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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
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Generated 9/14/2023 11:54:44 AM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-60596-1

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: 380-60596-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control limits.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 380-60596-1

Job ID: 380-60596-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-60596-1

Receipt

The samples were received on 8/25/2023 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 1.1° C and 4.1° C.

GC/MS Semi VOA

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

LCMS

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

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

Organic Prep

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

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Detection Summary

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

Date Collected: 08/23/23 10:00

Matrix: Drinking Water

Date Received: 08/25/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
2,4'-DDD	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
2,4'-DDE	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
2,4'-DDT	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
2,4-Dinitrotoluene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
2,6-Dinitrotoluene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
2-Methylnaphthalene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
4,4'-DDD	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
4,4'-DDE	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
4,4'-DDT	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Acenaphthene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Acenaphthylene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Acetochlor	<0.10	*+	0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Alachlor	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
alpha-BHC	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
alpha-Chlordane	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Anthracene	<0.020		0.020	ug/L		08/26/23 20:57	08/28/23 20:00	1
Atrazine	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Benz(a)anthracene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Benzo[a]pyrene	<0.020		0.020	ug/L		08/26/23 20:57	08/28/23 20:00	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		08/26/23 20:57	08/28/23 20:00	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		08/26/23 20:57	08/28/23 20:00	1
beta-BHC	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		08/26/23 20:57	08/28/23 20:00	1
Bromacil	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Butachlor	<0.050	*+	0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Butylbenzylphthalate	<0.50		0.50	ug/L		08/26/23 20:57	08/28/23 20:00	1
Chlorobenzilate	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Chloroneb	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Chlorothalonil (Draconil, Bravo)	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Chlorpyrifos	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Chrysene	<0.020		0.020	ug/L		08/26/23 20:57	08/28/23 20:00	1
delta-BHC	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		08/26/23 20:57	08/28/23 20:00	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Diclorvos (DDVP)	<0.050	^3+ *+	0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Dieldrin	<0.20		0.20	ug/L		08/26/23 20:57	08/28/23 20:00	1
Diethylphthalate	<0.50		0.50	ug/L		08/26/23 20:57	08/28/23 20:00	1
Dimethylphthalate	<0.50		0.50	ug/L		08/26/23 20:57	08/28/23 20:00	1
Di-n-butyl phthalate	<1.0		1.0	ug/L		08/26/23 20:57	08/28/23 20:00	1
Di-n-octyl phthalate	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Endosulfan I (Alpha)	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Endosulfan II (Beta)	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Endosulfan sulfate	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Endrin	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Endrin aldehyde	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
EPTC	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Fluoranthene	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1

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Client Sample Results

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

Date Collected: 08/23/23 10:00

Matrix: Drinking Water

Date Received: 08/25/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
gamma-Chlordane	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Heptachlor	<0.040		0.040	ug/L		08/26/23 20:57	08/28/23 20:00	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Hexachlorobenzene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Isophorone	<0.50		0.50	ug/L		08/26/23 20:57	08/28/23 20:00	1
Lindane	<0.040		0.040	ug/L		08/26/23 20:57	08/28/23 20:00	1
Malathion	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Methoxychlor	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Metolachlor	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Molinate	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Naphthalene	<0.30		0.30	ug/L		08/26/23 20:57	08/28/23 20:00	1
Parathion	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Pendimethalin (Penoxaline)	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Phenanthrene	<0.040		0.040	ug/L		08/26/23 20:57	08/28/23 20:00	1
Propachlor	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Pyrene	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Simazine	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Terbacil	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Terbutylazine	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1
Thiobencarb	<0.20		0.20	ug/L		08/26/23 20:57	08/28/23 20:00	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		08/26/23 20:57	08/28/23 20:00	1
trans-Nonachlor	<0.050		0.050	ug/L		08/26/23 20:57	08/28/23 20:00	1
Trifluralin	<0.10		0.10	ug/L		08/26/23 20:57	08/28/23 20:00	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	08/26/23 20:57	08/28/23 20:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	08/26/23 20:57	08/28/23 20:00	1
Perylene-d12	100		70 - 130	08/26/23 20:57	08/28/23 20:00	1
Triphenylphosphate	124		70 - 130	08/26/23 20:57	08/28/23 20:00	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		09/08/23 10:45	09/11/23 20:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1

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Client Sample Results

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

Date Collected: 08/23/23 10:00

Matrix: Drinking Water

Date Received: 08/25/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoropentanoic acid (PFPeA)	2.6		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C6 PFDA	108		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C5 PFHxA	105		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C4 PFHpA	110		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C8 PFOA	109		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C9 PFNA	114		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C7 PFUnA	109		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C2 PFDoA	105		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C4 PFBA	106		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C5 PFPeA	116		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C3 PFBS	101		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C3 PFHxS	107		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C8 PFOS	105		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C2-4:2-FTS	125		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C2-6:2-FTS	116		50 - 200	09/08/23 10:45	09/11/23 20:09	1
13C2-8:2-FTS	119		50 - 200	09/08/23 10:45	09/11/23 20:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

Date Collected: 08/23/23 10:00

Matrix: Drinking Water

Date Received: 08/25/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 04:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130			08/26/23 15:29	08/29/23 04:33	1
13C2 PFHxA	107		70 - 130			08/26/23 15:29	08/29/23 04:33	1
13C2 PFDA	115		70 - 130			08/26/23 15:29	08/29/23 04:33	1
13C3-GenX	110		70 - 130			08/26/23 15:29	08/29/23 04:33	1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-2

Date Collected: 08/23/23 10:00

Matrix: Water

Date Received: 08/25/23 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		09/08/23 10:45	09/11/23 20:38	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-60596-1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-2

Date Collected: 08/23/23 10:00

Matrix: Water

Date Received: 08/25/23 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-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/08/23 10:45	09/11/23 20:38	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	86		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C6 PFDA	105		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C5 PFHxA	104		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C4 PFHpA	105		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C8 PFOA	104		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C9 PFNA	110		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C7 PFUnA	101		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C2 PFDoA	101		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C4 PFBA	103		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C5 PFPeA	101		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C3 PFBS	96		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C3 PFHxS	97		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C8 PFOS	103		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C2-4:2-FTS	115		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C2-6:2-FTS	106		50 - 200			09/08/23 10:45	09/11/23 20:38	1
13C2-8:2-FTS	120		50 - 200			09/08/23 10:45	09/11/23 20:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1

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Client Sample Results

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

Job ID: 380-60596-1

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-2

Date Collected: 08/23/23 10:00

Matrix: Water

Date Received: 08/25/23 09:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/26/23 15:29	08/29/23 07:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130			08/26/23 15:29	08/29/23 07:28	1
13C2 PFHxA	109		70 - 130			08/26/23 15:29	08/29/23 07:28	1
13C2 PFDA	120		70 - 130			08/26/23 15:29	08/29/23 07:28	1
13C3-GenX	111		70 - 130			08/26/23 15:29	08/29/23 07:28	1

Action Limit Summary

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

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	<0.050		ug/L	2	0.050	525.2	Total/NA
Atrazine	<0.050		ug/L	3	0.050	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.60		ug/L	6	0.60	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.60		ug/L	400	0.60	525.2	Total/NA
Endrin	<0.10		ug/L	2	0.10	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.050		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	<0.050		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	<0.050		ug/L	50	0.050	525.2	Total/NA
Lindane	<0.040		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	<0.10		ug/L	40	0.10	525.2	Total/NA
Simazine	<0.050		ug/L	4	0.050	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-60596-1

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)
380-60596-1	HALAWA WELLS UNITS 1 & 2	98	100	124

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)
380-60379-I-1-A DU	Duplicate	100	94	114
380-60360-AN-1-A MS	Matrix Spike	99	99	114
LCS 380-53397/23-A	Lab Control Sample	100	95	111
LCS 380-53397/24-A	Lab Control Sample Dup	101	99	118
MB 380-53397/21-A	Method Blank	99	90	112
MRL 380-53397/22-A	Lab Control Sample	100	77	94

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)
380-60596-1	HALAWA WELLS UNITS 1 & 2	107	107	115	110
380-60596-1 DU	HALAWA WELLS UNITS 1 & 2	112	111	122	118

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-60559-U-1-A MS	Matrix Spike	102	110	114	115
380-60596-2	FB HALAWA WELLS UNITS 1 & 2	105	109	120	111
LCS 380-53390/23-A	Lab Control Sample	103	104	115	109
LCS 380-53390/24-A	Lab Control Sample Dup	101	107	113	107
MBL 380-53390/21-A	Method Blank	107	106	120	103
MRL 380-53390/22-A	Lab Control Sample	105	104	114	106

