

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-58488-1

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: 380-58488-1

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
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.

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: 380-58488-1

Job ID: 380-58488-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-58488-1

Comments

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 additional comments.

Receipt

The samples were received on 8/10/2023 10:20 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.1° C.

GC/MS Semi VOA

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

LCMS

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.



Detection Summary

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

Job ID: 380-58488-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**
PWSID Number: HI0000331

Lab Sample ID: 380-58488-1

No Detections.

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.5		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L	1		537.1	Total/NA

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-58488-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-1

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
2,4'-DDD	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
2,4'-DDE	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
2,4'-DDT	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
2-Methylnaphthalene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
4,4'-DDD	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
4,4'-DDE	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
4,4'-DDT	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Acenaphthene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Acenaphthylene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Acetochlor	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Alachlor	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
alpha-BHC	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
alpha-Chlordane	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Anthracene	<0.020		0.020	ug/L		08/11/23 15:16	08/14/23 13:56	1
Atrazine	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Benz(a)anthracene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Benzo[a]pyrene	<0.020		0.020	ug/L		08/11/23 15:16	08/14/23 13:56	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		08/11/23 15:16	08/14/23 13:56	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		08/11/23 15:16	08/14/23 13:56	1
beta-BHC	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		08/11/23 15:16	08/14/23 13:56	1
Bromacil	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Butachlor	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Butylbenzylphthalate	<0.50		0.50	ug/L		08/11/23 15:16	08/14/23 13:56	1
Chlorobenzilate	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Chloroneb	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Chlorpyrifos	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Chrysene	<0.020		0.020	ug/L		08/11/23 15:16	08/14/23 13:56	1
delta-BHC	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		08/11/23 15:16	08/14/23 13:56	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Diclorvos (DDVP)	<0.050	^3+ *+	0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Dieldrin	<0.20		0.20	ug/L		08/11/23 15:16	08/14/23 13:56	1
Diethylphthalate	<0.50		0.50	ug/L		08/11/23 15:16	08/14/23 13:56	1
Dimethylphthalate	<0.50		0.50	ug/L		08/11/23 15:16	08/14/23 13:56	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		08/11/23 15:16	08/14/23 13:56	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Endosulfan sulfate	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Endrin	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Endrin aldehyde	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
EPTC	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1

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Client Sample Results

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

Job ID: 380-58488-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-1

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Fluorene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
gamma-Chlordane	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Heptachlor	<0.040		0.040	ug/L		08/11/23 15:16	08/14/23 13:56	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Hexachlorobenzene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Isophorone	<0.50		0.50	ug/L		08/11/23 15:16	08/14/23 13:56	1
Lindane	<0.040		0.040	ug/L		08/11/23 15:16	08/14/23 13:56	1
Malathion	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Methoxychlor	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Metolachlor	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Molinate	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Naphthalene	<0.30		0.30	ug/L		08/11/23 15:16	08/14/23 13:56	1
Parathion	<0.099	*+	0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Phenanthrene	<0.040		0.040	ug/L		08/11/23 15:16	08/14/23 13:56	1
Propachlor	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Pyrene	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Simazine	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Terbacil	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Terbutylazine	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1
Thiobencarb	<0.20		0.20	ug/L		08/11/23 15:16	08/14/23 13:56	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		08/11/23 15:16	08/14/23 13:56	1
trans-Nonachlor	<0.050		0.050	ug/L		08/11/23 15:16	08/14/23 13:56	1
Trifluralin	<0.099		0.099	ug/L		08/11/23 15:16	08/14/23 13:56	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	08/11/23 15:16	08/14/23 13:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	104		70 - 130	08/11/23 15:16	08/14/23 13:56	1
Perylene-d12	85		70 - 130	08/11/23 15:16	08/14/23 13:56	1
Triphenylphosphate	117		70 - 130	08/11/23 15:16	08/14/23 13:56	1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-3

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1

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Client Sample Results

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

Job ID: 380-58488-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-3

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorooctanesulfonic acid (PFOS)	2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	73		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C6 PFDA	87		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C5 PFHxA	82		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C4 PFHpA	85		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C8 PFOA	91		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C9 PFNA	88		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C7 PFUnA	91		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C2 PFDoA	93		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C4 PFBA	86		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C5 PFPeA	95		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C3 PFBS	99		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C3 PFHxS	104		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C8 PFOS	103		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C2-4:2-FTS	116		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C2-6:2-FTS	164		50 - 200	08/28/23 16:00	08/31/23 19:12	1
13C2-8:2-FTS	114		50 - 200	08/28/23 16:00	08/31/23 19:12	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-58488-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-3

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

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		08/14/23 06:59	08/15/23 13:55	1
Perfluorooctanesulfonic acid (PFOS)	2.3		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
N-methylperfluorooctanesulfonamide acid (NMeFOSAA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
N-ethylperfluorooctanesulfonamide acid (NEtFOSAA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorohexanoic acid (PFHxA)	2.5		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/14/23 06:59	08/15/23 13:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	105		70 - 130	08/14/23 06:59	08/15/23 13:55	1
13C2 PFHxA	108		70 - 130	08/14/23 06:59	08/15/23 13:55	1
13C2 PFDA	108		70 - 130	08/14/23 06:59	08/15/23 13:55	1
13C3-GenX	96		70 - 130	08/14/23 06:59	08/15/23 13:55	1

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-4

Date Collected: 08/08/23 10:00

Matrix: Water

Date Received: 08/10/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1

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Client Sample Results

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

Job ID: 380-58488-1

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-4

Date Collected: 08/08/23 10:00

Matrix: Water

Date Received: 08/10/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		08/28/23 16:00	08/31/23 19:22	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	83		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C6 PFDA	95		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C5 PFHxA	93		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C4 PFHpA	93		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C8 PFOA	95		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C9 PFNA	93		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C7 PFUnA	94		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C2 PFDoA	99		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C4 PFBA	89		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C5 PFPeA	89		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C3 PFBS	94		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C3 PFHxS	96		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C8 PFOS	96		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C2-4:2-FTS	110		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C2-6:2-FTS	100		50 - 200			08/28/23 16:00	08/31/23 19:22	1
13C2-8:2-FTS	97		50 - 200			08/28/23 16:00	08/31/23 19:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-58488-1

