L		96	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		121	111		ng/L		92	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		121	114		ng/L		95	70 - 130	3	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		121	117		ng/L		97	70 - 130	7	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		121	111		ng/L		92	70 - 130	0	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		121	114		ng/L		95	70 - 130	1	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		121	109		ng/L		91	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	<2.0		121	109		ng/L		89	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		121	114		ng/L		94	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		121	108		ng/L		89	70 - 130	3	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3 HFPO-DA	*90*		*50 - 200*
13C6 PFDA	*99*		*50 - 200*
13C5 PFHxA	*85*		*50 - 200*
13C4 PFHpA	*91*		*50 - 200*
13C8 PFOA	*97*		*50 - 200*
13C9 PFNA	*96*		*50 - 200*

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

Lab Sample ID: 380-100702-1 MSD
Matrix: Water
Analysis Batch: 96150

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 96038

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C7 PFUnA	91		50 - 200
13C2 PFDoA	91		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	106		50 - 200
13C3 PFHxS	115		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	139		50 - 200
13C2-6:2-FTS	144		50 - 200
13C2-8:2-FTS	123		50 - 200

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

Lab Sample ID: MBL 380-96036/21-A
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96036

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorononanoic acid (PFNA)	<0.40		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0		ng/L		06/21/24 05:46	06/21/24 20:25	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	06/21/24 05:46	06/21/24 20:25	1
13C2 PFHxA	105		70 - 130	06/21/24 05:46	06/21/24 20:25	1
13C2 PFDA	102		70 - 130	06/21/24 05:46	06/21/24 20:25	1
13C3-GenX	100		70 - 130	06/21/24 05:46	06/21/24 20:25	1

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

Lab Sample ID: LCS 380-96036/23-A
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.2	52.0		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.2	56.6		ng/L		113	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.2	54.8		ng/L		109	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.2	53.0		ng/L		106	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.2	53.0		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	50.2	53.6		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	50.2	51.9		ng/L		103	70 - 130
Perfluorooctanoic acid (PFOA)	50.2	57.1		ng/L		114	70 - 130
Perfluorodecanoic acid (PFDA)	50.2	56.3		ng/L		112	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.2	58.3		ng/L		116	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.2	48.2		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.2	59.7		ng/L		119	70 - 130
Perfluorononanoic acid (PFNA)	50.2	55.2		ng/L		110	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.2	52.4		ng/L		104	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.2	50.9		ng/L		101	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	50.2	56.6		ng/L		113	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.2	51.7		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.2	56.6		ng/L		113	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d5-NEtFOSAA	*101*		*70 - 130*
13C2 PFHxA	*101*		*70 - 130*
13C2 PFDA	*104*		*70 - 130*
13C3-GenX	*101*		*70 - 130*

Lab Sample ID: MRL 380-96036/22-A
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.30	J	ng/L		115	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.17	J	ng/L		108	50 - 150

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

Lab Sample ID: MRL 380-96036/22-A
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.30	J	ng/L		115	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.29	J	ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.36	J	ng/L		118	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.91	J	ng/L		95	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.44	J	ng/L		122	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.28	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	2.36	J	ng/L		118	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.09	J	ng/L		104	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.28	J	ng/L		114	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
d5-NEtFOSAA	*98*		*70 - 130*
13C2 PFHxA	*101*		*70 - 130*
13C2 PFDA	*103*		*70 - 130*
13C3-GenX	*99*		*70 - 130*

Lab Sample ID: 380-100658-B-1-A LMS
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.18		ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	5.3		2.01	7.46		ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.39		ng/L		119	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.25		ng/L		112	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.29		ng/L		114	50 - 150
Perfluorohexanoic acid (PFHxA)	2.2		2.01	4.26		ng/L		105	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.27		ng/L		113	50 - 150
Perfluorooctanoic acid (PFOA)	2.0		2.01	4.18		ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.34		ng/L		116	50 - 150

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

Lab Sample ID: 380-100658-B-1-A LMS
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.01	4.58		ng/L		111	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	3.88		ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.22		ng/L		121	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.36		ng/L		117	50 - 150
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.29		ng/L		114	50 - 150
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.22		ng/L		110	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.16		ng/L		108	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.12		ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.39		ng/L		119	50 - 150