Eurofins Eaton Analytical Pomona

Surrogate Summary

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

Job ID: 380-60596-1

Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

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

Isotope Dilution Summary

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

Job ID: 380-60596-1

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)	PFDaA (50-200)
380-60596-1	HALAWA WELLS UNITS 1 & 2	94	108	105	110	109	114	109	105
380-60596-1 MS	HALAWA WELLS UNITS 1 & 2	96	106	98	100	103	111	100	102
380-60596-1 MSD	HALAWA WELLS UNITS 1 & 2	97	108	97	100	102	108	103	105

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)
380-60596-1	HALAWA WELLS UNITS 1 & 2	106	116	101	107	105	125	116	119
380-60596-1 MS	HALAWA WELLS UNITS 1 & 2	101	109	95	95	102	107	102	115
380-60596-1 MSD	HALAWA WELLS UNITS 1 & 2	97	105	98	99	104	108	103	112

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFDaA = 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)	PFDaA (50-200)
380-60596-2	FB HALAWA WELLS UNITS 1 &	86	105	104	105	104	110	101	101
LCS 380-54975/23-A	Lab Control Sample	99	109	100	105	104	111	104	112
LCSD 380-54975/24-A	Lab Control Sample Dup	99	117	109	106	105	117	107	111
MBL 380-54975/21-A	Method Blank	85	108	103	108	104	109	99	103
MRL 380-54975/22-A	Lab Control Sample	86	106	103	108	103	106	99	108

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)
380-60596-2	FB HALAWA WELLS UNITS 1 &	103	101	96	97	103	115	106	120
LCS 380-54975/23-A	Lab Control Sample	107	109	98	98	105	106	107	124
LCSD 380-54975/24-A	Lab Control Sample Dup	101	103	97	98	105	107	105	122
MBL 380-54975/21-A	Method Blank	105	108	96	96	101	115	106	128
MRL 380-54975/22-A	Lab Control Sample	101	103	100	103	102	116	111	127

Surrogate Legend

HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

Job ID: 380-60596-1

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

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- 4
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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MB 380-53397/21-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53397

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
2,4'-DDD	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
2,4'-DDE	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
2,4'-DDT	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
2-Methylnaphthalene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
4,4'-DDD	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
4,4'-DDE	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
4,4'-DDT	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Acenaphthene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Acenaphthylene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Acetochlor	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Alachlor	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
alpha-BHC	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
alpha-Chlordane	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Anthracene	<0.020		0.020	ug/L		08/26/23 18:56	08/28/23 14:16	1
Atrazine	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Benz(a)anthracene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Benzo[a]pyrene	<0.020		0.020	ug/L		08/26/23 18:56	08/28/23 14:16	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		08/26/23 18:56	08/28/23 14:16	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		08/26/23 18:56	08/28/23 14:16	1
beta-BHC	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		08/26/23 18:56	08/28/23 14:16	1
Bromacil	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Butachlor	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Butylbenzylphthalate	<0.49		0.49	ug/L		08/26/23 18:56	08/28/23 14:16	1
Chlorobenzilate	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Chloroneb	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Chlorpyrifos	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Chrysene	<0.020		0.020	ug/L		08/26/23 18:56	08/28/23 14:16	1
delta-BHC	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		08/26/23 18:56	08/28/23 14:16	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Dieldrin	<0.20		0.20	ug/L		08/26/23 18:56	08/28/23 14:16	1
Diethylphthalate	<0.49		0.49	ug/L		08/26/23 18:56	08/28/23 14:16	1
Dimethylphthalate	<0.49		0.49	ug/L		08/26/23 18:56	08/28/23 14:16	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		08/26/23 18:56	08/28/23 14:16	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Endosulfan sulfate	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Endrin	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Endrin aldehyde	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
EPTC	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MB 380-53397/21-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53397

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Fluorene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
gamma-Chlordane	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Heptachlor	<0.039		0.039	ug/L		08/26/23 18:56	08/28/23 14:16	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Hexachlorobenzene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Isophorone	<0.49		0.49	ug/L		08/26/23 18:56	08/28/23 14:16	1
Lindane	<0.039		0.039	ug/L		08/26/23 18:56	08/28/23 14:16	1
Malathion	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Methoxychlor	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Metolachlor	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Molinate	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Naphthalene	<0.30		0.30	ug/L		08/26/23 18:56	08/28/23 14:16	1
Parathion	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Phenanthrene	<0.039		0.039	ug/L		08/26/23 18:56	08/28/23 14:16	1
Propachlor	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Pyrene	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Simazine	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Terbacil	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Terbutylazine	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1
Thiobencarb	<0.20		0.20	ug/L		08/26/23 18:56	08/28/23 14:16	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		08/26/23 18:56	08/28/23 14:16	1
trans-Nonachlor	<0.049		0.049	ug/L		08/26/23 18:56	08/28/23 14:16	1
Trifluralin	<0.099		0.099	ug/L		08/26/23 18:56	08/28/23 14:16	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane, 2-methyl-	0.662	T J N	ug/L		2.60	6975-98-0	08/26/23 18:56	08/28/23 14:16	1
Tetradecanoic acid	2.97	T J N	ug/L		5.84	544-63-8	08/26/23 18:56	08/28/23 14:16	1
Octadecanoic acid	1.50	T J N	ug/L		6.52	57-11-4	08/26/23 18:56	08/28/23 14:16	1
1,4-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	0.608	T J N	ug/L		9.91	6422-86-2	08/26/23 18:56	08/28/23 14:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	08/26/23 18:56	08/28/23 14:16	1
Perylene-d12	90		70 - 130	08/26/23 18:56	08/28/23 14:16	1
Triphenylphosphate	112		70 - 130	08/26/23 18:56	08/28/23 14:16	1

Lab Sample ID: LCS 380-53397/23-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.97	1.96		ug/L		100	70 - 130
2,4'-DDD	1.97	2.07		ug/L		105	70 - 130
2,4'-DDE	1.97	1.91		ug/L		97	70 - 130

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCS 380-53397/23-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDT	1.97	2.13		ug/L		108	70 - 130
2,4-Dinitrotoluene	1.97	2.24		ug/L		114	70 - 130
2,6-Dinitrotoluene	1.97	2.21		ug/L		112	70 - 130
2-Methylnaphthalene	1.97	1.97		ug/L		100	70 - 130
4,4'-DDD	1.97	2.03		ug/L		103	70 - 130
4,4'-DDE	1.97	1.98		ug/L		101	70 - 130
4,4'-DDT	1.97	2.17		ug/L		110	70 - 130
Acenaphthene	1.97	1.92		ug/L		97	70 - 130
Acenaphthylene	1.97	2.03		ug/L		103	70 - 130
Acetochlor	1.97	2.54		ug/L		129	70 - 130
Alachlor	1.97	2.25		ug/L		114	70 - 130
alpha-BHC	1.97	2.08		ug/L		106	70 - 130
alpha-Chlordane	1.97	2.07		ug/L		105	70 - 130
Anthracene	1.97	1.95		ug/L		99	70 - 130
Atrazine	1.97	2.13		ug/L		108	70 - 130
Benz(a)anthracene	1.97	2.11		ug/L		107	70 - 130
Benzo[a]pyrene	1.97	2.20		ug/L		112	70 - 130
Benzo[b]fluoranthene	1.97	2.25		ug/L		114	70 - 130
Benzo[g,h,i]perylene	1.97	2.36		ug/L		120	70 - 130
Benzo[k]fluoranthene	1.97	2.27		ug/L		115	70 - 130
beta-BHC	1.97	2.08		ug/L		106	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	1.90		ug/L		96	70 - 130
Bromacil	1.97	2.36		ug/L		120	70 - 130
Butachlor	1.97	2.49		ug/L		127	70 - 130
Butylbenzylphthalate	1.97	2.10		ug/L		107	70 - 130
Chlorobenzilate	1.97	2.38		ug/L		121	70 - 130
Chloroneb	1.97	2.08		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	1.89		ug/L		96	70 - 130
Chlorpyrifos	1.97	2.25		ug/L		114	70 - 130
Chrysene	1.97	2.11		ug/L		107	70 - 130
delta-BHC	1.97	2.05		ug/L		104	70 - 130
Di(2-ethylhexyl)adipate	1.97	1.97		ug/L		100	70 - 130
Dibenz(a,h)anthracene	1.97	2.38		ug/L		121	70 - 130
Diclorvos (DDVP)	1.97	2.66	*+	ug/L		135	70 - 130
Dieldrin	1.97	1.97		ug/L		100	70 - 130
Diethylphthalate	1.97	2.18		ug/L		111	70 - 130
Dimethylphthalate	1.97	2.20		ug/L		112	70 - 130
Di-n-butyl phthalate	3.94	4.32		ug/L		110	70 - 130
Di-n-octyl phthalate	1.97	1.79		ug/L		91	70 - 130
Endosulfan I (Alpha)	1.97	1.93		ug/L		98	70 - 130
Endosulfan II (Beta)	1.97	2.21		ug/L		112	70 - 130
Endosulfan sulfate	1.97	1.99		ug/L		101	70 - 130
Endrin	1.97	2.25		ug/L		114	70 - 130
Endrin aldehyde	1.97	1.94		ug/L		99	70 - 130
EPTC	1.97	2.22		ug/L		113	70 - 130
Fluoranthene	1.97	2.21		ug/L		112	70 - 130
Fluorene	1.97	2.15		ug/L		109	70 - 130
gamma-Chlordane	1.97	2.17		ug/L		110	70 - 130
Heptachlor	1.97	2.17		ug/L		110	70 - 130

