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ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
525.2, 533, 537.1
RUSH Weekly Red Hill

JOB NUMBER

380-76545-1

Eurofins Eaton Analytical 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 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: 380-76545-1
SDG: 525.2, 533, 537.1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

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

Case Narrative

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

Job ID: 380-76545-1

Job ID: 380-76545-1

Eurofins Eaton Analytical Pomona

Job Narrative 380-76545-1

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 12/28/2023 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8°C and 1.5°C

Receipt Exceptions

Ice formation exists in one of the received 533 samples from site MOANALUA WELLS. One of three 533 container affected, there is sufficient volume to perform analysis. MOANALUA WELLS (380-76545-1).

GC/MS Semi VOA

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

PFAS

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

Detection Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-76545-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2
PWSID Number: HI0000331

Lab Sample ID: 380-76545-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
PWSID Number: HI0000331

Lab Sample ID: 380-76545-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzo[k]fluoranthene	0.020	^3+	0.019	ug/L	1		525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
PWSID Number: HI0000331

Lab Sample ID: 380-76545-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Bromacil	0.11		0.097	ug/L	1		525.2	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-76545-9

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-10

No Detections.

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-11

No Detections.

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-12

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-76545-1

Date Collected: 12/26/23 10:04

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
2,4'-DDD	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
2,4'-DDE	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
2,4'-DDT	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
2-Methylnaphthalene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
4,4'-DDD	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
4,4'-DDE	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
4,4'-DDT	<0.098	^3+	0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Acenaphthene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Acenaphthylene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Acetochlor	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Alachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
alpha-BHC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
alpha-Chlordane	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Anthracene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:16	1
Atrazine	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Benz(a)anthracene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Benzo[a]pyrene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:16	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:16	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Benzo[k]fluoranthene	<0.020	^3+	0.020	ug/L		12/29/23 09:05	12/29/23 18:16	1
beta-BHC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		12/29/23 09:05	12/29/23 18:16	1
Bromacil	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Butachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Butylbenzylphthalate	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:16	1
Chlorobenzilate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Chloroneb	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Chlorpyrifos	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Chrysene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:16	1
delta-BHC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		12/29/23 09:05	12/29/23 18:16	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Diclorvos (DDVP)	<0.049	^3+	0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Dieldrin	<0.20		0.20	ug/L		12/29/23 09:05	12/29/23 18:16	1
Diethylphthalate	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:16	1
Dimethylphthalate	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:16	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		12/29/23 09:05	12/29/23 18:16	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Endosulfan sulfate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Endrin	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Endrin aldehyde	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
EPTC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Fluoranthene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1

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Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-76545-1

Date Collected: 12/26/23 10:04

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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		12/29/23 09:05	12/29/23 18:16	1
gamma-Chlordane	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Heptachlor	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:16	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Hexachlorobenzene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Isophorone	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:16	1
Lindane	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:16	1
Malathion	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Methoxychlor	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Metolachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Molinate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Naphthalene	<0.29		0.29	ug/L		12/29/23 09:05	12/29/23 18:16	1
Parathion	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Phenanthrene	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:16	1
Propachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Pyrene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Simazine	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Terbacil	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Terbutylazine	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1
Thiobencarb	<0.20		0.20	ug/L		12/29/23 09:05	12/29/23 18:16	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		12/29/23 09:05	12/29/23 18:16	1
trans-Nonachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:16	1
Trifluralin	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:16	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	12/29/23 09:05	12/29/23 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	12/29/23 09:05	12/29/23 18:16	1
Perylene-d12	98		70 - 130	12/29/23 09:05	12/29/23 18:16	1
Triphenylphosphate	111		70 - 130	12/29/23 09:05	12/29/23 18:16	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-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-76545-1

Date Collected: 12/26/23 10:04

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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		01/03/24 11:00	01/04/24 23:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:37	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C6 PFDA	89		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C5 PFHxA	94		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C4 PFHpA	94		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C8 PFOA	91		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C9 PFNA	88		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C7 PFUnA	88		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C2 PFDoA	90		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C4 PFBA	91		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C5 PFPeA	88		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C3 PFBS	98		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C3 PFHxS	98		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C8 PFOS	95		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C2-4:2-FTS	89		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C2-6:2-FTS	87		50 - 200			01/03/24 11:00	01/04/24 23:37	1
13C2-8:2-FTS	84		50 - 200			01/03/24 11:00	01/04/24 23:37	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		12/29/23 11:44	12/30/23 16:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-76545-1

Date Collected: 12/26/23 10:04

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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		12/29/23 11:44	12/30/23 16:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			12/29/23 11:44	12/30/23 16:18	1
13C2 PFHxA	113		70 - 130			12/29/23 11:44	12/30/23 16:18	1
13C2 PFDA	111		70 - 130			12/29/23 11:44	12/30/23 16:18	1
13C3-GenX	101		70 - 130			12/29/23 11:44	12/30/23 16:18	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-2

Date Collected: 12/26/23 11:06

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
2,4'-DDD	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
2,4'-DDE	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
2,4'-DDT	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
2-Methylnaphthalene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
4,4'-DDD	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
4,4'-DDE	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
4,4'-DDT	<0.098	^3+	0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Acenaphthene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Acenaphthylene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Acetochlor	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Alachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
alpha-BHC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
alpha-Chlordane	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Anthracene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:36	1
Atrazine	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Benz(a)anthracene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Benzo[a]pyrene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:36	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:36	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-2

Date Collected: 12/26/23 11:06

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020	^3+	0.020	ug/L		12/29/23 09:05	12/29/23 18:36	1
beta-BHC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		12/29/23 09:05	12/29/23 18:36	1
Bromacil	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Butachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Butylbenzylphthalate	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:36	1
Chlorobenzilate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Chloroneb	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Chlorpyrifos	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Chrysene	<0.020		0.020	ug/L		12/29/23 09:05	12/29/23 18:36	1
delta-BHC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		12/29/23 09:05	12/29/23 18:36	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Diclorvos (DDVP)	<0.049	^3+	0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Dieldrin	<0.20		0.20	ug/L		12/29/23 09:05	12/29/23 18:36	1
Diethylphthalate	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:36	1
Dimethylphthalate	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:36	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		12/29/23 09:05	12/29/23 18:36	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Endosulfan sulfate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Endrin	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Endrin aldehyde	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
EPTC	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Fluoranthene	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Fluorene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
gamma-Chlordane	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Heptachlor	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:36	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Hexachlorobenzene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Isophorone	<0.49		0.49	ug/L		12/29/23 09:05	12/29/23 18:36	1
Lindane	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:36	1
Malathion	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Methoxychlor	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Metolachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Molinate	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Naphthalene	<0.29		0.29	ug/L		12/29/23 09:05	12/29/23 18:36	1
Parathion	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Phenanthrene	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:36	1
Propachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Pyrene	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Simazine	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Terbacil	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1
Terbutylazine	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-2

Date Collected: 12/26/23 11:06

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20	ug/L		12/29/23 09:05	12/29/23 18:36	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		12/29/23 09:05	12/29/23 18:36	1
trans-Nonachlor	<0.049		0.049	ug/L		12/29/23 09:05	12/29/23 18:36	1
Trifluralin	<0.098		0.098	ug/L		12/29/23 09:05	12/29/23 18:36	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	12/29/23 09:05	12/29/23 18:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	12/29/23 09:05	12/29/23 18:36	1
Perylene-d12	101		70 - 130	12/29/23 09:05	12/29/23 18:36	1
Triphenylphosphate	104		70 - 130	12/29/23 09:05	12/29/23 18:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:47	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-2

Date Collected: 12/26/23 11:06

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	91		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C6 PFDA	87		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C5 PFHxA	97		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C4 PFHpA	95		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C8 PFOA	93		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C9 PFNA	89		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C7 PFUnA	88		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C2 PFDoA	90		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C4 PFBA	94		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C5 PFPeA	89		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C3 PFBS	100		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C3 PFHxS	97		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C8 PFOS	92		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C2-4:2-FTS	87		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C2-6:2-FTS	85		50 - 200	01/03/24 11:00	01/04/24 23:47	1
13C2-8:2-FTS	81		50 - 200	01/03/24 11:00	01/04/24 23:47	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		12/29/23 11:44	12/30/23 16:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130	12/29/23 11:44	12/30/23 16:28	1
13C2 PFHxA	110		70 - 130	12/29/23 11:44	12/30/23 16:28	1
13C2 PFDA	109		70 - 130	12/29/23 11:44	12/30/23 16:28	1
13C3-GenX	99		70 - 130	12/29/23 11:44	12/30/23 16:28	1

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-3

Date Collected: 12/26/23 11:33

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
2,4'-DDD	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
2,4'-DDE	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
2,4'-DDT	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
2-Methylnaphthalene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
4,4'-DDD	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
4,4'-DDE	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
4,4'-DDT	<0.097	^3+	0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Acenaphthene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Acenaphthylene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Acetochlor	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Alachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
alpha-BHC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
alpha-Chlordane	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Anthracene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 18:56	1
Atrazine	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Benz(a)anthracene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Benzo[a]pyrene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 18:56	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 18:56	1
Benzo[g,h,i]perylene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Benzo[k]fluoranthene	0.020	^3+	0.019	ug/L		12/29/23 09:05	12/29/23 18:56	1
beta-BHC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		12/29/23 09:05	12/29/23 18:56	1
Bromacil	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Butachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Butylbenzylphthalate	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 18:56	1
Chlorobenzilate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Chloroneb	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Chlorpyrifos	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Chrysene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 18:56	1
delta-BHC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Di(2-ethylhexyl)adipate	<0.58		0.58	ug/L		12/29/23 09:05	12/29/23 18:56	1
Dibenz(a,h)anthracene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Diclorvos (DDVP)	<0.048	^3+	0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Dieldrin	<0.19		0.19	ug/L		12/29/23 09:05	12/29/23 18:56	1
Diethylphthalate	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 18:56	1
Dimethylphthalate	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 18:56	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		12/29/23 09:05	12/29/23 18:56	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Endosulfan sulfate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Endrin	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Endrin aldehyde	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
EPTC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Fluoranthene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-3

Date Collected: 12/26/23 11:33

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
gamma-Chlordane	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Heptachlor	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:56	1
Heptachlor epoxide (isomer B)	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Hexachlorobenzene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Hexachlorocyclopentadiene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Isophorone	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 18:56	1
Lindane	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:56	1
Malathion	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Methoxychlor	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Metolachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Molinate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Naphthalene	<0.29		0.29	ug/L		12/29/23 09:05	12/29/23 18:56	1
Parathion	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Phenanthrene	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 18:56	1
Propachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Pyrene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Simazine	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Terbacil	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Terbutylazine	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1
Thiobencarb	<0.19		0.19	ug/L		12/29/23 09:05	12/29/23 18:56	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		12/29/23 09:05	12/29/23 18:56	1
trans-Nonachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 18:56	1
Trifluralin	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 18:56	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	12/29/23 09:05	12/29/23 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	12/29/23 09:05	12/29/23 18:56	1
Perylene-d12	95		70 - 130	12/29/23 09:05	12/29/23 18:56	1
Triphenylphosphate	97		70 - 130	12/29/23 09:05	12/29/23 18:56	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-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-3