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
(331-206-TP065)**

Lab Sample ID: 380-58488-4

Date Collected: 08/08/23 10:00

Matrix: Water

Date Received: 08/10/23 10:20

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		08/14/23 06:59	08/16/23 13:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130			08/14/23 06:59	08/16/23 13:20	1
13C2 PFHxA	96		70 - 130			08/14/23 06:59	08/16/23 13:20	1
13C2 PFDA	96		70 - 130			08/14/23 06:59	08/16/23 13:20	1
13C3-GenX	91		70 - 130			08/14/23 06:59	08/16/23 13:20	1

Action Limit Summary

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

Job ID: 380-58488-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2
(331-206-TP065)
PWSID Number: HI0000331

Lab Sample ID: 380-58488-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	<0.050		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	<0.099		ug/L	2	0.099	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	<0.099		ug/L	40	0.099	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: 380-58488-1

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)
380-58488-1	HALAWA WELLS UNITS 1 & 2 (	104	85	117

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)
380-58487-R-1-A DU	Duplicate	101	80	118
380-58425-BE-1-A MS	Matrix Spike	102	91	123
LCS 380-51461/23-A	Lab Control Sample	99	93	121
LCS 380-51461/24-A	Lab Control Sample Dup	99	93	120
MB 380-51461/21-A	Method Blank	100	80	119
MRL 380-51461/22-A	Lab Control Sample	98	86	116

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)
380-58488-3	HALAWA WELLS UNITS 1 & 2 (	105	108	108	96
380-58488-3 MS	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	97	108	108	101
380-58488-3 MSD	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	97	112	110	105

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)
380-58488-4	FB HALAWA WELLS UNITS 1 &	99	96	96	91
LCS 380-51568/21-A	Lab Control Sample	100	107	103	105
LCS 380-51568/22-A	Lab Control Sample Dup	99	104	102	102
MBL 380-51568/19-A	Method Blank	123	117	126	100

Eurofins Eaton Analytical Pomona

Surrogate Summary

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

Job ID: 380-58488-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
MRL 380-51568/20-A	Lab Control Sample	112	112	104	102

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: 380-58488-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-58488-3	HALAWA WELLS UNITS 1 & 2 (	73	87	82	85	91	88	91	93

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)
380-58488-3	HALAWA WELLS UNITS 1 & 2 (	86	95	99	104	103	116	164	114

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-58343-B-3-B LMS	Matrix Spike	87	93	91	93	93	93	96	93
380-58343-C-3-B LMSD	Matrix Spike Duplicate	90	89	91	91	90	92	93	89
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	83	95	93	93	95	93	94	99
LCS 380-53518/23-A	Lab Control Sample	96	101	100	99	100	102	94	97
LCSD 380-53518/24-A	Lab Control Sample Dup	99	105	106	102	103	107	107	101
MBL 380-53518/21-A	Method Blank	94	95	106	101	102	103	97	95
MRL 380-53518/22-A	Lab Control Sample	91	99	101	96	103	101	101	94

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-58343-B-3-B LMS	Matrix Spike	96	123	96	98	96	126	105	105
380-58343-C-3-B LMSD	Matrix Spike Duplicate	96	125	95	98	100	119	109	106
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	89	89	94	96	96	110	100	97
LCS 380-53518/23-A	Lab Control Sample	100	107	96	97	99	103	97	100
LCSD 380-53518/24-A	Lab Control Sample Dup	100	105	105	106	108	115	106	107
MBL 380-53518/21-A	Method Blank	100	99	100	98	101	108	100	101
MRL 380-53518/22-A	Lab Control Sample	99	98	96	96	100	106	103	100

Surrogate Legend

Eurofins Eaton Analytical Pomona

Isotope Dilution Summary

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

Job ID: 380-58488-1

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

- 1
- 2
- 3
- 4
- 5
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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MB 380-51461/21-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51461

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
2,4'-DDD	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
2,4'-DDE	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
2,4'-DDT	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
2-Methylnaphthalene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
4,4'-DDD	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
4,4'-DDE	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
4,4'-DDT	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Acenaphthene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Acenaphthylene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Acetochlor	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Alachlor	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
alpha-BHC	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
alpha-Chlordane	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Anthracene	<0.020		0.020	ug/L		08/13/23 15:16	08/14/23 10:54	1
Atrazine	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Benz(a)anthracene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Benzo[a]pyrene	<0.020		0.020	ug/L		08/13/23 15:16	08/14/23 10:54	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		08/13/23 15:16	08/14/23 10:54	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		08/13/23 15:16	08/14/23 10:54	1
beta-BHC	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		08/13/23 15:16	08/14/23 10:54	1
Bromacil	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Butachlor	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Butylbenzylphthalate	<0.49		0.49	ug/L		08/13/23 15:16	08/14/23 10:54	1
Chlorobenzilate	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Chloroneb	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Chlorpyrifos	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Chrysene	<0.020		0.020	ug/L		08/13/23 15:16	08/14/23 10:54	1
delta-BHC	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		08/13/23 15:16	08/14/23 10:54	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Dieldrin	<0.20		0.20	ug/L		08/13/23 15:16	08/14/23 10:54	1
Diethylphthalate	<0.49		0.49	ug/L		08/13/23 15:16	08/14/23 10:54	1
Dimethylphthalate	<0.49		0.49	ug/L		08/13/23 15:16	08/14/23 10:54	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		08/13/23 15:16	08/14/23 10:54	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Endosulfan sulfate	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Endrin	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Endrin aldehyde	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
EPTC	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MB 380-51461/21-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51461