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCS 380-53397/23-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor epoxide (isomer B)	1.97	2.23		ug/L		114	70 - 130
Hexachlorobenzene	1.97	1.99		ug/L		101	70 - 130
Hexachlorocyclopentadiene	1.97	2.15		ug/L		109	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.39		ug/L		122	70 - 130
Isophorone	1.97	2.04		ug/L		103	70 - 130
Lindane	1.97	2.06		ug/L		105	70 - 130
Malathion	1.97	2.30		ug/L		117	70 - 130
Methoxychlor	1.97	2.31		ug/L		117	70 - 130
Metolachlor	1.97	2.41		ug/L		122	70 - 130
Molinate	1.97	2.26		ug/L		115	70 - 130
Naphthalene	1.97	1.85		ug/L		94	70 - 130
Parathion	1.97	2.52		ug/L		128	70 - 130
Pendimethalin (Penoxaline)	1.97	2.15		ug/L		109	70 - 130
Phenanthrene	1.97	1.94		ug/L		99	70 - 130
Propachlor	1.97	2.18		ug/L		111	70 - 130
Pyrene	1.97	2.16		ug/L		110	70 - 130
Simazine	1.97	2.28		ug/L		116	70 - 130
Terbacil	1.97	2.20		ug/L		112	70 - 130
Terbutylazine	1.97	2.31		ug/L		117	70 - 130
Thiobencarb	1.97	2.08		ug/L		106	70 - 130
trans-Nonachlor	1.97	2.00		ug/L		102	70 - 130
Trifluralin	1.97	1.96		ug/L		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	95		70 - 130
Triphenylphosphate	111		70 - 130

Lab Sample ID: LCSD 380-53397/24-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.97	1.95		ug/L		99	70 - 130	0	20
2,4'-DDD	1.97	2.14		ug/L		109	70 - 130	3	20
2,4'-DDE	1.97	1.96		ug/L		99	70 - 130	3	20
2,4'-DDT	1.97	2.18		ug/L		110	70 - 130	2	20
2,4-Dinitrotoluene	1.97	2.18		ug/L		110	70 - 130	3	20
2,6-Dinitrotoluene	1.97	2.21		ug/L		112	70 - 130	0	20
2-Methylnaphthalene	1.97	1.97		ug/L		100	70 - 130	0	20
4,4'-DDD	1.97	2.06		ug/L		105	70 - 130	1	20
4,4'-DDE	1.97	2.03		ug/L		103	70 - 130	2	20
4,4'-DDT	1.97	2.19		ug/L		111	70 - 130	1	20
Acenaphthene	1.97	1.91		ug/L		97	70 - 130	1	20
Acenaphthylene	1.97	2.03		ug/L		103	70 - 130	0	20
Acetochlor	1.97	2.66	*+	ug/L		135	70 - 130	5	20
Alachlor	1.97	2.38		ug/L		121	70 - 130	6	20
alpha-BHC	1.97	2.04		ug/L		104	70 - 130	2	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCSD 380-53397/24-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
alpha-Chlordane	1.97	2.14		ug/L		108	70 - 130	3	20	
Anthracene	1.97	1.96		ug/L		99	70 - 130	1	20	
Atrazine	1.97	2.11		ug/L		107	70 - 130	1	20	
Benz(a)anthracene	1.97	2.19		ug/L		111	70 - 130	3	20	
Benzo[a]pyrene	1.97	2.26		ug/L		115	70 - 130	2	20	
Benzo[b]fluoranthene	1.97	2.32		ug/L		118	70 - 130	3	20	
Benzo[g,h,i]perylene	1.97	2.45		ug/L		124	70 - 130	4	20	
Benzo[k]fluoranthene	1.97	2.32		ug/L		118	70 - 130	2	20	
beta-BHC	1.97	2.01		ug/L		102	70 - 130	3	20	
Bis(2-ethylhexyl) phthalate	1.97	1.85		ug/L		94	70 - 130	3	20	
Bromacil	1.97	2.44		ug/L		124	70 - 130	3	20	
Butachlor	1.97	2.62	*+	ug/L		133	70 - 130	5	20	
Butylbenzylphthalate	1.97	2.17		ug/L		110	70 - 130	3	20	
Chlorobenzilate	1.97	2.49		ug/L		126	70 - 130	5	20	
Chloroneb	1.97	2.09		ug/L		106	70 - 130	1	20	
Chlorothalonil (Draconil, Bravo)	1.97	1.92		ug/L		97	70 - 130	1	20	
Chlorpyrifos	1.97	2.32		ug/L		118	70 - 130	3	20	
Chrysene	1.97	2.14		ug/L		109	70 - 130	1	20	
delta-BHC	1.97	2.07		ug/L		105	70 - 130	1	20	
Di(2-ethylhexyl)adipate	1.97	2.01		ug/L		102	70 - 130	2	20	
Dibenz(a,h)anthracene	1.97	2.46		ug/L		125	70 - 130	3	20	
Diclorvos (DDVP)	1.97	2.67	*+	ug/L		136	70 - 130	0	20	
Dieldrin	1.97	2.03		ug/L		103	70 - 130	3	20	
Diethylphthalate	1.97	2.19		ug/L		111	70 - 130	0	20	
Dimethylphthalate	1.97	2.23		ug/L		113	70 - 130	1	20	
Di-n-butyl phthalate	3.94	4.52		ug/L		115	70 - 130	5	20	
Di-n-octyl phthalate	1.97	1.81		ug/L		92	70 - 130	1	20	
Endosulfan I (Alpha)	1.97	1.94		ug/L		98	70 - 130	0	20	
Endosulfan II (Beta)	1.97	2.24		ug/L		114	70 - 130	2	20	
Endosulfan sulfate	1.97	2.08		ug/L		105	70 - 130	4	20	
Endrin	1.97	2.35		ug/L		119	70 - 130	4	20	
Endrin aldehyde	1.97	2.07		ug/L		105	70 - 130	6	20	
EPTC	1.97	2.17		ug/L		110	70 - 130	2	20	
Fluoranthene	1.97	2.20		ug/L		112	70 - 130	0	20	
Fluorene	1.97	2.16		ug/L		109	70 - 130	0	20	
gamma-Chlordane	1.97	2.21		ug/L		112	70 - 130	2	20	
Heptachlor	1.97	2.20		ug/L		112	70 - 130	2	20	
Heptachlor epoxide (isomer B)	1.97	2.29		ug/L		116	70 - 130	3	20	
Hexachlorobenzene	1.97	2.01		ug/L		102	70 - 130	1	20	
Hexachlorocyclopentadiene	1.97	2.06		ug/L		105	70 - 130	4	20	
Indeno[1,2,3-cd]pyrene	1.97	2.44		ug/L		124	70 - 130	2	20	
Isophorone	1.97	2.10		ug/L		107	70 - 130	3	20	
Lindane	1.97	2.05		ug/L		104	70 - 130	1	20	
Malathion	1.97	2.38		ug/L		121	70 - 130	3	20	
Methoxychlor	1.97	2.37		ug/L		120	70 - 130	2	20	
Metolachlor	1.97	2.54		ug/L		129	70 - 130	5	20	
Molinate	1.97	2.30		ug/L		117	70 - 130	2	20	
Naphthalene	1.97	1.86		ug/L		94	70 - 130	0	20	
Parathion	1.97	2.54		ug/L		129	70 - 130	1	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCSD 380-53397/24-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pendimethalin (Penoxaline)	1.97	2.23		ug/L		113	70 - 130	4	20
Phenanthrene	1.97	1.97		ug/L		100	70 - 130	2	20
Propachlor	1.97	2.11		ug/L		107	70 - 130	3	20
Pyrene	1.97	2.15		ug/L		109	70 - 130	0	20
Simazine	1.97	2.25		ug/L		114	70 - 130	1	20
Terbacil	1.97	2.25		ug/L		114	70 - 130	2	20
Terbutylazine	1.97	2.30		ug/L		117	70 - 130	0	20
Thiobencarb	1.97	2.13		ug/L		108	70 - 130	2	20
trans-Nonachlor	1.97	2.06		ug/L		104	70 - 130	3	20
Trifluralin	1.97	1.96		ug/L		100	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	101		70 - 130
Perylene-d12	99		70 - 130
Triphenylphosphate	118		70 - 130