Date Collected: 12/26/23 11:33

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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		01/03/24 11:00	01/04/24 23:56	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/04/24 23:56	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C6 PFDA	93		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C5 PFHxA	96		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C4 PFHpA	95		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C8 PFOA	93		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C9 PFNA	90		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C7 PFUnA	94		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C2 PFDoA	93		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C4 PFBA	91		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C5 PFPeA	86		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C3 PFBS	97		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C3 PFHxS	94		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C8 PFOS	94		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C2-4:2-FTS	82		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C2-6:2-FTS	84		50 - 200			01/03/24 11:00	01/04/24 23:56	1
13C2-8:2-FTS	76		50 - 200			01/03/24 11:00	01/04/24 23:56	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		12/29/23 11:44	12/30/23 16:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-3

Date Collected: 12/26/23 11:33

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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		12/29/23 11:44	12/30/23 16:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130	12/29/23 11:44	12/30/23 16:38	1
13C2 PFHxA	109		70 - 130	12/29/23 11:44	12/30/23 16:38	1
13C2 PFDA	110		70 - 130	12/29/23 11:44	12/30/23 16:38	1
13C3-GenX	100		70 - 130	12/29/23 11:44	12/30/23 16:38	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

Date Collected: 12/26/23 10:32

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
2,4'-DDD	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
2,4'-DDE	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
2,4'-DDT	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
2-Methylnaphthalene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
4,4'-DDD	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
4,4'-DDE	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
4,4'-DDT	<0.097	^3+	0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Acenaphthene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Acenaphthylene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Acetochlor	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Alachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
alpha-BHC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
alpha-Chlordane	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Anthracene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 19:16	1
Atrazine	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Benz(a)anthracene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Benzo[a]pyrene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 19:16	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 19:16	1
Benzo[g,h,i]perylene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

Date Collected: 12/26/23 10:32

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.019	^3+	0.019	ug/L		12/29/23 09:05	12/29/23 19:16	1
beta-BHC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		12/29/23 09:05	12/29/23 19:16	1
Bromacil	0.11		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Butachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Butylbenzylphthalate	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 19:16	1
Chlorobenzilate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Chloroneb	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Chlorothalonil (Draconil, Bravo)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Chlorpyrifos	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Chrysene	<0.019		0.019	ug/L		12/29/23 09:05	12/29/23 19:16	1
delta-BHC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Di(2-ethylhexyl)adipate	<0.58		0.58	ug/L		12/29/23 09:05	12/29/23 19:16	1
Dibenz(a,h)anthracene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Diclorvos (DDVP)	<0.048	^3+	0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Dieldrin	<0.19		0.19	ug/L		12/29/23 09:05	12/29/23 19:16	1
Diethylphthalate	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 19:16	1
Dimethylphthalate	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 19:16	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		12/29/23 09:05	12/29/23 19:16	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Endosulfan sulfate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Endrin	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Endrin aldehyde	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
EPTC	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Fluoranthene	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Fluorene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
gamma-Chlordane	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Heptachlor	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 19:16	1
Heptachlor epoxide (isomer B)	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Hexachlorobenzene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Hexachlorocyclopentadiene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Indeno[1,2,3-cd]pyrene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Isophorone	<0.48		0.48	ug/L		12/29/23 09:05	12/29/23 19:16	1
Lindane	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 19:16	1
Malathion	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Methoxychlor	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Metolachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Molinate	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Naphthalene	<0.29		0.29	ug/L		12/29/23 09:05	12/29/23 19:16	1
Parathion	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Phenanthrene	<0.039		0.039	ug/L		12/29/23 09:05	12/29/23 19:16	1
Propachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Pyrene	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Simazine	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Terbacil	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1
Terbutylazine	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

Date Collected: 12/26/23 10:32

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.19		0.19	ug/L		12/29/23 09:05	12/29/23 19:16	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		12/29/23 09:05	12/29/23 19:16	1
trans-Nonachlor	<0.048		0.048	ug/L		12/29/23 09:05	12/29/23 19:16	1
Trifluralin	<0.097		0.097	ug/L		12/29/23 09:05	12/29/23 19:16	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	12/29/23 09:05	12/29/23 19:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	12/29/23 09:05	12/29/23 19:16	1
Perylene-d12	98		70 - 130	12/29/23 09:05	12/29/23 19:16	1
Triphenylphosphate	107		70 - 130	12/29/23 09:05	12/29/23 19:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

Date Collected: 12/26/23 10:32

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:06	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	95		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C6 PFDA	93		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C5 PFHxA	96		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C4 PFHpA	97		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C8 PFOA	93		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C9 PFNA	90		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C7 PFUnA	91		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C2 PFDoA	94		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C4 PFBA	92		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C5 PFPeA	91		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C3 PFBS	102		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C3 PFHxS	99		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C8 PFOS	96		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C2-4:2-FTS	97		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C2-6:2-FTS	86		50 - 200			01/03/24 11:00	01/05/24 00:06	1
13C2-8:2-FTS	86		50 - 200			01/03/24 11:00	01/05/24 00:06	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		12/29/23 11:44	12/30/23 16:47	1
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorohexanoic acid (PFHxA)	2.1		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	110		70 - 130			12/29/23 11:44	12/30/23 16:47	1
13C2 PFHxA	109		70 - 130			12/29/23 11:44	12/30/23 16:47	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

Date Collected: 12/26/23 10:32

Matrix: Drinking Water

Date Received: 12/28/23 09:20

PWSID Number: HI0000331

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	111		70 - 130	12/29/23 11:44	12/30/23 16:47	1
13C3-GenX	101		70 - 130	12/29/23 11:44	12/30/23 16:47	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-76545-9

Date Collected: 12/26/23 10:04

Matrix: Water

Date Received: 12/28/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:15	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	93		50 - 200	01/03/24 11:00	01/05/24 00:15	1		
13C6 PFDA	89		50 - 200	01/03/24 11:00	01/05/24 00:15	1		
13C5 PFHxA	98		50 - 200	01/03/24 11:00	01/05/24 00:15	1		
13C4 PFHpA	98		50 - 200	01/03/24 11:00	01/05/24 00:15	1		

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-76545-9

Date Collected: 12/26/23 10:04

Matrix: Water

Date Received: 12/28/23 09:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	94		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C9 PFNA	90		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C7 PFUnA	90		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C2 PFDoA	93		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C4 PFBA	93		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C5 PFPeA	87		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C3 PFBS	96		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C3 PFHxS	96		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C8 PFOS	95		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C2-4:2-FTS	81		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C2-6:2-FTS	84		50 - 200	01/03/24 11:00	01/05/24 00:15	1
13C2-8:2-FTS	78		50 - 200	01/03/24 11:00	01/05/24 00:15	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		12/29/23 11:44	12/30/23 16:57	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 16:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130	12/29/23 11:44	12/30/23 16:57	1
13C2 PFHxA	106		70 - 130	12/29/23 11:44	12/30/23 16:57	1
13C2 PFDA	110		70 - 130	12/29/23 11:44	12/30/23 16:57	1
13C3-GenX	99		70 - 130	12/29/23 11:44	12/30/23 16:57	1

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-10

Date Collected: 12/26/23 11:06

Matrix: Water

Date Received: 12/28/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C6 PFDA	90		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C5 PFHxA	99		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C4 PFHpA	97		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C8 PFOA	96		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C9 PFNA	92		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C7 PFUnA	93		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C2 PFDoA	95		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C4 PFBA	97		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C5 PFPeA	90		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C3 PFBS	96		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C3 PFHxS	97		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C8 PFOS	93		50 - 200	01/03/24 11:00	01/05/24 00:25	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-10

Date Collected: 12/26/23 11:06

Matrix: Water

Date Received: 12/28/23 09:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	81		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C2-6:2-FTS	82		50 - 200	01/03/24 11:00	01/05/24 00:25	1
13C2-8:2-FTS	77		50 - 200	01/03/24 11:00	01/05/24 00:25	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		12/29/23 11:44	12/30/23 17:07	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/29/23 11:44	12/30/23 17:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	111		70 - 130			12/29/23 11:44	12/30/23 17:07	1
13C2 PFHxA	107		70 - 130			12/29/23 11:44	12/30/23 17:07	1
13C2 PFDA	111		70 - 130			12/29/23 11:44	12/30/23 17:07	1
13C3-GenX	100		70 - 130			12/29/23 11:44	12/30/23 17:07	1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-11

Date Collected: 12/26/23 11:33

Matrix: Water

Date Received: 12/28/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-11

Date Collected: 12/26/23 11:33

Matrix: Water

Date Received: 12/28/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 11:00	01/05/24 00:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	89		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C6 PFDA	93		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C5 PFHxA	99		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C4 PFHpA	96		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C8 PFOA	98		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C9 PFNA	92		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C7 PFUnA	96		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C2 PFDoA	95		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C4 PFBA	96		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C5 PFPeA	90		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C3 PFBS	96		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C3 PFHxS	97		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C8 PFOS	93		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C2-4:2-FTS	86		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C2-6:2-FTS	86		50 - 200	01/03/24 11:00	01/05/24 00:44	1
13C2-8:2-FTS	84		50 - 200	01/03/24 11:00	01/05/24 00:44	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		12/30/23 13:43	01/02/24 16:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-11

Date Collected: 12/26/23 11:33

Matrix: Water

Date Received: 12/28/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 16:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	108		70 - 130			12/30/23 13:43	01/02/24 16:53	1
13C2 PFHxA	106		70 - 130			12/30/23 13:43	01/02/24 16:53	1
13C2 PFDA	114		70 - 130			12/30/23 13:43	01/02/24 16:53	1
13C3-GenX	104		70 - 130			12/30/23 13:43	01/02/24 16:53	1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-12

Date Collected: 12/26/23 10:32

Matrix: Water

Date Received: 12/28/23 09:20

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		01/03/24 12:25	01/04/24 20:16	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-12

Date Collected: 12/26/23 10:32

Matrix: Water

Date Received: 12/28/23 09:20

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-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		01/03/24 12:25	01/04/24 20:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C6 PFDA	94		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C5 PFHxA	97		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C4 PFHpA	96		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C8 PFOA	99		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C9 PFNA	98		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C7 PFUnA	94		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C2 PFDoA	103		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C4 PFBA	99		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C5 PFPeA	104		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C3 PFBS	95		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C3 PFHxS	95		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C8 PFOS	97		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C2-4:2-FTS	107		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C2-6:2-FTS	105		50 - 200	01/03/24 12:25	01/04/24 20:16	1
13C2-8:2-FTS	101		50 - 200	01/03/24 12:25	01/04/24 20:16	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		12/30/23 13:43	01/02/24 17:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-12

Date Collected: 12/26/23 10:32

Matrix: Water

Date Received: 12/28/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		12/30/23 13:43	01/02/24 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	103		70 - 130	12/30/23 13:43	01/02/24 17:02	1
13C2 PFHxA	108		70 - 130	12/30/23 13:43	01/02/24 17:02	1
13C2 PFDA	109		70 - 130	12/30/23 13:43	01/02/24 17:02	1
13C3-GenX	104		70 - 130	12/30/23 13:43	01/02/24 17:02	1

Action Limit Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-76545-1

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				
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	<0.098		ug/L	2		0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4		0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	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	<0.039		ug/L	0.2		0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40		0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2
PWSID Number: HI0000331

Lab Sample ID: 380-76545-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
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	<0.098		ug/L	2		0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4		0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	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	<0.039		ug/L	0.2		0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40		0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
PWSID Number: HI0000331

Lab Sample ID: 380-76545-3

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				
Alachlor	<0.048		ug/L	2		0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3		0.048	525.2	Total/NA