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Fluorene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
gamma-Chlordane	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Heptachlor	<0.039		0.039	ug/L		08/13/23 15:16	08/14/23 10:54	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Hexachlorobenzene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Isophorone	<0.49		0.49	ug/L		08/13/23 15:16	08/14/23 10:54	1
Lindane	<0.039		0.039	ug/L		08/13/23 15:16	08/14/23 10:54	1
Malathion	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Methoxychlor	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Metolachlor	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Molinate	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Naphthalene	<0.30		0.30	ug/L		08/13/23 15:16	08/14/23 10:54	1
Parathion	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Phenanthrene	<0.039		0.039	ug/L		08/13/23 15:16	08/14/23 10:54	1
Propachlor	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Pyrene	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Simazine	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Terbacil	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Terbutylazine	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1
Thiobencarb	<0.20		0.20	ug/L		08/13/23 15:16	08/14/23 10:54	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		08/13/23 15:16	08/14/23 10:54	1
trans-Nonachlor	<0.049		0.049	ug/L		08/13/23 15:16	08/14/23 10:54	1
Trifluralin	<0.099		0.099	ug/L		08/13/23 15:16	08/14/23 10:54	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Phenol, 4-(1,1-dimethylpropyl)-	2.26	T J N	ug/L		3.88	80-46-6	08/13/23 15:16	08/14/23 10:54	1
Tetradecanoic acid	1.20	T J N	ug/L		5.85	544-63-8	08/13/23 15:16	08/14/23 10:54	1
6-Octadecenoic acid	1.47	T J N	ug/L		6.47	1000336-66-8	08/13/23 15:16	08/14/23 10:54	1
Octadecanoic acid	1.07	T J N	ug/L		6.54	57-11-4	08/13/23 15:16	08/14/23 10:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	08/13/23 15:16	08/14/23 10:54	1
Perylene-d12	80		70 - 130	08/13/23 15:16	08/14/23 10:54	1
Triphenylphosphate	119		70 - 130	08/13/23 15:16	08/14/23 10:54	1

Lab Sample ID: LCS 380-51461/23-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51461

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	2.24		ug/L		114	70 - 130
2,4'-DDE	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: 380-58488-1

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

Lab Sample ID: LCS 380-51461/23-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDT	1.97	2.37		ug/L		120	70 - 130
2,4-Dinitrotoluene	1.97	2.24		ug/L		114	70 - 130
2,6-Dinitrotoluene	1.97	2.19		ug/L		111	70 - 130
2-Methylnaphthalene	1.97	1.96		ug/L		100	70 - 130
4,4'-DDD	1.97	2.28		ug/L		116	70 - 130
4,4'-DDE	1.97	2.09		ug/L		106	70 - 130
4,4'-DDT	1.97	2.41		ug/L		122	70 - 130
Acenaphthene	1.97	1.90		ug/L		96	70 - 130
Acenaphthylene	1.97	2.01		ug/L		102	70 - 130
Acetochlor	1.97	2.43		ug/L		123	70 - 130
Alachlor	1.97	2.25		ug/L		114	70 - 130
alpha-BHC	1.97	2.01		ug/L		102	70 - 130
alpha-Chlordane	1.97	2.09		ug/L		106	70 - 130
Anthracene	1.97	1.94		ug/L		99	70 - 130
Atrazine	1.97	2.38		ug/L		121	70 - 130
Benz(a)anthracene	1.97	2.38		ug/L		121	70 - 130
Benzo[a]pyrene	1.97	2.09		ug/L		106	70 - 130
Benzo[b]fluoranthene	1.97	2.19		ug/L		111	70 - 130
Benzo[g,h,i]perylene	1.97	2.00		ug/L		101	70 - 130
Benzo[k]fluoranthene	1.97	2.22		ug/L		113	70 - 130
beta-BHC	1.97	2.06		ug/L		104	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	1.77		ug/L		90	70 - 130
Bromacil	1.97	2.36		ug/L		120	70 - 130
Butachlor	1.97	2.49		ug/L		126	70 - 130
Butylbenzylphthalate	1.97	2.18		ug/L		111	70 - 130
Chlorobenzilate	1.97	2.38		ug/L		121	70 - 130
Chloroneb	1.97	1.99		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	2.29		ug/L		116	70 - 130
Chlorpyrifos	1.97	2.37		ug/L		121	70 - 130
Chrysene	1.97	2.04		ug/L		103	70 - 130
delta-BHC	1.97	1.94		ug/L		99	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.15		ug/L		109	70 - 130
Dibenz(a,h)anthracene	1.97	2.10		ug/L		107	70 - 130
Diclorvos (DDVP)	1.97	2.73	*+	ug/L		138	70 - 130
Dieldrin	1.97	2.16		ug/L		110	70 - 130
Diethylphthalate	1.97	2.21		ug/L		112	70 - 130
Dimethylphthalate	1.97	2.15		ug/L		109	70 - 130
Di-n-butyl phthalate	3.94	4.30		ug/L		109	70 - 130
Di-n-octyl phthalate	1.97	1.71		ug/L		87	70 - 130
Endosulfan I (Alpha)	1.97	1.81		ug/L		92	70 - 130
Endosulfan II (Beta)	1.97	2.14		ug/L		108	70 - 130
Endosulfan sulfate	1.97	2.41		ug/L		123	70 - 130
Endrin	1.97	2.44		ug/L		124	70 - 130
Endrin aldehyde	1.97	2.07		ug/L		105	70 - 130
EPTC	1.97	2.18		ug/L		111	70 - 130
Fluoranthene	1.97	2.28		ug/L		116	70 - 130
Fluorene	1.97	2.16		ug/L		110	70 - 130
gamma-Chlordane	1.97	2.16		ug/L		109	70 - 130
Heptachlor	1.97	2.25		ug/L		114	70 - 130

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCS 380-51461/23-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor epoxide (isomer B)	1.97	2.24		ug/L		114	70 - 130
Hexachlorobenzene	1.97	2.12		ug/L		108	70 - 130
Hexachlorocyclopentadiene	1.97	2.31		ug/L		117	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.05		ug/L		104	70 - 130
Isophorone	1.97	2.11		ug/L		107	70 - 130
Lindane	1.97	2.01		ug/L		102	70 - 130
Malathion	1.97	2.32		ug/L		118	70 - 130
Methoxychlor	1.97	2.24		ug/L		113	70 - 130
Metolachlor	1.97	2.37		ug/L		120	70 - 130
Molinate	1.97	2.30		ug/L		117	70 - 130
Naphthalene	1.97	1.88		ug/L		96	70 - 130
Parathion	1.97	2.69	*+	ug/L		137	70 - 130
Pendimethalin (Penoxaline)	1.97	2.54		ug/L		129	70 - 130
Phenanthrene	1.97	1.90		ug/L		97	70 - 130
Propachlor	1.97	2.32		ug/L		118	70 - 130
Pyrene	1.97	2.32		ug/L		118	70 - 130
Simazine	1.97	2.39		ug/L		122	70 - 130
Terbacil	1.97	2.33		ug/L		118	70 - 130
Terbutylazine	1.97	2.52		ug/L		128	70 - 130
Thiobencarb	1.97	2.30		ug/L		117	70 - 130
trans-Nonachlor	1.97	2.27		ug/L		115	70 - 130
Trifluralin	1.97	2.37		ug/L		120	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	93		70 - 130
Triphenylphosphate	121		70 - 130