Lab Sample ID: MRL 380-53397/22-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0985	0.107		ug/L		109	50 - 150
2,4'-DDD	0.0985	0.110		ug/L		111	50 - 150
2,4'-DDE	0.0985	0.105		ug/L		107	50 - 150
2,4'-DDT	0.0985	0.107		ug/L		109	50 - 150
2,4-Dinitrotoluene	0.0985	0.114		ug/L		116	50 - 150
2,6-Dinitrotoluene	0.0985	0.115		ug/L		116	50 - 150
2-Methylnaphthalene	0.0985	0.101		ug/L		102	50 - 150
4,4'-DDD	0.0985	0.100		ug/L		102	50 - 150
4,4'-DDE	0.0985	0.0859	J	ug/L		87	50 - 150
4,4'-DDT	0.0985	0.113		ug/L		115	50 - 150
Acenaphthene	0.0985	0.0995		ug/L		101	50 - 150
Acenaphthylene	0.0985	0.0934	J	ug/L		95	50 - 150
Acetochlor	0.0492	0.0516	J	ug/L		105	50 - 150
Alachlor	0.0492	0.0585		ug/L		119	50 - 150
alpha-BHC	0.0985	0.103		ug/L		105	50 - 150
alpha-Chlordane	0.0246	<0.029		ug/L		86	50 - 150
Anthracene	0.0197	<0.019		ug/L		91	50 - 150
Atrazine	0.0492	0.0656		ug/L		133	50 - 150
Benz(a)anthracene	0.0492	0.0431	J	ug/L		87	50 - 150
Benzo[a]pyrene	0.0197	0.0205		ug/L		104	50 - 150
Benzo[b]fluoranthene	0.0197	0.0243		ug/L		123	50 - 150
Benzo[g,h,i]perylene	0.0492	0.0490		ug/L		100	50 - 150
Benzo[k]fluoranthene	0.0197	0.0236		ug/L		120	50 - 150
beta-BHC	0.0985	0.0919	J	ug/L		93	50 - 150
Bis(2-ethylhexyl) phthalate	0.591	0.630		ug/L		107	50 - 150
Bromacil	0.0985	0.134		ug/L		136	50 - 150
Butachlor	0.0492	0.0615		ug/L		125	50 - 150

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MRL 380-53397/22-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butylbenzylphthalate	0.148	0.178	J	ug/L		120	50 - 150
Chlorobenzilate	0.0985	0.146		ug/L		148	50 - 150
Chloroneb	0.0985	0.114		ug/L		116	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0985	0.120		ug/L		122	50 - 150
Chlorpyrifos	0.0492	0.0549		ug/L		111	50 - 150
Chrysene	0.0197	0.0245		ug/L		125	50 - 150
delta-BHC	0.0985	0.105		ug/L		107	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.318	J	ug/L		108	50 - 150
Dibenz(a,h)anthracene	0.0492	0.0517		ug/L		105	50 - 150
Diclorvos (DDVP)	0.0492	0.0965	^3+	ug/L		196	50 - 150
Dieldrin	0.0985	0.102	J	ug/L		104	50 - 150
Diethylphthalate	0.148	0.168	J	ug/L		113	50 - 150
Dimethylphthalate	0.295	0.321	J	ug/L		109	50 - 150
Di-n-butyl phthalate	0.295	0.416	J	ug/L		141	49 - 243
Di-n-octyl phthalate	0.0985	0.109		ug/L		110	50 - 150
Endosulfan I (Alpha)	0.0985	0.101		ug/L		103	50 - 150
Endosulfan II (Beta)	0.0985	0.0928	J	ug/L		94	50 - 150
Endosulfan sulfate	0.0985	0.105		ug/L		106	50 - 150
Endrin	0.0985	0.117		ug/L		119	50 - 150
Endrin aldehyde	0.0985	0.109		ug/L		111	50 - 150
EPTC	0.0985	0.101		ug/L		103	50 - 150
Fluoranthene	0.0492	0.0503	J	ug/L		102	50 - 150
Fluorene	0.0492	0.0546		ug/L		111	50 - 150
gamma-Chlordane	0.0246	0.0239	J	ug/L		97	50 - 150
Heptachlor	0.0394	0.0394		ug/L		100	50 - 150
Heptachlor epoxide (isomer B)	0.0492	0.0458	J	ug/L		93	50 - 150
Hexachlorobenzene	0.0492	0.0407	J	ug/L		83	50 - 150
Hexachlorocyclopentadiene	0.0492	0.0498		ug/L		101	50 - 150
Indeno[1,2,3-cd]pyrene	0.0492	0.0525		ug/L		107	50 - 150
Isophorone	0.0985	0.110	J	ug/L		112	50 - 150
Lindane	0.0394	0.0425		ug/L		108	50 - 150
Malathion	0.0985	0.117		ug/L		119	50 - 150
Methoxychlor	0.0985	0.140		ug/L		142	50 - 150
Metolachlor	0.0492	0.0604		ug/L		123	50 - 150
Molinate	0.0985	0.106		ug/L		108	50 - 150
Naphthalene	0.0985	0.101	J	ug/L		102	50 - 150
Parathion	0.0985	0.139		ug/L		141	50 - 150
Pendimethalin (Penoxaline)	0.0985	0.115		ug/L		117	50 - 150
Phenanthrene	0.0197	0.0227	J	ug/L		115	50 - 150
Propachlor	0.0492	0.0485	J	ug/L		99	50 - 150
Pyrene	0.0492	0.0505		ug/L		103	50 - 150
Simazine	0.0492	0.0526		ug/L		107	50 - 150
Terbacil	0.0985	0.112		ug/L		114	50 - 150
Terbutylazine	0.0985	0.0977	J	ug/L		99	50 - 150
Thiobencarb	0.0985	0.111	J	ug/L		113	50 - 150
trans-Nonachlor	0.0246	<0.026		ug/L		97	50 - 150
Trifluralin	0.0985	0.104		ug/L		105	50 - 150

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MRL 380-53397/22-A
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53397

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	77		70 - 130
Triphenylphosphate	94		70 - 130

Lab Sample ID: 380-60360-AN-1-A MS
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.94	1.90		ug/L		98	70 - 130
2,4'-DDD	<0.097		1.94	2.07		ug/L		106	70 - 130
2,4'-DDE	<0.097		1.94	1.88		ug/L		97	70 - 130
2,4'-DDT	<0.097		1.94	2.11		ug/L		109	70 - 130
2,4-Dinitrotoluene	<0.097		1.94	2.21		ug/L		114	70 - 130
2,6-Dinitrotoluene	<0.097		1.94	2.22		ug/L		114	70 - 130
2-Methylnaphthalene	<0.097		1.94	1.91		ug/L		99	70 - 130
4,4'-DDD	<0.097		1.94	2.01		ug/L		104	70 - 130
4,4'-DDE	<0.097		1.94	1.96		ug/L		101	70 - 130
4,4'-DDT	<0.097		1.94	2.13		ug/L		110	70 - 130
Acenaphthene	<0.097		1.94	1.86		ug/L		96	70 - 130
Acenaphthylene	<0.097		1.94	1.97		ug/L		102	70 - 130
Acetochlor	<0.097	F1 *+	1.94	2.55	F1	ug/L		132	70 - 130
Alachlor	<0.049		1.94	2.29		ug/L		118	70 - 130
alpha-BHC	<0.097		1.94	1.99		ug/L		103	70 - 130
alpha-Chlordane	<0.049		1.94	2.08		ug/L		107	70 - 130
Anthracene	<0.019	F1	1.94	1.23	F1	ug/L		64	70 - 130
Atrazine	<0.049		1.94	2.05		ug/L		105	70 - 130
Benz(a)anthracene	<0.049		1.94	1.97		ug/L		102	70 - 130
Benzo[a]pyrene	<0.019		1.94	1.82		ug/L		94	70 - 130
Benzo[b]fluoranthene	<0.019		1.94	2.20		ug/L		113	70 - 130
Benzo[g,h,i]perylene	<0.049		1.94	2.27		ug/L		117	70 - 130
Benzo[k]fluoranthene	<0.019		1.94	2.34		ug/L		121	70 - 130
beta-BHC	<0.097		1.94	1.94		ug/L		100	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.94	1.96		ug/L		101	70 - 130
Bromacil	<0.097		1.94	2.41		ug/L		124	70 - 130
Butachlor	<0.049	F1 *+	1.94	2.55	F1	ug/L		131	70 - 130
Butylbenzylphthalate	<0.49		1.94	2.09		ug/L		104	70 - 130
Chlorobenzilate	<0.097		1.94	2.40		ug/L		124	70 - 130
Chloroneb	<0.097		1.94	2.01		ug/L		103	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.94	1.84		ug/L		95	70 - 130
Chlorpyrifos	<0.049		1.94	2.27		ug/L		117	70 - 130
Chrysene	<0.019		1.94	2.09		ug/L		107	70 - 130
delta-BHC	<0.097		1.94	1.98		ug/L		102	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.94	1.99		ug/L		102	70 - 130
Dibenz(a,h)anthracene	<0.049		1.94	2.38		ug/L		123	70 - 130
Diclorvos (DDVP)	<0.049	F1 ^3+ **	1.94	2.55	F1	ug/L		131	70 - 130
Dieldrin	<0.19		1.94	1.97		ug/L		102	70 - 130
Diethylphthalate	<0.49		1.94	2.14		ug/L		110	70 - 130