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
(Continued)

Lab Sample ID: 380-76545-3

PWSID Number: HI0000331

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			
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

PWSID Number: HI0000331

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			
Alachlor	<0.048		ug/L	2	0.048	525.2	Total/NA
Atrazine	<0.048		ug/L	3	0.048	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2	0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6	0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58		ug/L	400	0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2	0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.048		ug/L	0.2	0.048	525.2	Total/NA
Hexachlorobenzene	<0.048		ug/L	1	0.048	525.2	Total/NA
Hexachlorocyclopentadiene	<0.048		ug/L	50	0.048	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.097		ug/L	40	0.097	525.2	Total/NA
Simazine	<0.048		ug/L	4	0.048	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-76545-1	MOANALUA WELLS	97	98	111
380-76545-2	AIEA GULCH WELLS PUMP 2	100	101	104
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	98	95	97
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	99	98	107

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-76543-N-1-A DU	Duplicate	99	97	115
380-76542-AF-1-A MS	Matrix Spike	96	93	110
LCS 380-69766/20-A	Lab Control Sample	100	93	102
MB 380-69766/17-A	Method Blank	100	99	104
MRL 380-69766/18-A	Lab Control Sample	98	98	103

Surrogate Legend

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

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-76545-1	MOANALUA WELLS	111	113	111	101
380-76545-2	AIEA GULCH WELLS PUMP 2	110	110	109	99
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	114	109	110	100
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	110	109	111	101

Surrogate Legend

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

Surrogate Summary

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

Job ID: 380-76545-1
 SDG: 525.2, 533, 537.1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-76545-9	FB MOANALUA WELLS	114	106	110	99
380-76545-10	FB AIEA GULCH WELLS PUMP 2	111	107	111	100
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	108	106	114	104
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	103	108	109	104
380-76600-A-1-B MS	Matrix Spike	106	112	111	105
380-76600-A-1-C MSD	Matrix Spike Duplicate	110	117	116	110
380-76662-B-1-A MS	Matrix Spike	97	112	104	105
380-76662-C-1-A MSD	Matrix Spike Duplicate	96	108	104	98
LCS 380-69815/23-A	Lab Control Sample	111	113	113	106
LCS 380-69928/23-A	Lab Control Sample	97	102	103	98
MBL 380-69815/21-A	Method Blank	114	115	117	108
MBL 380-69928/21-A	Method Blank	114	110	123	104
MRL 380-69815/22-A	Lab Control Sample	114	112	113	105
MRL 380-69928/22-A	Lab Control Sample	100	103	106	101

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: 380-76545-1
SDG: 525.2, 533, 537.1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-76545-1	MOANALUA WELLS	92	89	94	94	91	88	88	90
380-76545-2	AIEA GULCH WELLS PUMP 2	91	87	97	95	93	89	88	90
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	86	93	96	95	93	90	94	93
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	95	93	96	97	93	90	91	94

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)
380-76545-1	MOANALUA WELLS	91	88	98	98	95	89	87	84
380-76545-2	AIEA GULCH WELLS PUMP 2	94	89	100	97	92	87	85	81
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	91	86	97	94	94	82	84	76
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	92	91	102	99	96	97	86	86

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-76523-B-1-A MS	Matrix Spike	93	94	96	96	96	94	94	100
380-76524-B-1-A DU	Duplicate	88	94	95	97	96	97	92	100
380-76545-9	FB MOANALUA WELLS	93	89	98	98	94	90	90	93
380-76545-10	FB AIEA GULCH WELLS PUMP 2	90	90	99	97	96	92	93	95
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	89	93	99	96	98	92	96	95
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	92	94	97	96	99	98	94	103
380-76770-B-11-A MS	Matrix Spike	106	90	94	92	93	91	94	95
380-76770-C-11-A MSD	Matrix Spike Duplicate	99	84	90	89	87	85	89	90
LCS 380-70028/21-A	Lab Control Sample	97	94	98	96	96	100	95	103

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Isotope Dilution Summary

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

Job ID: 380-76545-1
 SDG: 525.2, 533, 537.1

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

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)
LCS 380-70050/23-A	Lab Control Sample	91	91	93	93	91	92	92	97
MBL 380-70028/19-A	Method Blank	93	104	103	103	102	105	105	100
MBL 380-70050/21-A	Method Blank	102	100	108	107	107	102	102	106
MRL 380-70028/20-A	Lab Control Sample	89	95	100	98	97	97	98	103
MRL 380-70050/22-A	Lab Control Sample	92	90	97	101	95	89	94	100

		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)
380-76523-B-1-A MS	Matrix Spike	97	115	96	96	96	116	106	102
380-76524-B-1-A DU	Duplicate	97	108	93	94	95	111	105	101
380-76545-9	FB MOANALUA WELLS	93	87	96	96	95	81	84	78
380-76545-10	FB AIEA GULCH WELLS PUMP 2	97	90	96	97	93	81	82	77
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	96	90	96	97	93	86	86	84
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	99	104	95	95	97	107	105	101
380-76770-B-11-A MS	Matrix Spike	93	95	99	94	91	100	102	99
380-76770-C-11-A MSD	Matrix Spike Duplicate	86	89	91	91	86	99	90	89
LCS 380-70028/21-A	Lab Control Sample	98	98	94	93	93	100	102	101
LCS 380-70050/23-A	Lab Control Sample	93	88	96	97	93	95	101	96
MBL 380-70028/19-A	Method Blank	99	99	99	101	101	115	109	113
MBL 380-70050/21-A	Method Blank	107	101	109	109	108	109	110	105
MRL 380-70028/20-A	Lab Control Sample	97	97	97	98	96	106	104	101
MRL 380-70050/22-A	Lab Control Sample	97	91	98	96	94	102	97	94

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MB 380-69766/17-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69766

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
2,4'-DDD	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
2,4'-DDE	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
2,4'-DDT	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
2,4-Dinitrotoluene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
2,6-Dinitrotoluene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
2-Methylnaphthalene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
4,4'-DDD	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
4,4'-DDE	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
4,4'-DDT	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Acenaphthene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Acenaphthylene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Acetochlor	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Alachlor	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
alpha-BHC	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
alpha-Chlordane	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Anthracene	<0.020		0.020	ug/L		12/29/23 07:40	12/29/23 16:37	1
Atrazine	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Benz(a)anthracene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Benzo[a]pyrene	<0.020		0.020	ug/L		12/29/23 07:40	12/29/23 16:37	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		12/29/23 07:40	12/29/23 16:37	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		12/29/23 07:40	12/29/23 16:37	1
beta-BHC	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		12/29/23 07:40	12/29/23 16:37	1
Bromacil	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Butachlor	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Butylbenzylphthalate	<0.50		0.50	ug/L		12/29/23 07:40	12/29/23 16:37	1
Chlorobenzilate	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Chloroneb	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Chlorothalonil (Draconil, Bravo)	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Chlorpyrifos	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Chrysene	<0.020		0.020	ug/L		12/29/23 07:40	12/29/23 16:37	1
delta-BHC	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		12/29/23 07:40	12/29/23 16:37	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Dieldrin	<0.20		0.20	ug/L		12/29/23 07:40	12/29/23 16:37	1
Diethylphthalate	<0.50		0.50	ug/L		12/29/23 07:40	12/29/23 16:37	1
Dimethylphthalate	<0.50		0.50	ug/L		12/29/23 07:40	12/29/23 16:37	1
Di-n-butyl phthalate	<1.0		1.0	ug/L		12/29/23 07:40	12/29/23 16:37	1
Di-n-octyl phthalate	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Endosulfan I (Alpha)	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Endosulfan II (Beta)	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Endosulfan sulfate	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Endrin	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Endrin aldehyde	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
EPTC	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MB 380-69766/17-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69766

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Fluorene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
gamma-Chlordane	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Heptachlor	<0.040		0.040	ug/L		12/29/23 07:40	12/29/23 16:37	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Hexachlorobenzene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Isophorone	<0.50		0.50	ug/L		12/29/23 07:40	12/29/23 16:37	1
Lindane	<0.040		0.040	ug/L		12/29/23 07:40	12/29/23 16:37	1
Malathion	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Methoxychlor	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Metolachlor	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Molinate	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Naphthalene	<0.30		0.30	ug/L		12/29/23 07:40	12/29/23 16:37	1
Parathion	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Pendimethalin (Penoxaline)	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Phenanthrene	<0.040		0.040	ug/L		12/29/23 07:40	12/29/23 16:37	1
Propachlor	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Pyrene	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Simazine	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Terbacil	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Terbutylazine	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1
Thiobencarb	<0.20		0.20	ug/L		12/29/23 07:40	12/29/23 16:37	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		12/29/23 07:40	12/29/23 16:37	1
trans-Nonachlor	<0.050		0.050	ug/L		12/29/23 07:40	12/29/23 16:37	1
Trifluralin	<0.10		0.10	ug/L		12/29/23 07:40	12/29/23 16:37	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane	2.45	T J N	ug/L		2.37	124-18-5	12/29/23 07:40	12/29/23 16:37	1
Decane, 5-methyl-	0.693	T J N	ug/L		2.53	13151-35-4	12/29/23 07:40	12/29/23 16:37	1
Cyclopentasiloxane, decamethyl-	0.522	T J N	ug/L		2.65	541-02-6	12/29/23 07:40	12/29/23 16:37	1
Phenol, 2,4-bis(1,1-dimethylethyl)-	0.531	T J N	ug/L		4.14	96-76-4	12/29/23 07:40	12/29/23 16:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	12/29/23 07:40	12/29/23 16:37	1
Perylene-d12	99		70 - 130	12/29/23 07:40	12/29/23 16:37	1
Triphenylphosphate	104		70 - 130	12/29/23 07:40	12/29/23 16:37	1