Lab Sample ID: LCSD 380-51461/24-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.97	1.96		ug/L		100	70 - 130	0	20
2,4'-DDD	1.97	2.22		ug/L		113	70 - 130	1	20
2,4'-DDE	1.97	2.12		ug/L		108	70 - 130	2	20
2,4'-DDT	1.97	2.33		ug/L		119	70 - 130	2	20
2,4-Dinitrotoluene	1.97	2.23		ug/L		113	70 - 130	1	20
2,6-Dinitrotoluene	1.97	2.21		ug/L		113	70 - 130	1	20
2-Methylnaphthalene	1.97	1.99		ug/L		101	70 - 130	1	20
4,4'-DDD	1.97	2.24		ug/L		114	70 - 130	2	20
4,4'-DDE	1.97	2.07		ug/L		105	70 - 130	1	20
4,4'-DDT	1.97	2.35		ug/L		119	70 - 130	3	20
Acenaphthene	1.97	1.87		ug/L		95	70 - 130	1	20
Acenaphthylene	1.97	1.98		ug/L		101	70 - 130	2	20
Acetochlor	1.97	2.44		ug/L		124	70 - 130	0	20
Alachlor	1.97	2.18		ug/L		111	70 - 130	3	20
alpha-BHC	1.97	2.00		ug/L		102	70 - 130	1	20

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCSD 380-51461/24-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 51571

Prep Batch: 51461

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
alpha-Chlordane	1.97	2.06		ug/L		105	70 - 130	2	20	
Anthracene	1.97	1.93		ug/L		98	70 - 130	1	20	
Atrazine	1.97	2.37		ug/L		121	70 - 130	0	20	
Benz(a)anthracene	1.97	2.35		ug/L		120	70 - 130	1	20	
Benzo[a]pyrene	1.97	2.13		ug/L		108	70 - 130	2	20	
Benzo[b]fluoranthene	1.97	2.26		ug/L		115	70 - 130	3	20	
Benzo[g,h,i]perylene	1.97	2.05		ug/L		104	70 - 130	2	20	
Benzo[k]fluoranthene	1.97	2.20		ug/L		112	70 - 130	1	20	
beta-BHC	1.97	1.99		ug/L		101	70 - 130	3	20	
Bis(2-ethylhexyl) phthalate	1.97	1.75		ug/L		89	70 - 130	1	20	
Bromacil	1.97	2.36		ug/L		120	70 - 130	0	20	
Butachlor	1.97	2.42		ug/L		123	70 - 130	3	20	
Butylbenzylphthalate	1.97	2.14		ug/L		109	70 - 130	2	20	
Chlorobenzilate	1.97	2.35		ug/L		119	70 - 130	2	20	
Chloroneb	1.97	2.02		ug/L		103	70 - 130	2	20	
Chlorothalonil (Draconil, Bravo)	1.97	2.26		ug/L		115	70 - 130	1	20	
Chlorpyrifos	1.97	2.33		ug/L		119	70 - 130	2	20	
Chrysene	1.97	2.05		ug/L		104	70 - 130	1	20	
delta-BHC	1.97	1.88		ug/L		95	70 - 130	4	20	
Di(2-ethylhexyl)adipate	1.97	2.07		ug/L		105	70 - 130	4	20	
Dibenz(a,h)anthracene	1.97	2.13		ug/L		108	70 - 130	1	20	
Diclorvos (DDVP)	1.97	2.78	*+	ug/L		142	70 - 130	2	20	
Dieldrin	1.97	2.18		ug/L		111	70 - 130	1	20	
Diethylphthalate	1.97	2.19		ug/L		111	70 - 130	1	20	
Dimethylphthalate	1.97	2.14		ug/L		109	70 - 130	1	20	
Di-n-butyl phthalate	3.93	4.19		ug/L		107	70 - 130	3	20	
Di-n-octyl phthalate	1.97	1.65		ug/L		84	70 - 130	4	20	
Endosulfan I (Alpha)	1.97	1.78		ug/L		91	70 - 130	2	20	
Endosulfan II (Beta)	1.97	2.14		ug/L		109	70 - 130	0	20	
Endosulfan sulfate	1.97	2.39		ug/L		122	70 - 130	1	20	
Endrin	1.97	2.39		ug/L		122	70 - 130	2	20	
Endrin aldehyde	1.97	2.09		ug/L		106	70 - 130	1	20	
EPTC	1.97	2.20		ug/L		112	70 - 130	1	20	
Fluoranthene	1.97	2.24		ug/L		114	70 - 130	2	20	
Fluorene	1.97	2.16		ug/L		110	70 - 130	0	20	
gamma-Chlordane	1.97	2.13		ug/L		108	70 - 130	1	20	
Heptachlor	1.97	2.25		ug/L		114	70 - 130	0	20	
Heptachlor epoxide (isomer B)	1.97	2.20		ug/L		112	70 - 130	2	20	
Hexachlorobenzene	1.97	2.11		ug/L		107	70 - 130	0	20	
Hexachlorocyclopentadiene	1.97	2.27		ug/L		115	70 - 130	2	20	
Indeno[1,2,3-cd]pyrene	1.97	2.10		ug/L		107	70 - 130	2	20	
Isophorone	1.97	2.14		ug/L		109	70 - 130	2	20	
Lindane	1.97	1.99		ug/L		101	70 - 130	1	20	
Malathion	1.97	2.30		ug/L		117	70 - 130	1	20	
Methoxychlor	1.97	2.25		ug/L		114	70 - 130	1	20	
Metolachlor	1.97	2.35		ug/L		120	70 - 130	1	20	
Molinate	1.97	2.32		ug/L		118	70 - 130	1	20	
Naphthalene	1.97	1.89		ug/L		96	70 - 130	0	20	
Parathion	1.97	2.59	*+	ug/L		132	70 - 130	4	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCSD 380-51461/24-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pendimethalin (Penoxaline)	1.97	2.51		ug/L		128	70 - 130	1	20
Phenanthrene	1.97	1.89		ug/L		96	70 - 130	1	20
Propachlor	1.97	2.31		ug/L		118	70 - 130	0	20
Pyrene	1.97	2.29		ug/L		116	70 - 130	1	20
Simazine	1.97	2.37		ug/L		120	70 - 130	1	20
Terbacil	1.97	2.29		ug/L		117	70 - 130	1	20
Terbutylazine	1.97	2.43		ug/L		124	70 - 130	4	20
Thiobencarb	1.97	2.24		ug/L		114	70 - 130	3	20
trans-Nonachlor	1.97	2.25		ug/L		115	70 - 130	1	20
Trifluralin	1.97	2.36		ug/L		120	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	93		70 - 130
Triphenylphosphate	120		70 - 130