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60360-AN-1-A MS

Matrix: Water

Analysis Batch: 53499

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 53397

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
Dimethylphthalate	<0.49		1.94	2.18		ug/L		112	70 - 130
Di-n-butyl phthalate	<0.97		3.88	4.42		ug/L		110	70 - 130
Di-n-octyl phthalate	<0.097		1.94	1.93		ug/L		100	70 - 130
Endosulfan I (Alpha)	<0.097		1.94	1.93		ug/L		99	70 - 130
Endosulfan II (Beta)	<0.097		1.94	2.16		ug/L		111	70 - 130
Endosulfan sulfate	<0.097		1.94	1.99		ug/L		103	70 - 130
Endrin	<0.097		1.94	2.34		ug/L		121	70 - 130
Endrin aldehyde	<0.097		1.94	1.98		ug/L		102	70 - 130
EPTC	<0.097		1.94	2.15		ug/L		111	70 - 130
Fluoranthene	<0.097		1.94	2.14		ug/L		110	70 - 130
Fluorene	<0.049		1.94	2.10		ug/L		108	70 - 130
gamma-Chlordane	<0.049		1.94	2.17		ug/L		112	70 - 130
Heptachlor	<0.039		1.94	2.17		ug/L		112	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.94	2.24		ug/L		115	70 - 130
Hexachlorobenzene	<0.049		1.94	1.96		ug/L		101	70 - 130
Hexachlorocyclopentadiene	<0.049		1.94	1.96		ug/L		101	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.94	2.35		ug/L		121	70 - 130
Isophorone	<0.49		1.94	2.04		ug/L		105	70 - 130
Lindane	<0.039		1.94	2.00		ug/L		103	70 - 130
Malathion	<0.097		1.94	2.33		ug/L		120	70 - 130
Methoxychlor	<0.097		1.94	2.34		ug/L		120	70 - 130
Metolachlor	<0.049		1.94	2.49		ug/L		128	70 - 130
Molinate	<0.097		1.94	2.29		ug/L		118	70 - 130
Naphthalene	<0.29		1.94	1.80		ug/L		93	70 - 130
Parathion	<0.097	F1	1.94	2.53	F1	ug/L		131	70 - 130
Pendimethalin (Penoxaline)	<0.097		1.94	2.22		ug/L		115	70 - 130
Phenanthrene	<0.039		1.94	1.92		ug/L		99	70 - 130
Propachlor	<0.049		1.94	2.13		ug/L		110	70 - 130
Pyrene	<0.049		1.94	2.08		ug/L		107	70 - 130
Simazine	<0.049		1.94	2.18		ug/L		112	70 - 130
Terbacil	<0.097		1.94	2.14		ug/L		110	70 - 130
Terbutylazine	<0.097		1.94	2.23		ug/L		115	70 - 130
Thiobencarb	<0.19		1.94	2.09		ug/L		108	70 - 130
trans-Nonachlor	<0.049		1.94	2.00		ug/L		103	70 - 130
Trifluralin	<0.097		1.94	1.99		ug/L		102	70 - 130
				MS	MS				
Surrogate	%Recovery	Qualifier	Limits						
2-Nitro-m-xylene	99		70 - 130						
Perylene-d12	99		70 - 130						
Triphenylphosphate	114		70 - 130						

Lab Sample ID: 380-60379-I-1-A DU

Matrix: Water

Analysis Batch: 53499

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 53397

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
1-Methylnaphthalene	<0.099		<0.098		ug/L			NC	20
2,4'-DDD	<0.099		<0.098		ug/L			NC	20

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60379-I-1-A DU
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
2,4'-DDE	<0.099		<0.098		ug/L		NC	20
2,4'-DDT	<0.099		<0.098		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.098		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.098		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.098		ug/L		NC	20
4,4'-DDD	<0.099		<0.098		ug/L		NC	20
4,4'-DDE	<0.099		<0.098		ug/L		NC	20
4,4'-DDT	<0.099		<0.098		ug/L		NC	20
Acenaphthene	<0.099		<0.098		ug/L		NC	20
Acenaphthylene	<0.099		<0.098		ug/L		NC	20
Acetochlor	<0.099	*+	<0.098	*+	ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.099		<0.098		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		<0.020		ug/L		NC	20
beta-BHC	<0.099		<0.098		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.099		<0.098		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		<0.098		ug/L		NC	20
Chloroneb	<0.099		<0.098		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099		<0.098		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		<0.098		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
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.99		<0.98		ug/L		NC	20
Di-n-octyl phthalate	<0.099		<0.098		ug/L		NC	20
Endosulfan I (Alpha)	<0.099		<0.098		ug/L		NC	20
Endosulfan II (Beta)	<0.099		<0.098		ug/L		NC	20
Endosulfan sulfate	<0.099		<0.098		ug/L		NC	20
Endrin	<0.099		<0.098		ug/L		NC	20
Endrin aldehyde	<0.099		<0.098		ug/L		NC	20
EPTC	<0.099		<0.098		ug/L		NC	20
Fluoranthene	<0.099		<0.098		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60379-I-1-A DU
Matrix: Water
Analysis Batch: 53499

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 53397

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
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		<0.098		ug/L		NC	20
Methoxychlor	<0.099		<0.098		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.099		<0.098		ug/L		NC	20
Naphthalene	<0.30		<0.29		ug/L		NC	20
Parathion	<0.099		<0.098		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.098		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		<0.098		ug/L		NC	20
Terbutylazine	<0.099		<0.098		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		<0.098		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	94		70 - 130
Triphenylphosphate	114		70 - 130

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

Lab Sample ID: MBL 380-54975/21-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54975

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		09/08/23 10:45	09/11/23 19:31	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MBL 380-54975/21-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54975

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/08/23 10:45	09/11/23 19:31	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	85		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C6 PFDA	108		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C5 PFHxA	103		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C4 PFHpA	108		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C8 PFOA	104		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C9 PFNA	109		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C7 PFUnA	99		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C2 PFDoA	103		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C4 PFBA	105		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C5 PFPeA	108		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C3 PFBS	96		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C3 PFHxS	96		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C8 PFOS	101		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C2-4:2-FTS	115		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C2-6:2-FTS	106		50 - 200	09/08/23 10:45	09/11/23 19:31	1
13C2-8:2-FTS	128		50 - 200	09/08/23 10:45	09/11/23 19:31	1

Lab Sample ID: LCS 380-54975/23-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	105		ng/L		87	70 - 130

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCS 380-54975/23-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	120	115		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	105		ng/L		87	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	111		ng/L		93	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	109		ng/L		90	70 - 130
Perfluorodecanoic acid (PFDA)	120	112		ng/L		93	70 - 130
Perfluorododecanoic acid (PFDoA)	120	108		ng/L		90	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	109		ng/L		91	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	112		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	120	113		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	120	107		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	111		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	120	110		ng/L		91	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	109		ng/L		91	70 - 130
Perfluorobutanoic acid (PFBA)	120	105		ng/L		88	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	111		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	115		ng/L		96	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	93.5		ng/L		78	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	109		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	114		ng/L		95	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	114		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	120	115		ng/L		96	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	109		ng/L		90	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	116		ng/L		96	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	105		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	111		50 - 200
13C7 PFUnA	104		50 - 200
13C2 PFDoA	112		50 - 200
13C4 PFBA	107		50 - 200

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCS 380-54975/23-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54975

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C5 PFPeA	109		50 - 200
13C3 PFBS	98		50 - 200
13C3 PFHxS	98		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	124		50 - 200

Lab Sample ID: LCSD 380-54975/24-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54975

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	104		ng/L		87	70 - 130	0	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	114		ng/L		95	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	110		ng/L		92	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	115		ng/L		96	70 - 130	4	30
Perfluorobutanesulfonic acid (PFBS)	120	109		ng/L		90	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	120	114		ng/L		95	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	120	112		ng/L		94	70 - 130	4	30
Perfluoroheptanoic acid (PFHpA)	120	114		ng/L		95	70 - 130	5	30
Perfluorohexanesulfonic acid (PFHxS)	120	111		ng/L		92	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	120	108		ng/L		90	70 - 130	4	30
Perfluorononanoic acid (PFNA)	120	105		ng/L		88	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	120	110		ng/L		91	70 - 130	1	30
Perfluorooctanoic acid (PFOA)	120	116		ng/L		96	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	120	113		ng/L		94	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	120	111		ng/L		92	70 - 130	5	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	117		ng/L		97	70 - 130	5	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	106		ng/L		88	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	115		ng/L		96	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	103		ng/L		86	70 - 130	10	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	107		ng/L		89	70 - 130	2	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	119		ng/L		99	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	116		ng/L		97	70 - 130	2	30