Lab Sample ID: LCS 380-69766/20-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.98	2.08		ug/L		105	70 - 130
2,4'-DDD	1.98	2.05		ug/L		103	70 - 130
2,4'-DDE	1.98	2.27		ug/L		114	70 - 130
2,4'-DDT	1.98	2.02		ug/L		102	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-69766/20-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.98	1.83		ug/L		92	70 - 130
2,6-Dinitrotoluene	1.98	1.86		ug/L		94	70 - 130
2-Methylnaphthalene	1.98	2.10		ug/L		106	70 - 130
4,4'-DDD	1.98	1.99		ug/L		101	70 - 130
4,4'-DDE	1.98	1.93		ug/L		98	70 - 130
4,4'-DDT	1.98	1.99		ug/L		100	70 - 130
Acenaphthene	1.98	2.02		ug/L		102	70 - 130
Acenaphthylene	1.98	2.09		ug/L		105	70 - 130
Acetochlor	1.98	2.31		ug/L		117	70 - 130
Alachlor	1.98	2.20		ug/L		111	70 - 130
alpha-BHC	1.98	2.08		ug/L		105	70 - 130
alpha-Chlordane	1.98	1.89		ug/L		95	70 - 130
Anthracene	1.98	2.01		ug/L		102	70 - 130
Atrazine	1.98	2.42		ug/L		122	70 - 130
Benz(a)anthracene	1.98	1.94		ug/L		98	70 - 130
Benzo[a]pyrene	1.98	2.04		ug/L		103	70 - 130
Benzo[b]fluoranthene	1.98	2.05		ug/L		103	70 - 130
Benzo[g,h,i]perylene	1.98	2.18		ug/L		110	70 - 130
Benzo[k]fluoranthene	1.98	2.05		ug/L		104	70 - 130
beta-BHC	1.98	2.01		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	2.25		ug/L		114	70 - 130
Bromacil	1.98	1.79		ug/L		90	70 - 130
Butachlor	1.98	2.15		ug/L		108	70 - 130
Butylbenzylphthalate	1.98	2.10		ug/L		106	70 - 130
Chlorobenzilate	1.98	2.15		ug/L		109	70 - 130
Chloroneb	1.98	2.18		ug/L		110	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.05		ug/L		103	70 - 130
Chlorpyrifos	1.98	2.09		ug/L		105	70 - 130
Chrysene	1.98	2.22		ug/L		112	70 - 130
delta-BHC	1.98	2.03		ug/L		102	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.29		ug/L		116	70 - 130
Dibenz(a,h)anthracene	1.98	2.13		ug/L		107	70 - 130
Diclorvos (DDVP)	1.98	2.09		ug/L		105	70 - 130
Dieldrin	1.98	2.17		ug/L		109	70 - 130
Diethylphthalate	1.98	2.17		ug/L		109	70 - 130
Dimethylphthalate	1.98	2.22		ug/L		112	70 - 130
Di-n-butyl phthalate	3.97	4.11		ug/L		104	70 - 130
Di-n-octyl phthalate	1.98	2.12		ug/L		107	70 - 130
Endosulfan I (Alpha)	1.98	2.11		ug/L		106	70 - 130
Endosulfan II (Beta)	1.98	2.29		ug/L		116	70 - 130
Endosulfan sulfate	1.98	2.09		ug/L		105	70 - 130
Endrin	1.98	2.30		ug/L		116	70 - 130
Endrin aldehyde	1.98	1.89		ug/L		95	70 - 130
EPTC	1.98	2.26		ug/L		114	70 - 130
Fluoranthene	1.98	2.17		ug/L		110	70 - 130
Fluorene	1.98	2.12		ug/L		107	70 - 130
gamma-Chlordane	1.98	1.89		ug/L		95	70 - 130
Heptachlor	1.98	2.34		ug/L		118	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.02		ug/L		102	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-69766/20-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	1.98	2.03		ug/L		103	70 - 130
Hexachlorocyclopentadiene	1.98	1.97		ug/L		99	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.08		ug/L		105	70 - 130
Isophorone	1.98	2.16		ug/L		109	70 - 130
Lindane	1.98	2.06		ug/L		104	70 - 130
Malathion	1.98	2.02		ug/L		102	70 - 130
Methoxychlor	1.98	2.08		ug/L		105	70 - 130
Metolachlor	1.98	2.09		ug/L		105	70 - 130
Molinate	1.98	2.18		ug/L		110	70 - 130
Naphthalene	1.98	2.02		ug/L		102	70 - 130
Parathion	1.98	2.07		ug/L		104	70 - 130
Pendimethalin (Penoxaline)	1.98	1.93		ug/L		97	70 - 130
Phenanthrene	1.98	2.00		ug/L		101	70 - 130
Propachlor	1.98	2.32		ug/L		117	70 - 130
Pyrene	1.98	2.21		ug/L		111	70 - 130
Simazine	1.98	2.27		ug/L		114	70 - 130
Terbacil	1.98	2.12		ug/L		107	70 - 130
Terbutylazine	1.98	2.02		ug/L		102	70 - 130
Thiobencarb	1.98	2.17		ug/L		110	70 - 130
trans-Nonachlor	1.98	1.96		ug/L		99	70 - 130
Trifluralin	1.98	1.90		ug/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	93		70 - 130
Triphenylphosphate	102		70 - 130

Lab Sample ID: MRL 380-69766/18-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0993	0.119		ug/L		120	50 - 150
2,4'-DDD	0.0993	0.140		ug/L		141	50 - 150
2,4'-DDE	0.0993	0.103		ug/L		103	50 - 150
2,4'-DDT	0.0993	0.140		ug/L		141	50 - 150
2,4-Dinitrotoluene	0.0993	0.103		ug/L		104	50 - 150
2,6-Dinitrotoluene	0.0993	0.104		ug/L		105	50 - 150
2-Methylnaphthalene	0.0993	0.113		ug/L		114	50 - 150
4,4'-DDD	0.0993	0.121		ug/L		122	50 - 150
4,4'-DDE	0.0993	0.0916	J	ug/L		92	50 - 150
4,4'-DDT	0.0993	0.153	^3+	ug/L		154	50 - 150
Acenaphthene	0.0993	0.106		ug/L		106	50 - 150
Acenaphthylene	0.0993	0.102		ug/L		102	50 - 150
Acetochlor	0.0497	0.0516	J	ug/L		104	50 - 150
Alachlor	0.0497	0.0588		ug/L		118	50 - 150
alpha-BHC	0.0993	0.110		ug/L		111	50 - 150
alpha-Chlordane	0.0248	0.0328	J	ug/L		132	50 - 150

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-69766/18-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Anthracene	0.0199	0.0196	J	ug/L		99	50 - 150
Atrazine	0.0497	<0.048		ug/L		93	50 - 150
Benz(a)anthracene	0.0497	0.0728		ug/L		147	50 - 150
Benzo[a]pyrene	0.0199	0.0280		ug/L		141	50 - 150
Benzo[b]fluoranthene	0.0199	0.0262		ug/L		132	50 - 150
Benzo[g,h,i]perylene	0.0497	0.0643		ug/L		130	50 - 150
Benzo[k]fluoranthene	0.0199	0.0314	^3+	ug/L		158	50 - 150
beta-BHC	0.0993	0.106		ug/L		107	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.681		ug/L		114	50 - 150
Bromacil	0.0993	0.147		ug/L		148	50 - 150
Butachlor	0.0497	0.0703		ug/L		141	50 - 150
Butylbenzylphthalate	0.149	0.174	J	ug/L		117	50 - 150
Chlorobenzilate	0.0993	0.123		ug/L		124	50 - 150
Chloroneb	0.0993	0.0976	J	ug/L		98	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0993	0.120		ug/L		121	50 - 150
Chlorpyrifos	0.0497	0.0508		ug/L		102	50 - 150
Chrysene	0.0199	0.0203		ug/L		102	50 - 150
delta-BHC	0.0993	0.124		ug/L		125	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.370	J	ug/L		124	50 - 150
Dibenz(a,h)anthracene	0.0497	0.0666		ug/L		134	50 - 150
Diclorvos (DDVP)	0.0497	0.0749	^3+	ug/L		151	50 - 150
Dieldrin	0.0993	0.104	J	ug/L		105	50 - 150
Diethylphthalate	0.149	0.172	J	ug/L		115	50 - 150
Dimethylphthalate	0.298	0.324	J	ug/L		109	50 - 150
Di-n-butyl phthalate	0.298	0.325	J	ug/L		109	49 - 243
Di-n-octyl phthalate	0.0993	0.118		ug/L		119	50 - 150
Endosulfan I (Alpha)	0.0993	0.107		ug/L		108	50 - 150
Endosulfan II (Beta)	0.0993	0.125		ug/L		126	50 - 150
Endosulfan sulfate	0.0993	0.114		ug/L		115	50 - 150
Endrin	0.0993	0.112		ug/L		113	50 - 150
Endrin aldehyde	0.0993	0.128		ug/L		129	50 - 150
EPTC	0.0993	0.107		ug/L		107	50 - 150
Fluoranthene	0.0497	0.0518	J	ug/L		104	50 - 150
Fluorene	0.0497	0.0546		ug/L		110	50 - 150
gamma-Chlordane	0.0248	0.0347	J	ug/L		140	50 - 150
Heptachlor	0.0397	0.0503		ug/L		127	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0588		ug/L		119	50 - 150
Hexachlorobenzene	0.0497	0.0498	J	ug/L		100	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0408	J	ug/L		82	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0689		ug/L		139	50 - 150
Isophorone	0.0993	0.117	J	ug/L		117	50 - 150
Lindane	0.0397	0.0457		ug/L		115	50 - 150
Malathion	0.0993	0.117		ug/L		118	50 - 150
Methoxychlor	0.0993	0.116		ug/L		117	50 - 150
Metolachlor	0.0497	0.0714		ug/L		144	50 - 150
Molinate	0.0993	0.109		ug/L		109	50 - 150
Naphthalene	0.0993	0.116	J	ug/L		116	50 - 150
Parathion	0.0993	0.142		ug/L		143	50 - 150
Pendimethalin (Penoxaline)	0.0993	0.104		ug/L		104	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-69766/18-A
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Phenanthrene	0.0199	0.0227	J	ug/L		114	50 - 150
Propachlor	0.0497	0.0547		ug/L		110	50 - 150
Pyrene	0.0497	0.0523		ug/L		105	50 - 150
Simazine	0.0497	0.0507		ug/L		102	50 - 150
Terbacil	0.0993	0.0981	J	ug/L		99	50 - 150
Terbutylazine	0.0993	0.112		ug/L		112	50 - 150
Thiobencarb	0.0993	0.111	J	ug/L		112	50 - 150
trans-Nonachlor	0.0248	0.0359	J	ug/L		145	50 - 150
Trifluralin	0.0993	0.131		ug/L		132	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	98		70 - 130
Triphenylphosphate	103		70 - 130