Surrogate	*LMS %Recovery*	*LMS Qualifier*	*Limits*
d5-NEtFOSAA	*107*		*70 - 130*
13C2 PFHxA	*106*		*70 - 130*
13C2 PFDA	*109*		*70 - 130*
13C3-GenX	*106*		*70 - 130*

Lab Sample ID: 380-100658-C-1-A LMSD
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.33		ng/L		116	50 - 150	7	50
Perfluorooctanesulfonic acid (PFOS)	5.3		2.01	7.61		ng/L		116	50 - 150	2	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.36		ng/L		117	50 - 150	1	50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.28		ng/L		113	50 - 150	1	50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.35		ng/L		117	50 - 150	3	50
Perfluorohexanoic acid (PFHxA)	2.2		2.01	4.24		ng/L		104	50 - 150	1	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.38		ng/L		118	50 - 150	5	50
Perfluorooctanoic acid (PFOA)	2.0		2.01	4.45		ng/L		124	50 - 150	6	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.39		ng/L		119	50 - 150	2	50
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.01	4.64		ng/L		114	50 - 150	1	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	3.99		ng/L		105	50 - 150	3	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.34		ng/L		127	50 - 150	4	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.43		ng/L		121	50 - 150	3	50
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.40		ng/L		119	50 - 150	5	50

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

Lab Sample ID: 380-100658-C-1-A LMSD
Matrix: Water
Analysis Batch: 96141

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96036

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.01	2.32		ng/L		115	50 - 150	4	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.23		ng/L		111	50 - 150	3	50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.07		ng/L		103	50 - 150	2	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.38		ng/L		118	50 - 150	0	50

Surrogate	*LMSD %Recovery*	*LMSD Qualifier*	*Limits*
d5-NEtFOSAA	*105*		*70 - 130*
13C2 PFHxA	*110*		*70 - 130*
13C2 PFDA	*110*		*70 - 130*
13C3-GenX	*108*		*70 - 130*

QC Association Summary

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

Job ID: 380-100702-1

GC/MS Semi VOA

Prep Batch: 96040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-100702-1	MOANALUA WELLS	Total/NA	Water	525.2	
LCS 380-96040/24-A	Lab Control Sample	Total/NA	Water	525.2	

Analysis Batch: 96283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-100702-1	MOANALUA WELLS	Total/NA	Water	525.2	96040
LCS 380-96040/24-A	Lab Control Sample	Total/NA	Water	525.2	96040

LCMS

Prep Batch: 96036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-100702-1	MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-100702-2	FB: MOANALUA WELLS	Total/NA	Water	537.1 DW	
MBL 380-96036/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-96036/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-96036/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-100658-B-1-A LMS	Matrix Spike	Total/NA	Water	537.1 DW	
380-100658-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Prep Batch: 96038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-100702-1	MOANALUA WELLS	Total/NA	Water	533	
380-100702-2	FB: MOANALUA WELLS	Total/NA	Water	533	
MBL 380-96038/20-A	Method Blank	Total/NA	Water	533	
LCS 380-96038/22-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-96038/21-A	Lab Control Sample	Total/NA	Water	533	
380-100702-1 MS	MOANALUA WELLS	Total/NA	Water	533	
380-100702-1 MSD	MOANALUA WELLS	Total/NA	Water	533	

Analysis Batch: 96141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-100702-1	MOANALUA WELLS	Total/NA	Water	537.1	96036
380-100702-2	FB: MOANALUA WELLS	Total/NA	Water	537.1	96036
MBL 380-96036/21-A	Method Blank	Total/NA	Water	537.1	96036
LCS 380-96036/23-A	Lab Control Sample	Total/NA	Water	537.1	96036
MRL 380-96036/22-A	Lab Control Sample	Total/NA	Water	537.1	96036
380-100658-B-1-A LMS	Matrix Spike	Total/NA	Water	537.1	96036
380-100658-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	537.1	96036