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCSD 380-54975/24-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	120	118		ng/L		98	70 - 130	2	30
Perfluoroheptanesulfonic acid (PFHpS)	120	112		ng/L		93	70 - 130	3	30
Perfluoropentanesulfonic acid (PFPeS)	120	115		ng/L		95	70 - 130	1	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	117		50 - 200
13C5 PFHxA	109		50 - 200
13C4 PFHpA	106		50 - 200
13C8 PFOA	105		50 - 200
13C9 PFNA	117		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	111		50 - 200
13C4 PFBA	101		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	98		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	122		50 - 200

Lab Sample ID: MRL 380-54975/22-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.06	J	ng/L		103	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.32	J	ng/L		116	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.10	J	ng/L		105	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.35	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.17	J	ng/L		109	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.17	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.32	J	ng/L		116	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MRL 380-54975/22-A
Matrix: Water
Analysis Batch: 55188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.40	J	ng/L		120	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.21	J	ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.37	J	ng/L		118	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.48	J	ng/L		124	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.21	J	ng/L		110	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.10	J	ng/L		105	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	86		50 - 200
13C6 PFDA	106		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	106		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	108		50 - 200
13C4 PFBA	101		50 - 200
13C5 PFPeA	103		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	103		50 - 200
13C8 PFOS	102		50 - 200
13C2-4:2-FTS	116		50 - 200
13C2-6:2-FTS	111		50 - 200
13C2-8:2-FTS	127		50 - 200

Lab Sample ID: 380-60596-1 MS
Matrix: Drinking Water
Analysis Batch: 55188

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	106		ng/L		88	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	112		ng/L		93	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60596-1 MS
Matrix: Drinking Water
Analysis Batch: 55188

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Sample Result	Sample Qualifier	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	116		ng/L		97	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	119		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	114		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		120	115		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		120	115		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		120	114		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.2		120	117		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		120	118		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		120	109		ng/L		91	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.2		120	113		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	2.1		120	115		ng/L		94	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		120	113		ng/L		94	70 - 130
Perfluorobutanoic acid (PFBA)	<2.0		120	114		ng/L		94	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	112		ng/L		93	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	116		ng/L		97	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	120		ng/L		100	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	107		ng/L		89	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		120	109		ng/L		91	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	123		ng/L		103	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	119		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	2.6		120	113		ng/L		92	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	112		ng/L		93	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	117		ng/L		97	70 - 130
				MS	MS				
Isotope Dilution				%Recovery	Qualifier				Limits
13C3 HFPO-DA				96					50 - 200
13C6 PFDA				106					50 - 200
13C5 PFHxA				98					50 - 200
13C4 PFHpA				100					50 - 200
13C8 PFOA				103					50 - 200
13C9 PFNA				111					50 - 200
13C7 PFUnA				100					50 - 200
13C2 PFDoA				102					50 - 200
13C4 PFBA				101					50 - 200
13C5 PFPeA				109					50 - 200
13C3 PFBS				95					50 - 200
13C3 PFHxS				95					50 - 200

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60596-1 MS
Matrix: Drinking Water
Analysis Batch: 55188

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 54975

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C8 PFOS	102		50 - 200
13C2-4:2-FTS	107		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	115		50 - 200

Lab Sample ID: 380-60596-1 MSD
Matrix: Drinking Water
Analysis Batch: 55188

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 54975

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		120	105		ng/L		87	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		120	113		ng/L		94	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		120	110		ng/L		91	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		120	121		ng/L		101	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		120	114		ng/L		93	70 - 130	0	30
Perfluorodecanoic acid (PFDA)	<2.0		120	112		ng/L		93	70 - 130	2	30
Perfluorododecanoic acid (PFDoA)	<2.0		120	113		ng/L		94	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		120	115		ng/L		95	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	2.2		120	114		ng/L		93	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		120	112		ng/L		91	70 - 130	6	30
Perfluorononanoic acid (PFNA)	<2.0		120	116		ng/L		97	70 - 130	6	30
Perfluorooctanesulfonic acid (PFOS)	2.2		120	113		ng/L		92	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	2.1		120	114		ng/L		93	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<2.0		120	114		ng/L		95	70 - 130	1	30
Perfluorobutanoic acid (PFBA)	<2.0		120	114		ng/L		94	70 - 130	0	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		120	111		ng/L		92	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		120	115		ng/L		95	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		120	115		ng/L		95	70 - 130	5	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		120	103		ng/L		86	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		120	110		ng/L		91	70 - 130	1	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		120	119		ng/L		99	70 - 130	4	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		120	119		ng/L		99	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)	2.6		120	116		ng/L		95	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		120	110		ng/L		92	70 - 130	2	30

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60596-1 MSD
Matrix: Drinking Water
Analysis Batch: 55188

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 54975

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)	<2.0		120	118		ng/L		98	70 - 130	1	30
MSD MSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C3 HFPO-DA	97		50 - 200								
13C6 PFDA	108		50 - 200								
13C5 PFHxA	97		50 - 200								
13C4 PFHpA	100		50 - 200								
13C8 PFOA	102		50 - 200								
13C9 PFNA	108		50 - 200								
13C7 PFUnA	103		50 - 200								
13C2 PFDoA	105		50 - 200								
13C4 PFBA	97		50 - 200								
13C5 PFPeA	105		50 - 200								
13C3 PFBS	98		50 - 200								
13C3 PFHxS	99		50 - 200								
13C8 PFOS	104		50 - 200								
13C2-4:2-FTS	108		50 - 200								
13C2-6:2-FTS	103		50 - 200								
13C2-8:2-FTS	112		50 - 200								

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

Lab Sample ID: MBL 380-53390/21-A
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53390

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		08/26/23 15:29	08/29/23 03:34	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
N-methylperfluorooctanesulfonamide acid (NMeFOSAA)	<0.58		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
N-ethylperfluorooctanesulfonamide acid (NEtFOSAA)	<0.42		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MBL 380-53390/21-A
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53390

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/26/23 15:29	08/29/23 03:34	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	107		70 - 130	08/26/23 15:29	08/29/23 03:34	1
13C2 PFHxA	106		70 - 130	08/26/23 15:29	08/29/23 03:34	1
13C2 PFDA	120		70 - 130	08/26/23 15:29	08/29/23 03:34	1
13C3-GenX	103		70 - 130	08/26/23 15:29	08/29/23 03:34	1

Lab Sample ID: LCS 380-53390/23-A
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53390

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	23.4		ng/L		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	23.2	23.5		ng/L		101	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	25.9		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	22.8		ng/L		91	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	22.7		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	24.4		ng/L		98	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	26.3		ng/L		105	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	23.2		ng/L		93	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.9		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	22.9	23.3		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	22.2	22.6		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	23.0		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	25.1	26.7		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	23.0		ng/L		92	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	27.1		ng/L		108	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	23.4	24.3		ng/L		104	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	23.2		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	21.7		ng/L		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	115		70 - 130

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: LCS 380-53390/23-A
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53390

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C3-GenX	109		70 - 130

Lab Sample ID: LCSD 380-53390/24-A
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53390

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	23.8		ng/L		95	70 - 130	2	30	
Perfluorooctanesulfonic acid (PFOS)	23.2	25.1		ng/L		108	70 - 130	7	30	
Perfluoroundecanoic acid (PFUnA)	25.1	27.5		ng/L		110	70 - 130	6	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.1		ng/L		100	70 - 130	9	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	24.4		ng/L		97	70 - 130	7	30	
Perfluorohexanoic acid (PFHxA)	25.1	26.4		ng/L		105	70 - 130	8	30	
Perfluorododecanoic acid (PFDoA)	25.1	28.0		ng/L		112	70 - 130	6	30	
Perfluorooctanoic acid (PFOA)	25.1	23.9		ng/L		96	70 - 130	3	30	
Perfluorodecanoic acid (PFDA)	25.1	26.9		ng/L		107	70 - 130	4	30	
Perfluorohexanesulfonic acid (PFHxS)	22.9	24.1		ng/L		106	70 - 130	4	30	
Perfluorobutanesulfonic acid (PFBS)	22.2	21.0		ng/L		95	70 - 130	7	30	
Perfluoroheptanoic acid (PFHpA)	25.1	23.8		ng/L		95	70 - 130	4	30	
Perfluorononanoic acid (PFNA)	25.1	26.9		ng/L		107	70 - 130	1	30	
Perfluorotetradecanoic acid (PFTA)	25.1	24.0		ng/L		96	70 - 130	4	30	
Perfluorotridecanoic acid (PFTrDA)	25.1	28.2		ng/L		112	70 - 130	4	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	23.4	25.5		ng/L		109	70 - 130	5	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	24.8		ng/L		105	70 - 130	6	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	23.0		ng/L		97	70 - 130	6	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	101		70 - 130
13C2 PFHxA	107		70 - 130
13C2 PFDA	113		70 - 130
13C3-GenX	107		70 - 130