Lab Sample ID: 380-76542-AF-1-A MS
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.98	2.08		ug/L		105	70 - 130
2,4'-DDD	<0.098		1.98	2.12		ug/L		107	70 - 130
2,4'-DDE	<0.098		1.98	2.38		ug/L		120	70 - 130
2,4'-DDT	<0.098		1.98	2.11		ug/L		107	70 - 130
2,4-Dinitrotoluene	<0.098		1.98	2.03		ug/L		102	70 - 130
2,6-Dinitrotoluene	<0.098		1.98	2.00		ug/L		101	70 - 130
2-Methylnaphthalene	<0.098		1.98	2.10		ug/L		106	70 - 130
4,4'-DDD	<0.098		1.98	2.16		ug/L		109	70 - 130
4,4'-DDE	<0.098		1.98	1.99		ug/L		101	70 - 130
4,4'-DDT	<0.098	^3+	1.98	2.12		ug/L		107	70 - 130
Acenaphthene	<0.098		1.98	2.03		ug/L		103	70 - 130
Acenaphthylene	<0.098		1.98	2.20		ug/L		111	70 - 130
Acetochlor	<0.098		1.98	2.36		ug/L		119	70 - 130
Alachlor	<0.049		1.98	2.26		ug/L		114	70 - 130
alpha-BHC	<0.098		1.98	2.10		ug/L		106	70 - 130
alpha-Chlordane	<0.049		1.98	1.90		ug/L		96	70 - 130
Anthracene	<0.020		1.98	2.09		ug/L		106	70 - 130
Atrazine	<0.049		1.98	2.46		ug/L		124	70 - 130
Benz(a)anthracene	<0.049		1.98	2.08		ug/L		105	70 - 130
Benzo[a]pyrene	<0.020		1.98	2.13		ug/L		108	70 - 130
Benzo[b]fluoranthene	<0.020		1.98	2.12		ug/L		107	70 - 130
Benzo[g,h,i]perylene	<0.049		1.98	1.99		ug/L		100	70 - 130
Benzo[k]fluoranthene	<0.020	^3+	1.98	2.03		ug/L		103	70 - 130
beta-BHC	<0.098		1.98	2.12		ug/L		107	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.98	2.22		ug/L		112	70 - 130
Bromacil	<0.098		1.98	2.16		ug/L		109	70 - 130
Butachlor	<0.049		1.98	2.22		ug/L		112	70 - 130
Butylbenzylphthalate	<0.49		1.98	2.23		ug/L		113	70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76542-AF-1-A MS
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				Limits
Chlorobenzilate	<0.098		1.98	2.36		ug/L		119	70 - 130
Chloroneb	<0.098		1.98	2.17		ug/L		110	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.98	2.14		ug/L		108	70 - 130
Chlorpyrifos	<0.049		1.98	2.16		ug/L		109	70 - 130
Chrysene	<0.020		1.98	2.26		ug/L		114	70 - 130
delta-BHC	<0.098		1.98	2.12		ug/L		107	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.98	2.32		ug/L		117	70 - 130
Dibenz(a,h)anthracene	<0.049		1.98	2.03		ug/L		102	70 - 130
Diclorvos (DDVP)	<0.049	^3+	1.98	2.17		ug/L		110	70 - 130
Dieldrin	<0.20		1.98	2.16		ug/L		109	70 - 130
Diethylphthalate	<0.49		1.98	2.19		ug/L		111	70 - 130
Dimethylphthalate	<0.49		1.98	2.24		ug/L		113	70 - 130
Di-n-butyl phthalate	<0.98		3.96	4.41		ug/L		109	70 - 130
Di-n-octyl phthalate	<0.098		1.98	2.13		ug/L		108	70 - 130
Endosulfan I (Alpha)	<0.098		1.98	2.19		ug/L		111	70 - 130
Endosulfan II (Beta)	<0.098		1.98	2.28		ug/L		115	70 - 130
Endosulfan sulfate	<0.098		1.98	2.17		ug/L		109	70 - 130
Endrin	<0.098		1.98	2.44		ug/L		123	70 - 130
Endrin aldehyde	<0.098		1.98	1.78		ug/L		90	70 - 130
EPTC	<0.098		1.98	2.21		ug/L		112	70 - 130
Fluoranthene	<0.098		1.98	2.31		ug/L		117	70 - 130
Fluorene	<0.049		1.98	2.20		ug/L		111	70 - 130
gamma-Chlordane	<0.049		1.98	1.95		ug/L		99	70 - 130
Heptachlor	<0.039		1.98	2.36		ug/L		119	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.98	2.05		ug/L		104	70 - 130
Hexachlorobenzene	<0.049		1.98	2.08		ug/L		105	70 - 130
Hexachlorocyclopentadiene	<0.049		1.98	2.15		ug/L		109	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.98	2.01		ug/L		102	70 - 130
Isophorone	<0.49		1.98	2.11		ug/L		107	70 - 130
Lindane	<0.039		1.98	2.06		ug/L		104	70 - 130
Malathion	<0.098		1.98	2.15		ug/L		108	70 - 130
Methoxychlor	<0.098		1.98	2.29		ug/L		116	70 - 130
Metolachlor	<0.049		1.98	2.13		ug/L		108	70 - 130
Molinate	<0.098		1.98	2.20		ug/L		111	70 - 130
Naphthalene	<0.29		1.98	1.98		ug/L		100	70 - 130
Parathion	<0.098		1.98	2.32		ug/L		117	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.98	2.15		ug/L		109	70 - 130
Phenanthrene	<0.039		1.98	2.06		ug/L		104	70 - 130
Propachlor	<0.049		1.98	2.40		ug/L		121	70 - 130
Pyrene	<0.049		1.98	2.36		ug/L		119	70 - 130
Simazine	<0.049		1.98	2.49		ug/L		126	70 - 130
Terbacil	<0.098		1.98	2.55		ug/L		129	70 - 130
Terbutylazine	<0.098		1.98	2.15		ug/L		109	70 - 130
Thiobencarb	<0.20		1.98	2.31		ug/L		117	70 - 130
trans-Nonachlor	<0.049		1.98	2.00		ug/L		101	70 - 130
Trifluralin	<0.098		1.98	1.99		ug/L		101	70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76542-AF-1-A MS
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69766

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
2-Nitro-m-xylene	96		70 - 130
Perylene-d12	93		70 - 130
Triphenylphosphate	110		70 - 130

Lab Sample ID: 380-76543-N-1-A DU
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
1-Methylnaphthalene	<0.099		<0.099		ug/L		NC	20
2,4'-DDD	<0.099		<0.099		ug/L		NC	20
2,4'-DDE	<0.099		<0.099		ug/L		NC	20
2,4'-DDT	<0.099		<0.099		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.099		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.099		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.099		ug/L		NC	20
4,4'-DDD	<0.099		<0.099		ug/L		NC	20
4,4'-DDE	<0.099		<0.099		ug/L		NC	20
4,4'-DDT	<0.099	^3+	<0.099		ug/L		NC	20
Acenaphthene	<0.099		<0.099		ug/L		NC	20
Acenaphthylene	<0.099		<0.099		ug/L		NC	20
Acetochlor	<0.099		<0.099		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.099		<0.099		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020	^3+	<0.020		ug/L		NC	20
beta-BHC	<0.099		<0.099		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.099		<0.099		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.099		<0.099		ug/L		NC	20
Chloroneb	<0.099		<0.099		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099		<0.099		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.099		<0.099		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049	^3+	<0.049		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20

QC Sample Results

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

Job ID: 380-76545-1
 SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76543-N-1-A DU
Matrix: Water
Analysis Batch: 69824

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 69766

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.99		<0.99		ug/L		NC	20
Di-n-octyl phthalate	<0.099		<0.099		ug/L		NC	20
Endosulfan I (Alpha)	<0.099		<0.099		ug/L		NC	20
Endosulfan II (Beta)	<0.099		<0.099		ug/L		NC	20
Endosulfan sulfate	<0.099		<0.099		ug/L		NC	20
Endrin	<0.099		<0.099		ug/L		NC	20
Endrin aldehyde	<0.099		<0.099		ug/L		NC	20
EPTC	<0.099		<0.099		ug/L		NC	20
Fluoranthene	<0.099		<0.099		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.099		<0.099		ug/L		NC	20
Methoxychlor	<0.099		<0.099		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.099		<0.099		ug/L		NC	20
Naphthalene	<0.30		<0.30		ug/L		NC	20
Parathion	<0.099		<0.099		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.099		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.099		<0.099		ug/L		NC	20
Terbutylazine	<0.099		<0.099		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.099		<0.099		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	115		70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-70028/19-A
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 70028

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		01/03/24 12:25	01/04/24 18:38	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C6 PFDA	104		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C5 PFHxA	103		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C4 PFHpA	103		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C8 PFOA	102		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C9 PFNA	105		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C7 PFUnA	105		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C2 PFDoA	100		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C4 PFBA	99		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C5 PFPeA	99		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C3 PFBS	99		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C3 PFHxS	101		50 - 200	01/03/24 12:25	01/04/24 18:38	1

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-70028/19-A
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 70028

<i>Isotope Dilution</i>	<i>MBL %Recovery</i>	<i>MBL Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C8 PFOS	101		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C2-4:2-FTS	115		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C2-6:2-FTS	109		50 - 200	01/03/24 12:25	01/04/24 18:38	1
13C2-8:2-FTS	113		50 - 200	01/03/24 12:25	01/04/24 18:38	1

Lab Sample ID: LCS 380-70028/21-A
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70028

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	56.1		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	60.2	56.8		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	62.7		ng/L		104	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	59.9		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	58.4		ng/L		97	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	59.0		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	57.6		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	58.9		ng/L		98	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	57.6		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	60.3		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	60.2	56.7		ng/L		94	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	55.2		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	59.4		ng/L		99	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.2	57.1		ng/L		95	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	60.4		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	58.1		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	62.4		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	59.3		ng/L		98	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.2	61.7		ng/L		102	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	54.1		ng/L		90	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	63.5		ng/L		105	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	63.5		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	61.4		ng/L		102	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	58.7		ng/L		97	70 - 130

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-70028/21-A
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	60.2	56.3		ng/L		93	70 - 130
LCS LCS							
Isotope Dilution	%Recovery	Qualifier	Limits				
13C3 HFPO-DA	97		50 - 200				
13C6 PFDA	94		50 - 200				
13C5 PFHxA	98		50 - 200				
13C4 PFHpA	96		50 - 200				
13C8 PFOA	96		50 - 200				
13C9 PFNA	100		50 - 200				
13C7 PFUnA	95		50 - 200				
13C2 PFDoA	103		50 - 200				
13C4 PFBA	98		50 - 200				
13C5 PFPeA	98		50 - 200				
13C3 PFBS	94		50 - 200				
13C3 PFHxS	93		50 - 200				
13C8 PFOS	93		50 - 200				
13C2-4:2-FTS	100		50 - 200				
13C2-6:2-FTS	102		50 - 200				
13C2-8:2-FTS	101		50 - 200				

Lab Sample ID: MRL 380-70028/20-A
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70028

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.90	J	ng/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.93	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.86	J	ng/L		93	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.13	J	ng/L		106	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.68	J	ng/L		84	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.89	J	ng/L		94	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.78	J	ng/L		89	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.01	J	ng/L		100	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-70028/20-A
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70028

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.94	J	ng/L		97	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.04	J	ng/L		102	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.22	J	ng/L		111	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.80	J	ng/L		90	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	95		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	97		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	103		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	98		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	104		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: 380-76523-B-1-A MS
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 70028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.4	60.4		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.4	59.0		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.4	60.8		ng/L		101	70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76523-B-1-A MS
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 70028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		60.4	60.1		ng/L		100	70 - 130
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.4	58.0		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.4	58.9		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.4	61.3		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		60.4	61.1		ng/L		101	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		60.4	60.3		ng/L		99	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		60.4	62.5		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.4	60.4		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		60.4	58.2		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		60.4	60.8		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.4	58.4		ng/L		97	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		60.4	62.3		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.4	63.0		ng/L		104	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.4	59.2		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.4	60.9		ng/L		101	70 - 130
Nonafluoro-3,6-dioxahheptanoic acid (NFDHA)	<2.0		60.4	58.8		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.4	59.2		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.4	69.2		ng/L		115	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.4	63.0		ng/L		104	70 - 130
Perfluoropentanoic acid (PFPeA)	<2.0		60.4	63.2		ng/L		105	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.4	59.7		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.4	56.0		ng/L		93	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	93		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	96		50 - 200
13C4 PFHpA	96		50 - 200
13C8 PFOA	96		50 - 200
13C9 PFNA	94		50 - 200
13C7 PFUnA	94		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	115		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	96		50 - 200

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76523-B-1-A MS
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 70028

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	102		50 - 200

Lab Sample ID: 380-76524-B-1-A DU
Matrix: Water
Analysis Batch: 70377

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 70028

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		<2.0		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		<2.0		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		<2.0		ng/L		NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		<2.0		ng/L		NC	30
Perfluorodecanoic acid (PFDA)	<2.0		<2.0		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	<2.0		<2.0		ng/L		NC	30
Perfluorononanoic acid (PFNA)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanoic acid (PFOA)	<2.0		<2.0		ng/L		NC	30
Perfluoroundecanoic acid (PFUnA)	<2.0		<2.0		ng/L		NC	30
Perfluorobutanoic acid (PFBA)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		<2.0		ng/L		NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		<2.0		ng/L		NC	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		<2.0		ng/L		NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		<2.0		ng/L		NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanoic acid (PFPeA)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		<2.0		ng/L		NC	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		<2.0		ng/L		NC	30