Lab Sample ID: MRL 380-51461/22-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0986	0.106		ug/L		107	50 - 150
2,4'-DDD	0.0986	0.127		ug/L		129	50 - 150
2,4'-DDE	0.0986	0.109		ug/L		110	50 - 150
2,4'-DDT	0.0986	0.120		ug/L		122	50 - 150
2,4-Dinitrotoluene	0.0986	0.121		ug/L		122	50 - 150
2,6-Dinitrotoluene	0.0986	0.111		ug/L		112	50 - 150
2-Methylnaphthalene	0.0986	0.104		ug/L		106	50 - 150
4,4'-DDD	0.0986	0.114		ug/L		116	50 - 150
4,4'-DDE	0.0986	0.109		ug/L		111	50 - 150
4,4'-DDT	0.0986	0.133		ug/L		135	50 - 150
Acenaphthene	0.0986	0.0949	J	ug/L		96	50 - 150
Acenaphthylene	0.0986	0.0898	J	ug/L		91	50 - 150
Acetochlor	0.0493	0.0504	J	ug/L		102	50 - 150
Alachlor	0.0493	0.0509		ug/L		103	50 - 150
alpha-BHC	0.0986	0.0940	J	ug/L		95	50 - 150
alpha-Chlordane	0.0247	<0.029		ug/L		86	50 - 150
Anthracene	0.0197	<0.019		ug/L		90	50 - 150
Atrazine	0.0493	0.0663		ug/L		134	50 - 150
Benz(a)anthracene	0.0493	0.0516		ug/L		105	50 - 150
Benzo[a]pyrene	0.0197	0.0175	J	ug/L		89	50 - 150
Benzo[b]fluoranthene	0.0197	0.0203		ug/L		103	50 - 150
Benzo[g,h,i]perylene	0.0493	0.0421	J	ug/L		85	50 - 150
Benzo[k]fluoranthene	0.0197	0.0213		ug/L		108	50 - 150
beta-BHC	0.0986	0.0923	J	ug/L		94	50 - 150
Bis(2-ethylhexyl) phthalate	0.592	0.712		ug/L		120	50 - 150
Bromacil	0.0986	0.138		ug/L		140	50 - 150
Butachlor	0.0493	0.0618		ug/L		125	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MRL 380-51461/22-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butylbenzylphthalate	0.148	0.198	J	ug/L		134	50 - 150
Chlorobenzilate	0.0986	0.138		ug/L		140	50 - 150
Chloroneb	0.0986	0.104		ug/L		106	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0986	0.130		ug/L		132	50 - 150
Chlorpyrifos	0.0493	0.0561		ug/L		114	50 - 150
Chrysene	0.0197	0.0206		ug/L		104	50 - 150
delta-BHC	0.0986	0.103		ug/L		105	50 - 150
Di(2-ethylhexyl)adipate	0.296	0.400	J	ug/L		135	50 - 150
Dibenz(a,h)anthracene	0.0493	0.0436	J	ug/L		88	50 - 150
Diclorvos (DDVP)	0.0493	0.0915	^3+	ug/L		186	50 - 150
Dieldrin	0.0986	0.105	J	ug/L		107	50 - 150
Diethylphthalate	0.148	0.181	J	ug/L		122	50 - 150
Dimethylphthalate	0.296	0.306	J	ug/L		104	50 - 150
Di-n-butyl phthalate	0.296	0.356	J	ug/L		120	49 - 243
Di-n-octyl phthalate	0.0986	0.118		ug/L		120	50 - 150
Endosulfan I (Alpha)	0.0986	0.0888	J	ug/L		90	50 - 150
Endosulfan II (Beta)	0.0986	0.115		ug/L		116	50 - 150
Endosulfan sulfate	0.0986	0.122		ug/L		124	50 - 150
Endrin	0.0986	0.110		ug/L		111	50 - 150
Endrin aldehyde	0.0986	0.143		ug/L		145	50 - 150
EPTC	0.0986	0.104		ug/L		105	50 - 150
Fluoranthene	0.0493	0.0518	J	ug/L		105	50 - 150
Fluorene	0.0493	0.0563		ug/L		114	50 - 150
gamma-Chlordane	0.0247	0.0246	J	ug/L		100	50 - 150
Heptachlor	0.0394	0.0546		ug/L		138	50 - 150
Heptachlor epoxide (isomer B)	0.0493	0.0486	J	ug/L		98	50 - 150
Hexachlorobenzene	0.0493	0.0510		ug/L		104	50 - 150
Hexachlorocyclopentadiene	0.0493	0.0415	J	ug/L		84	50 - 150
Indeno[1,2,3-cd]pyrene	0.0493	0.0391	J	ug/L		79	50 - 150
Isophorone	0.0986	0.109	J	ug/L		110	50 - 150
Lindane	0.0394	0.0392		ug/L		99	50 - 150
Malathion	0.0986	0.122		ug/L		124	50 - 150
Methoxychlor	0.0986	0.130		ug/L		131	50 - 150
Metolachlor	0.0493	0.0586		ug/L		119	50 - 150
Molinate	0.0986	0.110		ug/L		111	50 - 150
Naphthalene	0.0986	0.106	J	ug/L		108	50 - 150
Parathion	0.0986	0.139		ug/L		141	50 - 150
Pendimethalin (Penoxaline)	0.0986	0.134		ug/L		136	50 - 150
Phenanthrene	0.0197	0.0222	J	ug/L		113	50 - 150
Propachlor	0.0493	0.0540		ug/L		110	50 - 150
Pyrene	0.0493	0.0535		ug/L		109	50 - 150
Simazine	0.0493	0.0567		ug/L		115	50 - 150
Terbacil	0.0986	0.128		ug/L		130	50 - 150
Terbutylazine	0.0986	0.104		ug/L		106	50 - 150
Thiobencarb	0.0986	0.120	J	ug/L		122	50 - 150
trans-Nonachlor	0.0247	<0.026		ug/L		95	50 - 150
Trifluralin	0.0986	0.119		ug/L		121	50 - 150