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: MRL 380-53390/22-A
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53390

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.30	J	ng/L		124	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.46	J	ng/L		123	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.04	J	ng/L		102	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.03	J	ng/L		102	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.31	J	ng/L		115	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.14	J	ng/L		117	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.99	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.32	J	ng/L		116	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.51	J	ng/L		125	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.15	J	ng/L		115	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.12	J	ng/L		112	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.90	J	ng/L		100	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	105		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	106		70 - 130

Lab Sample ID: 380-60559-U-1-A MS
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53390

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	25.6		ng/L		102	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		23.2	25.1		ng/L		108	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	28.1		ng/L		112	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	24.9		ng/L		99	70 - 130

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QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60559-U-1-A MS
Matrix: Water
Analysis Batch: 53522

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53390

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	25.4		ng/L		101	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	27.3		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	28.0		ng/L		112	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	25.3		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	27.0		ng/L		108	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		22.9	23.7		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		22.2	24.3		ng/L		110	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.7		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	28.7		ng/L		114	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	24.2		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	28.7		ng/L		114	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		23.5	25.6		ng/L		109	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		23.7	24.5		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	23.8		ng/L		100	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	102		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	115		70 - 130

Lab Sample ID: 380-60596-1 DU
Matrix: Drinking Water
Analysis Batch: 53522

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 53390

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanesulfonic acid (PFOS)	2.4		2.45		ng/L		0.06	30
Perfluoroundecanoic acid (PFUnA)	<2.0		<2.0		ng/L		NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		<2.0		ng/L		NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		<2.0		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	2.2		2.33		ng/L		4	30
Perfluorododecanoic acid (PFDoA)	<2.0		<2.0		ng/L		NC	30
Perfluorooctanoic acid (PFOA)	<2.0		<2.0		ng/L		NC	30
Perfluorodecanoic acid (PFDA)	<2.0		<2.0		ng/L		NC	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-60596-1

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

Lab Sample ID: 380-60596-1 DU
Matrix: Drinking Water
Analysis Batch: 53522

Client Sample ID: HALAWA WELLS UNITS 1 & 2
Prep Type: Total/NA
Prep Batch: 53390

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.66		ng/L		5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		<2.0		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	<2.0		<2.0		ng/L		NC	30
Perfluorononanoic acid (PFNA)	<2.0		<2.0		ng/L		NC	30
Perfluorotetradecanoic acid (PFTA)	<2.0		<2.0		ng/L		NC	30
Perfluorotridecanoic acid (PFTTrDA)	<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
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		<2.0		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		<2.0		ng/L		NC	30
		<i>DU</i>	<i>DU</i>					
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>			<i>Limits</i>			
<i>d5-NEtFOSAA</i>	112				70 - 130			
<i>13C2 PFHxA</i>	111				70 - 130			
<i>13C2 PFDA</i>	122				70 - 130			
<i>13C3-GenX</i>	118				70 - 130			

QC Association Summary

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

Job ID: 380-60596-1

GC/MS Semi VOA

Prep Batch: 53397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	525.2	
MB 380-53397/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-53397/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-53397/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-53397/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-60360-AN-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-60379-I-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 53499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	525.2	53397
MB 380-53397/21-A	Method Blank	Total/NA	Water	525.2	53397
LCS 380-53397/23-A	Lab Control Sample	Total/NA	Water	525.2	53397
LCSD 380-53397/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	53397
MRL 380-53397/22-A	Lab Control Sample	Total/NA	Water	525.2	53397
380-60360-AN-1-A MS	Matrix Spike	Total/NA	Water	525.2	53397
380-60379-I-1-A DU	Duplicate	Total/NA	Water	525.2	53397

LCMS

Prep Batch: 53390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	537.1 DW	
380-60596-2	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1 DW	
MBL 380-53390/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-53390/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-53390/24-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-53390/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-60559-U-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-60596-1 DU	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 53522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	537.1	53390
380-60596-2	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	537.1	53390
MBL 380-53390/21-A	Method Blank	Total/NA	Water	537.1	53390
LCS 380-53390/23-A	Lab Control Sample	Total/NA	Water	537.1	53390
LCSD 380-53390/24-A	Lab Control Sample Dup	Total/NA	Water	537.1	53390
MRL 380-53390/22-A	Lab Control Sample	Total/NA	Water	537.1	53390
380-60559-U-1-A MS	Matrix Spike	Total/NA	Water	537.1	53390
380-60596-1 DU	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	537.1	53390

Prep Batch: 54975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	533	
380-60596-2	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	
MBL 380-54975/21-A	Method Blank	Total/NA	Water	533	
LCS 380-54975/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-54975/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-54975/22-A	Lab Control Sample	Total/NA	Water	533	
380-60596-1 MS	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	533	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-60596-1

LCMS (Continued)

Prep Batch: 54975 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1 MSD	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	533	

Analysis Batch: 55188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-60596-1	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	533	54975
380-60596-2	FB HALAWA WELLS UNITS 1 & 2	Total/NA	Water	533	54975
MBL 380-54975/21-A	Method Blank	Total/NA	Water	533	54975
LCS 380-54975/23-A	Lab Control Sample	Total/NA	Water	533	54975
LCSD 380-54975/24-A	Lab Control Sample Dup	Total/NA	Water	533	54975
MRL 380-54975/22-A	Lab Control Sample	Total/NA	Water	533	54975
380-60596-1 MS	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	533	54975
380-60596-1 MSD	HALAWA WELLS UNITS 1 & 2	Total/NA	Drinking Water	533	54975

Lab Chronicle

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

Job ID: 380-60596-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-1

Date Collected: 08/23/23 10:00

Matrix: Drinking Water

Date Received: 08/25/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			53397	N8NE	EA POM	08/26/23 20:57
Total/NA	Analysis	525.2		1	53499	Q8LA	EA POM	08/28/23 20:00
Total/NA	Prep	533			54975	UMV1	EA POM	09/08/23 10:45
Total/NA	Analysis	533		1	55188	UKDT	EA POM	09/11/23 20:09
Total/NA	Prep	537.1 DW			53390	EE6W	EA POM	08/26/23 15:29
Total/NA	Analysis	537.1		1	53522	Y7BM	EA POM	08/29/23 04:33

Client Sample ID: FB HALAWA WELLS UNITS 1 & 2

Lab Sample ID: 380-60596-2

Date Collected: 08/23/23 10:00

Matrix: Water

Date Received: 08/25/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			54975	UMV1	EA POM	09/08/23 10:45
Total/NA	Analysis	533		1	55188	UKDT	EA POM	09/11/23 20:38
Total/NA	Prep	537.1 DW			53390	EE6W	EA POM	08/26/23 15:29
Total/NA	Analysis	537.1		1	53522	Y7BM	EA POM	08/29/23 07:28

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: 380-60596-1

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	Alachlor
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	Atrazine
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[a]pyrene
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	Bis(2-ethylhexyl) phthalate
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butachlor
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	Di(2-ethylhexyl)adipate
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Dieldrin
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

Accreditation/Certification Summary

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

Job ID: 380-60596-1

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	Endrin
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	Heptachlor
525.2	525.2	Drinking Water	Heptachlor epoxide (isomer B)
525.2	525.2	Drinking Water	Hexachlorobenzene
525.2	525.2	Drinking Water	Hexachlorocyclopentadiene
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Lindane
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Methoxychlor
525.2	525.2	Drinking Water	Metolachlor
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	Propachlor
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Simazine
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)

Accreditation/Certification Summary

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

Job ID: 380-60596-1

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
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	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluorodecanoic acid (PFDA)
533	533	Drinking Water	Perfluorododecanoic acid (PFDoA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoroheptanoic acid (PFHpA)
533	533	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
533	533	Drinking Water	Perfluorohexanoic acid (PFHxA)
533	533	Drinking Water	Perfluorononanoic acid (PFNA)
533	533	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
533	533	Drinking Water	Perfluorooctanoic acid (PFOA)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Drinking Water	Perfluoroundecanoic acid (PFUnA)
533	533	Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
533	533	Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanesulfonic acid (PFBS)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluorodecanoic acid (PFDA)
533	533	Water	Perfluorododecanoic acid (PFDoA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoroheptanoic acid (PFHpA)
533	533	Water	Perfluorohexanesulfonic acid (PFHxS)
533	533	Water	Perfluorohexanoic acid (PFHxA)
533	533	Water	Perfluorononanoic acid (PFNA)
533	533	Water	Perfluorooctanesulfonic acid (PFOS)