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Isotope Dilution	DU DU		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	88		50 - 200
13C6 PFDA	94		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	97		50 - 200
13C8 PFOA	96		50 - 200
13C9 PFNA	97		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	108		50 - 200
13C3 PFBS	93		50 - 200
13C3 PFHxS	94		50 - 200
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	101		50 - 200

Lab Sample ID: MBL 380-70050/21-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 70050

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-70050/21-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 70050

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		01/03/24 11:00	01/04/24 22:11	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	102		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C6 PFDA	100		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C5 PFHxA	108		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C4 PFHpA	107		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C8 PFOA	107		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C9 PFNA	102		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C7 PFUnA	102		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C2 PFDoA	106		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C4 PFBA	107		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C5 PFPeA	101		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C3 PFBS	109		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C3 PFHxS	109		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C8 PFOS	108		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C2-4:2-FTS	109		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C2-6:2-FTS	110		50 - 200	01/03/24 11:00	01/04/24 22:11	1
13C2-8:2-FTS	105		50 - 200	01/03/24 11:00	01/04/24 22:11	1

Lab Sample ID: LCS 380-70050/23-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.2	58.8		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.2	57.1		ng/L		95	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.2	56.4		ng/L		94	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.2	59.2		ng/L		98	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.2	57.5		ng/L		95	70 - 130
Perfluorodecanoic acid (PFDA)	60.2	56.4		ng/L		94	70 - 130
Perfluorododecanoic acid (PFDoA)	60.2	55.7		ng/L		92	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.2	56.7		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	60.2	55.9		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	60.2	53.8		ng/L		89	70 - 130
Perfluorononanoic acid (PFNA)	60.2	57.1		ng/L		95	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.2	54.8		ng/L		91	70 - 130
Perfluorooctanoic acid (PFOA)	60.2	54.5		ng/L		91	70 - 130

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-70050/23-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	60.2	56.1		ng/L		93	70 - 130
Perfluorobutanoic acid (PFBA)	60.2	57.6		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.2	58.4		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.2	58.7		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.2	54.8		ng/L		91	70 - 130
Nonafluoro-3,6-dioxiheptanoic acid (NFDHA)	60.2	62.7		ng/L		104	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.2	55.2		ng/L		92	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.2	58.7		ng/L		97	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.2	57.8		ng/L		96	70 - 130
Perfluoropentanoic acid (PFPeA)	60.2	62.1		ng/L		103	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.2	59.2		ng/L		98	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.2	56.2		ng/L		93	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	91		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	91		50 - 200
13C9 PFNA	92		50 - 200
13C7 PFUnA	92		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	88		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	97		50 - 200
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	95		50 - 200
13C2-6:2-FTS	101		50 - 200
13C2-8:2-FTS	96		50 - 200

Lab Sample ID: MRL 380-70050/22-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.01	1.86	J	ng/L		93	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.01	1.72	J	ng/L		86	50 - 150

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-70050/22-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.01	1.58	J	ng/L		79	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.01	2.03	J	ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.01	1.83	J	ng/L		91	50 - 150
Perfluorodecanoic acid (PFDA)	2.01	1.86	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	2.01	1.57	J	ng/L		78	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.01	1.85	J	ng/L		92	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.01	1.82	J	ng/L		91	50 - 150
Perfluorohexanoic acid (PFHxA)	2.01	1.88	J	ng/L		94	50 - 150
Perfluorononanoic acid (PFNA)	2.01	2.00	J	ng/L		100	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.01	1.67	J	ng/L		83	50 - 150
Perfluorooctanoic acid (PFOA)	2.01	1.88	J	ng/L		93	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.01	1.61	J	ng/L		80	50 - 150
Perfluorobutanoic acid (PFBA)	2.01	1.73	J	ng/L		86	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.01	1.74	J	ng/L		86	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.01	1.88	J	ng/L		94	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.01	1.91	J	ng/L		95	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.01	2.17	J	ng/L		108	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.01	1.82	J	ng/L		90	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.01	1.57	J	ng/L		78	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.01	1.80	J	ng/L		89	50 - 150
Perfluoropentanoic acid (PFPeA)	2.01	2.01	J	ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.01	1.93	J	ng/L		96	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.01	1.78	J	ng/L		89	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	90		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	101		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	89		50 - 200
13C7 PFUnA	94		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	97		50 - 200
13C5 PFPeA	91		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	96		50 - 200

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-70050/22-A
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 70050

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
13C8 PFOS	94		50 - 200
13C2-4:2-FTS	102		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	94		50 - 200

Lab Sample ID: 380-76770-B-11-A MS
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 70050

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	64.9		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	62.7		ng/L		104	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	61.6		ng/L		102	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	62.4		ng/L		104	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	63.7		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		60.2	64.2		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	62.6		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	3.6		60.2	67.3		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	5.8		60.2	66.3		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	28		60.2	89.5		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		60.2	62.4		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	9.6		60.2	71.3		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	6.6		60.2	67.3		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	61.7		ng/L		103	70 - 130
Perfluorobutanoic acid (PFBA)	6.8		60.2	69.9		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	57.7		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	60.2		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	60.4		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	59.8		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		60.2	59.3		ng/L		98	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	64.0		ng/L		106	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	65.4		ng/L		109	70 - 130
Perfluoropentanoic acid (PFPeA)	20		60.2	80.2		ng/L		101	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	65.2		ng/L		108	70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76770-B-11-A MS
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	60.7		ng/L		100	70 - 130
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	106		50 - 200						
13C6 PFDA	90		50 - 200						
13C5 PFHxA	94		50 - 200						
13C4 PFHpA	92		50 - 200						
13C8 PFOA	93		50 - 200						
13C9 PFNA	91		50 - 200						
13C7 PFUnA	94		50 - 200						
13C2 PFDoA	95		50 - 200						
13C4 PFBA	93		50 - 200						
13C5 PFPeA	95		50 - 200						
13C3 PFBS	99		50 - 200						
13C3 PFHxS	94		50 - 200						
13C8 PFOS	91		50 - 200						
13C2-4:2-FTS	100		50 - 200						
13C2-6:2-FTS	102		50 - 200						
13C2-8:2-FTS	99		50 - 200						

Lab Sample ID: 380-76770-C-11-A MSD
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		60.2	68.4		ng/L		113	70 - 130	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		60.2	66.1		ng/L		110	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		60.2	64.5		ng/L		107	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		60.2	57.7		ng/L		96	70 - 130	8	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		60.2	69.6		ng/L		112	70 - 130	9	30
Perfluorodecanoic acid (PFDA)	<2.0		60.2	66.5		ng/L		110	70 - 130	4	30
Perfluorododecanoic acid (PFDoA)	<2.0		60.2	66.9		ng/L		111	70 - 130	7	30
Perfluoroheptanoic acid (PFHpA)	3.6		60.2	67.3		ng/L		106	70 - 130	0	30
Perfluorohexanesulfonic acid (PFHxS)	5.8		60.2	69.3		ng/L		105	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	28		60.2	93.5		ng/L		108	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		60.2	66.7		ng/L		109	70 - 130	7	30
Perfluorooctanesulfonic acid (PFOS)	9.6		60.2	74.4		ng/L		107	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	6.6		60.2	69.3		ng/L		104	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		60.2	63.7		ng/L		106	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	6.8		60.2	69.8		ng/L		105	70 - 130	0	30

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76770-C-11-A MSD
Matrix: Water
Analysis Batch: 70375

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 70050

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		60.2	65.9		ng/L		109	70 - 130	13	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		60.2	63.8		ng/L		106	70 - 130	6	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		60.2	63.2		ng/L		105	70 - 130	4	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		60.2	68.5		ng/L		114	70 - 130	14	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		60.2	64.3		ng/L		107	70 - 130	8	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		60.2	67.2		ng/L		112	70 - 130	5	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		60.2	66.7		ng/L		111	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	20		60.2	86.0		ng/L		110	70 - 130	7	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		60.2	66.8		ng/L		111	70 - 130	2	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		60.2	63.3		ng/L		104	70 - 130	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	MSD Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	84		50 - 200
13C5 PFHxA	90		50 - 200
13C4 PFHpA	89		50 - 200
13C8 PFOA	87		50 - 200
13C9 PFNA	85		50 - 200
13C7 PFUnA	89		50 - 200
13C2 PFDoA	90		50 - 200
13C4 PFBA	86		50 - 200
13C5 PFPeA	89		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	91		50 - 200
13C8 PFOS	86		50 - 200
13C2-4:2-FTS	99		50 - 200
13C2-6:2-FTS	90		50 - 200
13C2-8:2-FTS	89		50 - 200

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

Lab Sample ID: MBL 380-69815/21-A
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69815

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		12/29/23 11:44	12/30/23 13:29	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-69815/21-A
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69815

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		12/29/23 11:44	12/30/23 13:29	1
Surrogate	MBL	MBL	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130			12/29/23 11:44	12/30/23 13:29	1
13C2 PFHxA	115		70 - 130			12/29/23 11:44	12/30/23 13:29	1
13C2 PFDA	117		70 - 130			12/29/23 11:44	12/30/23 13:29	1
13C3-GenX	108		70 - 130			12/29/23 11:44	12/30/23 13:29	1

Lab Sample ID: LCS 380-69815/23-A
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69815

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.2	51.5		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	50.2	54.1		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.2	53.9		ng/L		107	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.2	51.6		ng/L		103	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.2	52.6		ng/L		105	70 - 130
Perfluorohexanoic acid (PFHxA)	50.2	53.9		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	50.2	54.5		ng/L		109	70 - 130
Perfluorooctanoic acid (PFOA)	50.2	53.7		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	50.2	55.1		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	50.2	54.8		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	50.2	52.2		ng/L		104	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.2	55.1		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	50.2	54.4		ng/L		108	70 - 130

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QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-69815/23-A
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69815

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Perfluorotetradecanoic acid (PFTA)	50.2	55.6		ng/L		111	70 - 130	
Perfluorotridecanoic acid (PFTrDA)	50.2	54.5		ng/L		109	70 - 130	
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	50.2	53.3		ng/L		106	70 - 130	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	50.2	53.1		ng/L		106	70 - 130	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	50.2	53.2		ng/L		106	70 - 130	
LCS LCS								
Surrogate	%Recovery	Qualifier						Limits
d5-NEtFOSAA	111							70 - 130
13C2 PFHxA	113							70 - 130
13C2 PFDA	113							70 - 130
13C3-GenX	106							70 - 130

Lab Sample ID: MRL 380-69815/22-A
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69815

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.41	J	ng/L		120	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.58	J	ng/L		139	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.56	J	ng/L		128	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.38	J	ng/L		119	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.56	J	ng/L		128	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.66	J	ng/L		133	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.69	J	ng/L		134	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.66	J	ng/L		133	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.50	J	ng/L		136	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.23	J	ng/L		125	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.66	J	ng/L		133	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.63	J	ng/L		131	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.45	J	ng/L		122	50 - 150
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.34	J	ng/L		125	50 - 150

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-69815/22-A
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69815

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.42	J	ng/L		128	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.40	J	ng/L		127	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	114		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	113		70 - 130
13C3-GenX	105		70 - 130

Lab Sample ID: 380-76600-A-1-B MS
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69815