Analysis Batch: 96150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-100702-1	MOANALUA WELLS	Total/NA	Water	533	96038
380-100702-2	FB: MOANALUA WELLS	Total/NA	Water	533	96038
MBL 380-96038/20-A	Method Blank	Total/NA	Water	533	96038
LCS 380-96038/22-A	Lab Control Sample	Total/NA	Water	533	96038
MRL 380-96038/21-A	Lab Control Sample	Total/NA	Water	533	96038
380-100702-1 MS	MOANALUA WELLS	Total/NA	Water	533	96038
380-100702-1 MSD	MOANALUA WELLS	Total/NA	Water	533	96038

Lab Chronicle

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

Job ID: 380-100702-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-100702-1

Date Collected: 06/18/24 11:05

Matrix: Water

Date Received: 06/20/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			96040	OTM3	EA POM	06/21/24 08:40
Total/NA	Analysis	525.2		1	96283	Q8LA	EA POM	06/24/24 12:14
Total/NA	Prep	533			96038	XTD8	EA POM	06/21/24 06:15
Total/NA	Analysis	533		1	96150	Y5FM	EA POM	06/21/24 22:49
Total/NA	Prep	537.1 DW			96036	SL5Q	EA POM	06/21/24 05:46
Total/NA	Analysis	537.1		1	96141	M7ML	EA POM	06/21/24 23:33

Client Sample ID: FB: MOANALUA WELLS

Lab Sample ID: 380-100702-2

Date Collected: 06/18/24 11:05

Matrix: Water

Date Received: 06/20/24 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			96038	XTD8	EA POM	06/21/24 06:15
Total/NA	Analysis	533		1	96150	Y5FM	EA POM	06/22/24 01:22
Total/NA	Prep	537.1 DW			96036	SL5Q	EA POM	06/21/24 05:46
Total/NA	Analysis	537.1		1	96141	M7ML	EA POM	06/21/24 23:43

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 380-100702-1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525 2	525 2	Water	4,4' DDT
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbuthylazine
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor

Method Summary

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

Job ID: 380-100702-1

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

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

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

Job ID: 380-100702-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-100702-1	MOANALUA WELLS	Water	06/18/24 11:05	06/20/24 10:20
380-100702-2	FB: MOANALUA WELLS	Water	06/18/24 11:05	06/20/24 10:20

Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia CA 91016
Phone (626) 386-1100

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Kirk Iwamoto	Lab PM: Arada Rachelle	Carrier Tracking No(s):	COC No:
Client Contact: Dr Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: City and County of Honolulu	PWSID:			Job #:

Address: 630 South Beretania St. Chemistry Lab	Due Date Requested:	Analysis Requested
City: Honolulu	TAT Requested (days): Standard	
State, Zip: Hawaii 96843	Compliance Project: Δ Yes Δ No	
Phone: 808-748-5841	PO #: C20525101 exp 05312023	
Email: RFENSTEMACHER@hbws.org	WO #:	
Project Name: RED HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111	
Site: Hawaii	SSOW#:	

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E NaHSO4, F - MeOH, G - Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICS	8015B_GRO_LL (MOD) GRO	8015B_DRO_LL_CS - HNL ranges C10-C24/C24-C36/C8-C18	525.2_PREC - (MOD) 525 plus Plus TICs		537 1_DW_PREC 537 1 Full List	533 All Analytes							Total Number of containers	Special Instructions/Note.
			Preservation Code:				R	A	Q			Y	N								Chlorinated
MOANALUA WELLS	6/18/24	1105	G	Water								3	3								
FB MOANALUA WELLS	6/18/24	1105		Water								1	1								

380-100702 COC

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

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

Deliverable Requested I, II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time.	Method of Shipment: FED EX 7769 4991 7661

Relinquished by: [redacted]	Date/Time: 6/19/24 1200	Company: HBWS	Received by: G.PETTNER	Date/Time: 06/20/2024 10:20	Company: EEAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 751A 3.4°-0.1°=3.3° GEL-FROZEN

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-100702-1

Login Number: 100702
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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