Accreditation/Certification Summary

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

Job ID: 380-60596-1

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
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	Perfluorooctanoic acid (PFOA)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
533	533	Water	Perfluoroundecanoic acid (PFUnA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafuoro-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	Drinking Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1	537.1 DW	Drinking Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	537.1 DW	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
537.1	537.1 DW	Drinking Water	Perfluorodecanoic acid (PFDA)
537.1	537.1 DW	Drinking Water	Perfluorododecanoic acid (PFDoA)
537.1	537.1 DW	Drinking Water	Perfluoroheptanoic acid (PFHpA)
537.1	537.1 DW	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
537.1	537.1 DW	Drinking Water	Perfluorohexanoic acid (PFHxA)
537.1	537.1 DW	Drinking Water	Perfluorononanoic acid (PFNA)
537.1	537.1 DW	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
537.1	537.1 DW	Drinking Water	Perfluorooctanoic acid (PFOA)
537.1	537.1 DW	Drinking Water	Perfluorotetradecanoic acid (PFTA)
537.1	537.1 DW	Drinking Water	Perfluorotridecanoic acid (PFTTrDA)
537.1	537.1 DW	Drinking Water	Perfluoroundecanoic acid (PFUnA)
537.1	537.1 DW	Water	11-Chloroeicosafuoro-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)
537.1	537.1 DW	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1	537.1 DW	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	537.1 DW	Water	Perfluorobutanesulfonic acid (PFBS)
537.1	537.1 DW	Water	Perfluorodecanoic acid (PFDA)
537.1	537.1 DW	Water	Perfluorododecanoic acid (PFDoA)
537.1	537.1 DW	Water	Perfluoroheptanoic acid (PFHpA)
537.1	537.1 DW	Water	Perfluorohexanesulfonic acid (PFHxS)
537.1	537.1 DW	Water	Perfluorohexanoic acid (PFHxA)
537.1	537.1 DW	Water	Perfluorononanoic acid (PFNA)
537.1	537.1 DW	Water	Perfluorooctanesulfonic acid (PFOS)
537.1	537.1 DW	Water	Perfluorooctanoic acid (PFOA)
537.1	537.1 DW	Water	Perfluorotetradecanoic acid (PFTA)

Accreditation/Certification Summary

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

Job ID: 380-60596-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>	<u>Expiration Date</u>
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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.

<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
537.1	537.1 DW	Water	Perfluorotridecanoic acid (PFTrDA)
537.1	537.1 DW	Water	Perfluoroundecanoic acid (PFUnA)

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Method Summary

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

Job ID: 380-60596-1

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: 380-60596-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-60596-1	HALAWA WELLS UNITS 1 & 2	Drinking Water	08/23/23 10:00	08/25/23 09:20
380-60596-2	FB HALAWA WELLS UNITS 1 & 2	Water	08/23/23 10:00	08/25/23 09:20


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

Chain of Custody Record



Environment Testing
 America

Client Information Client Contact: Dr. Ron Fenstermacher Company: City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5081 (tel) Email: rfenstermacher@hbws.org Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:	Sampler: <i>Byssia Nakamoto</i> Lab PM: Arada, Rachelle Phone: 808-748-5840 E-Mail: Rachelle.Arada@et.euronisus.com State of Origin: Hawaii Carrier Tracking No(s): 380-27941-2757 2 Page: Page 2 of 2 Job #:	Due Date Requested: TAT Requested (days): Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #: Project #: 38001111 SOW#:	Analysis Requested SUBCONTRACT - 625 PAH Physis LL (EAL) + TICS SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - (MOD) 525plus PLUS TICS SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 537.1 DW_PREC - 537.1 Full List SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 533 - All Analytes Total Number of Containers: <input checked="" type="checkbox"/>	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNeO2 P - NaZnMS Q - NaZSO3 R - NaZSO4 S - HZSO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	Special Instructions/Note: Pump 1 380-60596 COC 
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Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=oil, T=tissue, A=air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	R	R	R	RA	RA	Y	N
MOANALUA WELLS				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
AIEA GULCH WELLS PUMP2				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
AIEA WELLS PUMPS 1&2 (260)				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
HALAWA WELLS UNITS 1&2	9/23/23	1000	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
FB MOANALUA WELLS				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
FB AIEA GULCH WELLS PUMP2				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
FB AIEA WELLS PUMPS 1&2 (260)				Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
FB HALAWA WELLS UNITS 1&2	9/23/23			Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							

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

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

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: _____ Date/Time: 9/23/2023 1100 Company: HBWS
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____

Method of Shipment: FED EX 273163564691
 Received by: *G. RETNER* Date/Time: 09/27/2023 09:20 Company: CCBP
 Received by: _____ Date/Time: _____ Company: _____

Cooler Temperature(s) °C and Other Remarks: *751A @ 1.3°C @ 1.1°C @ 1.3°C @ 2.2°C = 4.1°C*
GEL-FREEN

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

Chain of Custody Record



Client Information Client Contact: <u>Dr. Ron Fenstermacher</u> Phone: <u>808-748-5840</u>		Lab PM: <u>Arada, Rachelle</u> E-Mail: <u>Rachelle.Arada@et.euronisus.com</u>		Carrier Tracking No(s): <u>380-27941-2757.2</u> Page: <u>Page 2 of 2</u>	
Company: <u>Honolulu</u> City & County of Honolulu		PWSID: _____ Due Date Requested: _____ TAT Requested (days): _____ Compliance Project: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes PO #: <u>C20525101 exp 05312023</u> WO #: _____		Job #: _____ Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amniclor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AshNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - NCA W - pH 4-5 X - Trizma Z - other (specify) Other: _____	
Address: <u>630 South Beretania Street, Chemistry Lab</u> City: <u>Honolulu</u> State, Zip: <u>HI, 96843</u> Phone: <u>808-748-5091 (tel)</u> Email: <u>rfenstermacher@hbws.org</u>		Project Name: <u>RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill</u> Project #: <u>38001111</u> SSCW#: _____		Analysis Requested: SUBCONTRACT - 625 PAH Phys LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil 525.2.PREC - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 537.1.DW.PREC - 537.1 Full List 533 - All Analytes	
Sample Identification MOANALUA WELLS AIEA GULCH WELLS PUMP2 AIEA WELLS PUMPS 1&2 (260) HALAWA WELLS UNITS 1&2 FB MOANALUA WELLS FB AIEA GULCH WELLS PUMP2 FB AIEA WELLS PUMPS 1&2 (260) FB HALAWA WELLS UNITS 1&2		Sample Date: _____ Sample Time: _____ Sample Type (C=Comp, G=grab): _____ Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air): _____ Preservation Code: _____		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Total Number of containers: _____ Special Instructions/Note: _____ <u>Pump 1</u>	
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					
Deliverable Requested: I, II, III, IV, Other (specify) _____					
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: <u>Byron Nakamoto</u> Date/Time: <u>8/23/2023 11:00</u> Company: <u>HBWS</u> Relinquished by: _____ Date/Time: _____ Company: _____ Relinquished by: _____ Date/Time: _____ Company: _____					
Custody Seals Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: <u>CEL-FROZEN (75A) 0.13 °C ± 0.1 °C / 0.4.3 °C ± 0.2 ± 0.4 °C</u>					



Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
 Bottle Order #: 2757
 Request From Client: 3/2/2023
 Date Order Posted: 7/20/2022 11:12:54AM
 Order Status: Shipped
 Prepared By: Davis Haley
Deliver By Date: 3/29/2023 11:59:00PM
 Lab Project Number: 38001111
 PWSID:

Order Completion Information

Creator: Michelle Do
 Filled by: Matthew Ramos
 Sent Date: 3/28/2023 5:36:36PM
 Sent Via: FedEx Priority Overnight
 Tracking #: 618689361801, 618689361812, 618689361823,
 618689361834, 618689361845

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot#
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH Physis	—
4	4	16	Voa Vial 40ml - Sodium Thio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal	EAL 52	—
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		—
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal	EAL 52	—
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank	EAL 52	—
5	3	15	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		—
5	3	15	Plastic 250ml - Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		—
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		—
5	1	5	Plastic 250ml - Ammonium Acetate	Ammonium Acetate		Water	Field Blank		—
5	1	5	Plastic 250ml - Reagent Water	None		Water	Field Blank		—
5	1	5	Plastic 250ml - Trizma	Trizma		Water	Field Blank		—

Please notify your PM immediately if an error is found in shipment. When returning samples, please return all provided QC samples.



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-60596-1

Login Number: 60596

List Number: 1

Creator: Edrosa, Rey

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	False	Not present
Sample custody seals, if present, are intact.	False	Not Present
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	