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	51.1		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	53.2		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	52.9		ng/L		105	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	52.0		ng/L		104	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	53.5		ng/L		106	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	54.2		ng/L		108	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	55.0		ng/L		110	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		50.2	52.3		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	54.2		ng/L		108	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	54.1		ng/L		108	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	53.7		ng/L		107	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	53.8		ng/L		107	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	53.3		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	52.5		ng/L		105	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	53.5		ng/L		107	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	53.6		ng/L		107	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	51.8		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	51.1		ng/L		102	70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76600-A-1-B MS
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69815

<i>Surrogate</i>	<i>MS</i>	<i>MS</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>d5-NEtFOSAA</i>	106		70 - 130
<i>13C2 PFHxA</i>	112		70 - 130
<i>13C2 PFDA</i>	111		70 - 130
<i>13C3-GenX</i>	105		70 - 130

Lab Sample ID: 380-76600-A-1-C MSD
Matrix: Water
Analysis Batch: 69923

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 69815

<i>Analyte</i>	<i>Sample</i>	<i>Sample</i>	<i>Spike</i>	<i>MSD</i>	<i>MSD</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i>	<i>RPD</i>	<i>RPD</i>
	<i>Result</i>	<i>Qualifier</i>	<i>Added</i>	<i>Result</i>	<i>Qualifier</i>				<i>Limits</i>		<i>Limit</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	53.0		ng/L		106	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		50.2	53.1		ng/L		106	70 - 130	0	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	54.4		ng/L		108	70 - 130	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	53.0		ng/L		106	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	52.2		ng/L		104	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	54.4		ng/L		108	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	55.5		ng/L		111	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	<2.0		50.2	54.3		ng/L		108	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	57.1		ng/L		114	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		50.2	55.8		ng/L		111	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		50.2	54.1		ng/L		108	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	57.6		ng/L		115	70 - 130	7	30
Perfluorononanoic acid (PFNA)	<2.0		50.2	55.9		ng/L		111	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	54.4		ng/L		108	70 - 130	4	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	53.6		ng/L		107	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		50.2	51.9		ng/L		103	70 - 130	3	30
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		50.2	50.7		ng/L		101	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		50.2	54.7		ng/L		109	70 - 130	7	30

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>d5-NEtFOSAA</i>	110		70 - 130
<i>13C2 PFHxA</i>	117		70 - 130
<i>13C2 PFDA</i>	116		70 - 130
<i>13C3-GenX</i>	110		70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MBL 380-69928/21-A
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 69928

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		12/30/23 13:43	01/02/24 14:04	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<0.30		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		12/30/23 13:43	01/02/24 14:04	1
	MBL	MBL						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	114		70 - 130			12/30/23 13:43	01/02/24 14:04	1
13C2 PFHxA	110		70 - 130			12/30/23 13:43	01/02/24 14:04	1
13C2 PFDA	123		70 - 130			12/30/23 13:43	01/02/24 14:04	1
13C3-GenX	104		70 - 130			12/30/23 13:43	01/02/24 14:04	1

Lab Sample ID: LCS 380-69928/23-A
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	23.0		ng/L		92	70 - 130
Perfluorooctanesulfonic acid (PFOS)	25.1	26.6		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	26.2		ng/L		105	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.1		ng/L		100	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	23.9		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.7		ng/L		99	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	23.6		ng/L		94	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	25.9		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.5		ng/L		102	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: LCS 380-69928/23-A
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	25.1	25.9		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	25.1	25.2		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	25.2		ng/L		101	70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.3		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	24.1		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	25.1		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	25.1	26.5		ng/L		106	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	25.1	26.3		ng/L		105	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	25.1	25.2		ng/L		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	102		70 - 130
13C2 PFDA	103		70 - 130
13C3-GenX	98		70 - 130

Lab Sample ID: MRL 380-69928/22-A
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.26	J	ng/L		113	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.46	J	ng/L		132	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.41	J	ng/L		120	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.22	J	ng/L		111	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.48	J	ng/L		124	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.53	J	ng/L		126	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.29	J	ng/L		125	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.11	J	ng/L		119	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.43	J	ng/L		121	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.50	J	ng/L		125	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.98	J	ng/L		99	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: MRL 380-69928/22-A
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits	
Perfluorotridecanoic acid (PFTTrDA)	2.00	2.31	J	ng/L		115	50 - 150	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.25	J	ng/L		120	50 - 150	
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.38	J	ng/L		126	50 - 150	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.17	J	ng/L		115	50 - 150	
Surrogate								
	%Recovery	MRL	MRL Qualifier					Limits
d5-NEtFOSAA	100							70 - 130
13C2 PFHxA	103							70 - 130
13C2 PFDA	106							70 - 130
13C3-GenX	101							70 - 130

Lab Sample ID: 380-76662-B-1-A MS
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	24.3		ng/L		97	70 - 130
Perfluorooctanesulfonic acid (PFOS)	15		25.1	41.5		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	26.0		ng/L		104	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	25.2		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	24.1		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	4.2		25.1	30.3		ng/L		104	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	24.1		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	4.0		25.1	30.7		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	26.3		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	9.0		25.1	36.2		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	3.4		25.1	30.7		ng/L		109	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	27.6		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	27.4		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.4		ng/L		97	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.1	26.2		ng/L		104	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.1	27.0		ng/L		108	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.1	27.1		ng/L		108	70 - 130

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76662-B-1-A MS
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.1	26.0		ng/L		104	70 - 130
Surrogate									
	%Recovery	MS MS Qualifier	Limits						
d5-NEtFOSAA	97		70 - 130						
13C2 PFHxA	112		70 - 130						
13C2 PFDA	104		70 - 130						
13C3-GenX	105		70 - 130						

Lab Sample ID: 380-76662-C-1-A MSD
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 69928

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.3	23.1		ng/L		91	70 - 130	5	30
Perfluorooctanesulfonic acid (PFOS)	15		25.3	42.3		ng/L		107	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.3	26.5		ng/L		105	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.3	25.7		ng/L		102	70 - 130	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.3	24.0		ng/L		95	70 - 130	0	30
Perfluorohexanoic acid (PFHxA)	4.2		25.3	30.2		ng/L		102	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.3	23.6		ng/L		93	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	4.0		25.3	30.5		ng/L		105	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		25.3	25.6		ng/L		101	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	9.0		25.3	36.3		ng/L		108	70 - 130	0	30
Perfluorobutanesulfonic acid (PFBS)	3.4		25.3	30.4		ng/L		107	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.3	27.8		ng/L		103	70 - 130	1	30
Perfluorononanoic acid (PFNA)	<2.0		25.3	26.3		ng/L		101	70 - 130	4	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.3	24.5		ng/L		97	70 - 130	0	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		25.3	26.0		ng/L		103	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		25.3	27.8		ng/L		110	70 - 130	3	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		25.3	27.5		ng/L		109	70 - 130	2	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		25.3	25.9		ng/L		102	70 - 130	1	30
Surrogate											
	%Recovery	MSD MSD Qualifier	Limits								
d5-NEtFOSAA	96		70 - 130								
13C2 PFHxA	108		70 - 130								
13C2 PFDA	104		70 - 130								

QC Sample Results

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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

Lab Sample ID: 380-76662-C-1-A MSD
Matrix: Water
Analysis Batch: 69995

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 69928

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C3-GenX	98		70 - 130

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QC Association Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

GC/MS Semi VOA

Prep Batch: 69766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-76545-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	
MB 380-69766/17-A	Method Blank	Total/NA	Water	525.2	
LCS 380-69766/20-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-69766/18-A	Lab Control Sample	Total/NA	Water	525.2	
380-76542-AF-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-76543-N-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 69824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	69766
380-76545-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	69766
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	69766
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	69766
MB 380-69766/17-A	Method Blank	Total/NA	Water	525.2	69766
LCS 380-69766/20-A	Lab Control Sample	Total/NA	Water	525.2	69766
MRL 380-69766/18-A	Lab Control Sample	Total/NA	Water	525.2	69766
380-76542-AF-1-A MS	Matrix Spike	Total/NA	Water	525.2	69766
380-76543-N-1-A DU	Duplicate	Total/NA	Water	525.2	69766

LCMS

Prep Batch: 69815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-76545-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-76545-9	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-76545-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
MBL 380-69815/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-69815/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-69815/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-76600-A-1-B MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-76600-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 69923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	69815
380-76545-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	69815
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	69815
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	69815
380-76545-9	FB MOANALUA WELLS	Total/NA	Water	537.1	69815
380-76545-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	69815
MBL 380-69815/21-A	Method Blank	Total/NA	Water	537.1	69815
LCS 380-69815/23-A	Lab Control Sample	Total/NA	Water	537.1	69815
MRL 380-69815/22-A	Lab Control Sample	Total/NA	Water	537.1	69815
380-76600-A-1-B MS	Matrix Spike	Total/NA	Water	537.1	69815
380-76600-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	69815

QC Association Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

LCMS

Prep Batch: 69928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-69928/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-69928/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-69928/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-76662-B-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-76662-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 69995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	69928
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	69928
MBL 380-69928/21-A	Method Blank	Total/NA	Water	537.1	69928
LCS 380-69928/23-A	Lab Control Sample	Total/NA	Water	537.1	69928
MRL 380-69928/22-A	Lab Control Sample	Total/NA	Water	537.1	69928
380-76662-B-1-A MS	Matrix Spike	Total/NA	Water	537.1	69928
380-76662-C-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	69928

Prep Batch: 70028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-70028/19-A	Method Blank	Total/NA	Water	533	
LCS 380-70028/21-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-70028/20-A	Lab Control Sample	Total/NA	Water	533	
380-76523-B-1-A MS	Matrix Spike	Total/NA	Water	533	
380-76524-B-1-A DU	Duplicate	Total/NA	Water	533	

Prep Batch: 70050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-76545-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	
380-76545-9	FB MOANALUA WELLS	Total/NA	Water	533	
380-76545-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
MBL 380-70050/21-A	Method Blank	Total/NA	Water	533	
LCS 380-70050/23-A	Lab Control Sample	Total/NA	Water	533	
MRL 380-70050/22-A	Lab Control Sample	Total/NA	Water	533	
380-76770-B-11-A MS	Matrix Spike	Total/NA	Water	533	
380-76770-C-11-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 70375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-1	MOANALUA WELLS	Total/NA	Drinking Water	533	70050
380-76545-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	70050
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	70050
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	70050
380-76545-9	FB MOANALUA WELLS	Total/NA	Water	533	70050
380-76545-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	70050
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	70050

QC Association Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

LCMS (Continued)

Analysis Batch: 70375 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-70050/21-A	Method Blank	Total/NA	Water	533	70050
LCS 380-70050/23-A	Lab Control Sample	Total/NA	Water	533	70050
MRL 380-70050/22-A	Lab Control Sample	Total/NA	Water	533	70050
380-76770-B-11-A MS	Matrix Spike	Total/NA	Water	533	70050
380-76770-C-11-A MSD	Matrix Spike Duplicate	Total/NA	Water	533	70050

Analysis Batch: 70377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	70028
MBL 380-70028/19-A	Method Blank	Total/NA	Water	533	70028
LCS 380-70028/21-A	Lab Control Sample	Total/NA	Water	533	70028
MRL 380-70028/20-A	Lab Control Sample	Total/NA	Water	533	70028
380-76523-B-1-A MS	Matrix Spike	Total/NA	Water	533	70028
380-76524-B-1-A DU	Duplicate	Total/NA	Water	533	70028