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MRL 380-51461/22-A
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51461

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	86		70 - 130
Triphenylphosphate	116		70 - 130

Lab Sample ID: 380-58425-BE-1-A MS
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.097		1.95	1.96		ug/L		101	70 - 130
2,4'-DDD	<0.097		1.95	2.23		ug/L		115	70 - 130
2,4'-DDE	<0.097		1.95	2.10		ug/L		108	70 - 130
2,4'-DDT	<0.097		1.95	2.33		ug/L		119	70 - 130
2,4-Dinitrotoluene	<0.097		1.95	2.25		ug/L		116	70 - 130
2,6-Dinitrotoluene	<0.097		1.95	2.22		ug/L		114	70 - 130
2-Methylnaphthalene	<0.097		1.95	1.97		ug/L		101	70 - 130
4,4'-DDD	<0.097		1.95	2.24		ug/L		115	70 - 130
4,4'-DDE	<0.097		1.95	2.03		ug/L		104	70 - 130
4,4'-DDT	<0.097		1.95	2.36		ug/L		121	70 - 130
Acenaphthene	<0.097		1.95	1.85		ug/L		95	70 - 130
Acenaphthylene	<0.097		1.95	1.97		ug/L		101	70 - 130
Acetochlor	<0.097		1.95	2.45		ug/L		126	70 - 130
Alachlor	<0.049		1.95	2.21		ug/L		113	70 - 130
alpha-BHC	<0.097		1.95	1.95		ug/L		100	70 - 130
alpha-Chlordane	<0.049		1.95	2.09		ug/L		107	70 - 130
Anthracene	<0.019	F1	1.95	0.422	F1	ug/L		22	70 - 130
Atrazine	<0.049		1.95	2.34		ug/L		120	70 - 130
Benz(a)anthracene	<0.049		1.95	1.79		ug/L		92	70 - 130
Benzo[a]pyrene	<0.019	F1	1.95	0.999	F1	ug/L		51	70 - 130
Benzo[b]fluoranthene	<0.019		1.95	2.18		ug/L		112	70 - 130
Benzo[g,h,i]perylene	<0.049		1.95	2.03		ug/L		104	70 - 130
Benzo[k]fluoranthene	<0.019		1.95	2.20		ug/L		113	70 - 130
beta-BHC	<0.097		1.95	1.98		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	<0.58		1.95	1.81		ug/L		93	70 - 130
Bromacil	<0.097		1.95	2.44		ug/L		126	70 - 130
Butachlor	<0.049		1.95	2.48		ug/L		128	70 - 130
Butylbenzylphthalate	<0.49		1.95	2.19		ug/L		112	70 - 130
Chlorobenzilate	<0.097		1.95	2.37		ug/L		122	70 - 130
Chloroneb	<0.097		1.95	1.99		ug/L		102	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.097		1.95	2.25		ug/L		116	70 - 130
Chlorpyrifos	<0.049		1.95	2.35		ug/L		121	70 - 130
Chrysene	<0.019		1.95	2.03		ug/L		104	70 - 130
delta-BHC	<0.097		1.95	1.89		ug/L		97	70 - 130
Di(2-ethylhexyl)adipate	<0.58		1.95	2.61		ug/L		124	70 - 130
Dibenz(a,h)anthracene	<0.049		1.95	2.14		ug/L		110	70 - 130
Diclorvos (DDVP)	<0.049	F1 ^3+ **	1.95	2.74	F1	ug/L		141	70 - 130
Dieldrin	<0.19		1.95	2.19		ug/L		112	70 - 130
Diethylphthalate	<0.49		1.95	2.16		ug/L		111	70 - 130

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: 380-58487-R-1-A DU
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
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	<0.050		<0.049		ug/L		NC	20
alpha-BHC	<0.099		<0.098		ug/L		NC	20
alpha-Chlordane	<0.050		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.050		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.050		<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	<0.050		<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	<0.050		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.50		<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	<0.050		<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	<0.050		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.050	^3+ *+	<0.049	*+	ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.50		<0.49		ug/L		NC	20
Dimethylphthalate	<0.50		<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	<0.050		<0.049		ug/L		NC	20
gamma-Chlordane	<0.050		<0.049		ug/L		NC	20

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: 380-58487-R-1-A DU
Matrix: Water
Analysis Batch: 51571

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 51461

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Heptachlor	<0.040		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.050		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.050		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.050		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.050		<0.049		ug/L		NC	20
Isophorone	<0.50		<0.49		ug/L		NC	20
Lindane	<0.040		<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	<0.050		<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	<0.040		<0.039		ug/L		NC	20
Propachlor	<0.050		<0.049		ug/L		NC	20
Pyrene	<0.050		<0.049		ug/L		NC	20
Simazine	<0.050		<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	<0.050		<0.049		ug/L		NC	20
Trifluralin	<0.099		<0.098		ug/L		NC	20
		DU	DU					
Surrogate	%Recovery	Qualifier	Limits					
2-Nitro-m-xylene	101		70 - 130					
Perylene-d12	80		70 - 130					
Triphenylphosphate	118		70 - 130					