Lab Chronicle

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-76545-1

Date Collected: 12/26/23 10:04

Matrix: Drinking Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69766	OTM3	EA POM	12/29/23 09:05
Total/NA	Analysis	525.2		1	69824	UPAC	EA POM	12/29/23 18:16
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/04/24 23:37
Total/NA	Prep	537.1 DW			69815	A5GB	EA POM	12/29/23 11:44
Total/NA	Analysis	537.1		1	69923	R6YA	EA POM	12/30/23 16:18

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-2

Date Collected: 12/26/23 11:06

Matrix: Drinking Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69766	OTM3	EA POM	12/29/23 09:05
Total/NA	Analysis	525.2		1	69824	UPAC	EA POM	12/29/23 18:36
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/04/24 23:47
Total/NA	Prep	537.1 DW			69815	A5GB	EA POM	12/29/23 11:44
Total/NA	Analysis	537.1		1	69923	R6YA	EA POM	12/30/23 16:28

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-3

Date Collected: 12/26/23 11:33

Matrix: Drinking Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69766	OTM3	EA POM	12/29/23 09:05
Total/NA	Analysis	525.2		1	69824	UPAC	EA POM	12/29/23 18:56
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/04/24 23:56
Total/NA	Prep	537.1 DW			69815	A5GB	EA POM	12/29/23 11:44
Total/NA	Analysis	537.1		1	69923	R6YA	EA POM	12/30/23 16:38

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-4

Date Collected: 12/26/23 10:32

Matrix: Drinking Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			69766	OTM3	EA POM	12/29/23 09:05
Total/NA	Analysis	525.2		1	69824	UPAC	EA POM	12/29/23 19:16
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/05/24 00:06
Total/NA	Prep	537.1 DW			69815	A5GB	EA POM	12/29/23 11:44
Total/NA	Analysis	537.1		1	69923	R6YA	EA POM	12/30/23 16:47

Lab Chronicle

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-76545-9

Date Collected: 12/26/23 10:04

Matrix: Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/05/24 00:15
Total/NA	Prep	537.1 DW			69815	A5GB	EA POM	12/29/23 11:44
Total/NA	Analysis	537.1		1	69923	R6YA	EA POM	12/30/23 16:57

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-76545-10

Date Collected: 12/26/23 11:06

Matrix: Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/05/24 00:25
Total/NA	Prep	537.1 DW			69815	A5GB	EA POM	12/29/23 11:44
Total/NA	Analysis	537.1		1	69923	R6YA	EA POM	12/30/23 17:07

Client Sample ID: FB AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-76545-11

Date Collected: 12/26/23 11:33

Matrix: Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			70050	AUY6	EA POM	01/03/24 11:00
Total/NA	Analysis	533		1	70375	SZ9R	EA POM	01/05/24 00:44
Total/NA	Prep	537.1 DW			69928	A5GB	EA POM	12/30/23 13:43
Total/NA	Analysis	537.1		1	69995	R6YA	EA POM	01/02/24 16:53

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-76545-12

Date Collected: 12/26/23 10:32

Matrix: Water

Date Received: 12/28/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			70028	T2EP	EA POM	01/03/24 12:25
Total/NA	Analysis	533		1	70377	R6YA	EA POM	01/04/24 20:16
Total/NA	Prep	537.1 DW			69928	A5GB	EA POM	12/30/23 13:43
Total/NA	Analysis	537.1		1	69995	R6YA	EA POM	01/02/24 17:02

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: 380-76545-1
SDG: 525.2, 533, 537.1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone

Accreditation/Certification Summary

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

Job ID: 380-76545-1
 SDG: 525.2, 533, 537.1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
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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	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbutylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin
533	533	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Drinking Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)

Accreditation/Certification Summary

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

Job ID: 380-76545-1
 SDG: 525.2, 533, 537.1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

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

Method Summary

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

Job ID: 380-76545-1
SDG: 525.2, 533, 537.1

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: 380-76545-1
SDG: 525.2, 533, 537.1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-76545-1	MOANALUA WELLS	Drinking Water	12/26/23 10:04	12/28/23 09:20	HI0000331
380-76545-2	AIEA GULCH WELLS PUMP 2	Drinking Water	12/26/23 11:06	12/28/23 09:20	HI0000331
380-76545-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	12/26/23 11:33	12/28/23 09:20	HI0000331
380-76545-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	12/26/23 10:32	12/28/23 09:20	HI0000331
380-76545-9	FB MOANALUA WELLS	Water	12/26/23 10:04	12/28/23 09:20	
380-76545-10	FB AIEA GULCH WELLS PUMP 2	Water	12/26/23 11:06	12/28/23 09:20	
380-76545-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	12/26/23 11:33	12/28/23 09:20	
380-76545-12	FB HALAWA WELLS UNITS 1 & 2 P1	Water	12/26/23 10:32	12/28/23 09:20	


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Monrovia, CA (Suite 100)
750 Royal Oaks Drive Suite 100
Monrovia CA 91016
Phone (626) 366-1100

Chain of Custody Record

eurofins

Client Information		Lab PM		Carrier Tracking No(s)		COC No																									
Client Contact: Dr Ron Fenstermacher 808-748-5840		Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofins.com		State of Origin		380-27941-2757 2																									
Company		PWSID		Analysis Requested		Page																									
City & County of Honolulu Address 630 South Beretania Street, Chemistry Lab City Honolulu State, Zip HI, 96843 Phone 808-748-5091 (tel) Email rfenstermacher@hbws.org Project Name RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site S50W#		Due Date Requested TAT Requested (days) Compliance Project: Δ No PO # C20525101 exp 05312023 WO # Project # 38001111 SSOW#		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 6015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 6915 Diesel LL (EAL) and Motor Oil SUBCONTRACT - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 537 1 DW_PREC - 537 1 Full List 533 - All Analytes		Page Page 1 of 2																									
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (w=water, s=solid, o=washbill, t=tissue, h=hair)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		SUBCONTRACT - 6015 Gas (Purgeable) LL (EAL)		SUBCONTRACT - (MOD) 525plus PLUS TICs		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		537 1 DW_PREC - 537 1 Full List		533 - All Analytes		Total Number of Containers		Special Instructions/Note			
MOANALUA WELLS AIEA GULCH WELLS PUMP2 AIEA WELLS PUMPS 1&2 (260) P2 HALAWA WELLS UNITS 1&2 P1		26-Dec-2023 26-Dec-2023 26-Dec-2023 26-Dec-2023		1004 1106 1133 1032		G G G G		Water Water Water Water		X X X X		X X X X		2 2 2 2		2 2 2 2		2 2 2 2		2 2 2 2		2 2 2 2		Y N Y N		N N Y N		chlorinated chlorinated		chlorinated chlorinated	
TB MOANALUA WELLS TB AIEA GULCH WELLS PUMP2 TB AIEA WELLS PUMPS 1&2 (260) TB HALAWA WELLS UNITS 1&2		26-Dec-2023 26-Dec-2023 26-Dec-2023 26-Dec-2023		1004 1106 1133 1032		G G G G		Water Water Water Water		X X X X		X X X X		2 2 2 2		2 2 2 2		2 2 2 2		2 2 2 2		Y N Y N		chlorinated chlorinated		chlorinated chlorinated					



380-76545 COC

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested I, II, III, IV, Other (specify)		Special Instructions/QC Requirements FED EX 1 7746 1676 6764 2 7746 1676 6763	
Empty Kit Relinquished by Relinquished by Bailey Relinquished by		Date 21 Dec 2023 1400 Date/Time Date/Time Date/Time	
Relinquished by Date/Time Date/Time Date/Time		Received by Received by Received by	
Company HBWS Company Company		Method of Shipment Date/Time Date/Time Date/Time	
Company Company Company		Company Company Company	
Cycler Temperature(s) °C and Other Remarks			



Eurofins Eaton Analytical Pomona

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

Chain of Custody Record



eurofins

Enviro

Loc: 380
76545

Client Information (Sub Contract Lab)		Sampler:	Lab PM: Arada, Rachelle		Carrier Tracking No(s):	COC No: 380-97475.1																
Client Contact: Shipping/Receiving		Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com		State of Origin: Hawaii	Page: Page 1 of 1																
Company: Eurofins Environment Testing Southwest,			Accreditations Required (See note): State - Hawaii			Job #: 380-76545-1																
Address: 2841 Dow Avenue, Suite 100,		Due Date Requested: 1/18/2024		Analysis Requested				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)														
City: Tustin		TAT Requested (days):																				
State, Zip: CA, 92780		PO #:		<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>Perform MS/MSD (Yes or No)</td> <td>8015B_GRO_LL/6030C (MOD) GRO</td> <td>8015B_DRO_LL_CS/3510C_LL_HNL Ranges: C10-C24/C24-C36/C8-C18</td> <td>8015B_DAI/ Ethanol</td> <td>8015B_GRO_LL/6030C GRO</td> <td rowspan="2">Total Number of containers</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_GRO_LL/6030C (MOD) GRO	8015B_DRO_LL_CS/3510C_LL_HNL Ranges: C10-C24/C24-C36/C8-C18	8015B_DAI/ Ethanol	8015B_GRO_LL/6030C GRO	Total Number of containers							Other:	
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_GRO_LL/6030C (MOD) GRO	8015B_DRO_LL_CS/3510C_LL_HNL Ranges: C10-C24/C24-C36/C8-C18					8015B_DAI/ Ethanol	8015B_GRO_LL/6030C GRO	Total Number of containers												
Phone: 714-895-5494(Tel)		WO #:																				
Email:		Project #: 38001111																				
Project Name: RED-HILL		SSOW#:																				
Site: Honolulu BWS Sites																						
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Special Instructions/Note:															
MOANALUA WELLS (380-76545-1)		12/26/23	10:04 Hawaiian		Water		X	X	X	6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.											
AIEA GULCH WELLS PUMP 2 (380-76545-2)		12/26/23	11:06 Hawaiian		Water		X	X	X	6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.											
AIEA WELLS PUMPS 1&2 (260) P2 (380-76545-3)		12/26/23	11:33 Hawaiian		Water		X	X	X	6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.											
HALAWA WELLS UNITS 1 & 2 P1 (380-76545-4)		12/26/23	10:32 Hawaiian		Water		X	X	X	6	MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.											
TB MOANALUA WELLS (380-76545-5)		12/26/23	10:04 Hawaiian		Water				X	2	MRLs are needed.											
TB AIEA GULCH WELLS PUMP 2 (380-76545-6)		12/26/23	11:06 Hawaiian		Water				X	2	MRLs are needed.											
TB AIEA WELLS PUMPS 1&2 (260) P2 (380-76545-7)		12/26/23	11:33 Hawaiian		Water				X	2	MRLs are needed.											
TB HALAWA WELLS UNITS 1 & 2 P1 (380-76545-8)		12/26/23	10:32 Hawaiian		Water				X	2	MRLs are needed.											
Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.																						
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																	
Unconfirmed					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																	
Deliverable Requested: I, II, III, IV, Other (specify)			Primary Deliverable Rank: 2		Special Instructions/QC Requirements:																	
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:															
Relinquished by: Michelle As MD			Date/Time: 12/28/23 15:05		Company EEA-Pom		Received by: ERWIN VIDAL		Date/Time: 12/28/23 15:05		Company DCS											
Relinquished by: ERWIN VIDAL			Date/Time: 12/28/23 15:05		Company DES		Received by: [Signature] EC		Date/Time: 12/28/23 16:05		Company B3C											
Relinquished by: E.J.			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: 30/29 502																	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-76545-1
SDG Number: 525.2, 533, 537.1

Login Number: 76545
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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