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

Lab Sample ID: MBL 380-53518/21-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53518

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MBL 380-53518/21-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53518

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		08/28/23 16:00	08/30/23 14:52	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C6 PFDA	95		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C5 PFHxA	106		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C4 PFHpA	101		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C8 PFOA	102		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C9 PFNA	103		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C7 PFUnA	97		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C2 PFDoA	95		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C4 PFBA	100		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C5 PFPeA	99		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C3 PFBS	100		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C3 PFHxS	98		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C8 PFOS	101		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C2-4:2-FTS	108		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C2-6:2-FTS	100		50 - 200	08/28/23 16:00	08/30/23 14:52	1
13C2-8:2-FTS	101		50 - 200	08/28/23 16:00	08/30/23 14:52	1

Lab Sample ID: LCS 380-53518/23-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	120	120		ng/L		100	70 - 130

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCS 380-53518/23-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	119		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	120		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	132		ng/L		110	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	119		ng/L		99	70 - 130
Perfluorodecanoic acid (PFDA)	120	110		ng/L		92	70 - 130
Perfluorododecanoic acid (PFDoA)	120	121		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	112		ng/L		93	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	120	118		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	120	120		ng/L		100	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	116		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	120	120		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	125		ng/L		104	70 - 130
Perfluorobutanoic acid (PFBA)	120	119		ng/L		99	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	115		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	116		ng/L		96	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	122		ng/L		102	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	117		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	119		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	115		ng/L		96	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	111		ng/L		92	70 - 130
Perfluoropentanoic acid (PFPeA)	120	117		ng/L		97	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	116		ng/L		97	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	121		ng/L		100	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	96		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	102		50 - 200
13C7 PFUnA	94		50 - 200
13C2 PFDoA	97		50 - 200
13C4 PFBA	100		50 - 200

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCS 380-53518/23-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53518

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C5 PFPeA	107		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	97		50 - 200
13C8 PFOS	99		50 - 200
13C2-4:2-FTS	103		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: LCSD 380-53518/24-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53518

<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	115		ng/L		95	70 - 130	4	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	114		ng/L		94	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	113		ng/L		94	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	109		ng/L		90	70 - 130	19	30
Perfluorobutanesulfonic acid (PFBS)	120	113		ng/L		94	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	120	111		ng/L		92	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	120	119		ng/L		99	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	120	107		ng/L		89	70 - 130	4	30
Perfluorohexanesulfonic acid (PFHxS)	120	111		ng/L		92	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	120	108		ng/L		90	70 - 130	9	30
Perfluorononanoic acid (PFNA)	120	115		ng/L		96	70 - 130	4	30
Perfluorooctanesulfonic acid (PFOS)	120	111		ng/L		92	70 - 130	5	30
Perfluorooctanoic acid (PFOA)	120	114		ng/L		95	70 - 130	5	30
Perfluoroundecanoic acid (PFUnA)	120	111		ng/L		93	70 - 130	11	30
Perfluorobutanoic acid (PFBA)	120	111		ng/L		92	70 - 130	7	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	113		ng/L		94	70 - 130	2	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	113		ng/L		94	70 - 130	2	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	113		ng/L		94	70 - 130	8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	103		ng/L		86	70 - 130	12	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	107		ng/L		89	70 - 130	10	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	112		ng/L		93	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	107		ng/L		88	70 - 130	4	30

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCSD 380-53518/24-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	120	105		ng/L		87	70 - 130	10	30
Perfluoroheptanesulfonic acid (PFHpS)	120	111		ng/L		92	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	120	118		ng/L		98	70 - 130	2	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	99		50 - 200
13C6 PFDA	105		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	107		50 - 200
13C7 PFUnA	107		50 - 200
13C2 PFDoA	101		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	105		50 - 200
13C3 PFBS	105		50 - 200
13C3 PFHxS	106		50 - 200
13C8 PFOS	108		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	106		50 - 200
13C2-8:2-FTS	107		50 - 200

Lab Sample ID: MRL 380-53518/22-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.03	J	ng/L		101	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.22	J	ng/L		111	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.09	J	ng/L		104	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.12	J	ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.15	J	ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.01	J	ng/L		100	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.07	J	ng/L		103	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MRL 380-53518/22-A
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.25	J	ng/L		112	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.02	J	ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.33	J	ng/L		116	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.14	J	ng/L		107	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.85	J	ng/L		92	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	2.09	J	ng/L		104	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	99		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	96		50 - 200
13C8 PFOA	103		50 - 200
13C9 PFNA	101		50 - 200
13C7 PFUnA	101		50 - 200
13C2 PFDoA	94		50 - 200
13C4 PFBA	99		50 - 200
13C5 PFPeA	98		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	96		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	103		50 - 200
13C2-8:2-FTS	100		50 - 200

Lab Sample ID: 380-58343-B-3-B LMS
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.04		ng/L		102	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.01	2.22		ng/L		111	50 - 150

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: 380-58343-B-3-B LMS
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.00		ng/L		100	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.03		ng/L		101	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.75		ng/L		137	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.05		ng/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.00		ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.91		ng/L		95	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	2.77		ng/L		90	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.62		ng/L		95	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.35		ng/L		117	50 - 150
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	3.72		ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.63		ng/L		98	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	1.92	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	2.5		2.01	4.81		ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	1.97	J	ng/L		98	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.17		ng/L		108	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.45		ng/L		122	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.91	J	ng/L		95	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	1.87	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.31		ng/L		115	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.11		ng/L		105	50 - 150
Perfluoropentanoic acid (PFPeA)	<2.0	F1	2.01	3.66	F1	ng/L		182	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.18		ng/L		109	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.20		ng/L		110	50 - 150

Isotope Dilution	LMS %Recovery	LMS Qualifier	Limits
13C3 HFPO-DA	87		50 - 200
13C6 PFDA	93		50 - 200
13C5 PFHxA	91		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	93		50 - 200
13C9 PFNA	93		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	96		50 - 200
13C5 PFPeA	123		50 - 200
13C3 PFBS	96		50 - 200
13C3 PFHxS	98		50 - 200

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: 380-58343-B-3-B LMS
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53518

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	126		50 - 200
13C2-6:2-FTS	105		50 - 200
13C2-8:2-FTS	105		50 - 200

Lab Sample ID: 380-58343-C-3-B LMSD
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53518

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>LMSD Result</i>	<i>LMSD 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		2.01	1.98	J	ng/L		99	50 - 150	3	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.13		ng/L		106	50 - 150	4	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	1.94	J	ng/L		97	50 - 150	3	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	1.94	J	ng/L		97	50 - 150	4	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.79		ng/L		139	50 - 150	1	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.11		ng/L		105	50 - 150	3	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.06		ng/L		102	50 - 150	3	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.87		ng/L		93	50 - 150	1	50
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	2.69		ng/L		86	50 - 150	3	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	3.53		ng/L		91	50 - 150	2	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.23		ng/L		111	50 - 150	5	50
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	3.30		ng/L		79	50 - 150	12	50
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.66		ng/L		100	50 - 150	1	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.04		ng/L		101	50 - 150	6	50
Perfluorobutanoic acid (PFBA)	2.5		2.01	4.76		ng/L		111	50 - 150	1	50
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.02		ng/L		101	50 - 150	3	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.22		ng/L		110	50 - 150	2	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.15		ng/L		107	50 - 150	13	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.75	J	ng/L		87	50 - 150	9	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	1.91	J	ng/L		95	50 - 150	2	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.33		ng/L		116	50 - 150	1	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	1.99	J	ng/L		99	50 - 150	6	50
Perfluoropentanoic acid (PFPeA)	<2.0	F1	2.01	3.70	F1	ng/L		184	50 - 150	1	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	1.98	J	ng/L		99	50 - 150	9	50

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: 380-58343-C-3-B LMSD
Matrix: Water
Analysis Batch: 53732

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53518

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.12		ng/L		105	50 - 150	4	50
LMSD LMSD											
Isotope Dilution	%Recovery	Qualifier	Limits								
13C3 HFPO-DA	90		50 - 200								
13C6 PFDA	89		50 - 200								
13C5 PFHxA	91		50 - 200								
13C4 PFHpA	91		50 - 200								
13C8 PFOA	90		50 - 200								
13C9 PFNA	92		50 - 200								
13C7 PFUnA	93		50 - 200								
13C2 PFDoA	89		50 - 200								
13C4 PFBA	96		50 - 200								
13C5 PFPeA	125		50 - 200								
13C3 PFBS	95		50 - 200								
13C3 PFHxS	98		50 - 200								
13C8 PFOS	100		50 - 200								
13C2-4:2-FTS	119		50 - 200								
13C2-6:2-FTS	109		50 - 200								
13C2-8:2-FTS	106		50 - 200								

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

Lab Sample ID: MBL 380-51568/19-A
Matrix: Water
Analysis Batch: 51813

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51568

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		08/14/23 06:59	08/16/23 13:09	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<0.58		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<0.42		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1
11-Chloroeicosadecafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		08/14/23 06:59	08/16/23 13:09	1

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MBL 380-51568/19-A
Matrix: Water
Analysis Batch: 51813

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51568

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		08/14/23 06:59	08/16/23 13:09	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	123		70 - 130	08/14/23 06:59	08/16/23 13:09	1
13C2 PFHxA	117		70 - 130	08/14/23 06:59	08/16/23 13:09	1
13C2 PFDA	126		70 - 130	08/14/23 06:59	08/16/23 13:09	1
13C3-GenX	100		70 - 130	08/14/23 06:59	08/16/23 13:09	1

Lab Sample ID: LCS 380-51568/21-A
Matrix: Water
Analysis Batch: 51813

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	24.1		ng/L		96	70 - 130
Perfluorooctanesulfonic acid (PFOS)	23.2	24.6		ng/L		106	70 - 130
Perfluoroundecanoic acid (PFUnA)	25.1	24.2		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	25.3		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	24.3		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	25.1	26.8		ng/L		107	70 - 130
Perfluorododecanoic acid (PFDoA)	25.1	23.2		ng/L		92	70 - 130
Perfluorooctanoic acid (PFOA)	25.1	27.1		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	25.1	25.5		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	22.9	23.3		ng/L		102	70 - 130
Perfluorobutanesulfonic acid (PFBS)	22.2	22.2		ng/L		100	70 - 130
Perfluoroheptanoic acid (PFHpA)	25.1	26.1		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	25.1	27.8		ng/L		111	70 - 130
Perfluorotetradecanoic acid (PFTA)	25.1	21.6		ng/L		86	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	25.1	24.0		ng/L		96	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	23.5	22.6		ng/L		96	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	22.9		ng/L		97	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	24.8		ng/L		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	100		70 - 130
13C2 PFHxA	107		70 - 130
13C2 PFDA	103		70 - 130

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QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: LCS 380-51568/21-A
Matrix: Water
Analysis Batch: 51813

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51568

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C3-GenX	105		70 - 130

Lab Sample ID: LCSD 380-51568/22-A
Matrix: Water
Analysis Batch: 51813

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 51568

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	25.1	26.2		ng/L		105	70 - 130	8	30	
Perfluorooctanesulfonic acid (PFOS)	23.2	27.0		ng/L		116	70 - 130	9	30	
Perfluoroundecanoic acid (PFUnA)	25.1	25.3		ng/L		101	70 - 130	4	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.1	26.1		ng/L		104	70 - 130	3	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.1	26.6		ng/L		106	70 - 130	9	30	
Perfluorohexanoic acid (PFHxA)	25.1	27.3		ng/L		109	70 - 130	2	30	
Perfluorododecanoic acid (PFDoA)	25.1	24.6		ng/L		98	70 - 130	6	30	
Perfluorooctanoic acid (PFOA)	25.1	27.2		ng/L		109	70 - 130	0	30	
Perfluorodecanoic acid (PFDA)	25.1	26.5		ng/L		106	70 - 130	4	30	
Perfluorohexanesulfonic acid (PFHxS)	22.9	24.2		ng/L		106	70 - 130	4	30	
Perfluorobutanesulfonic acid (PFBS)	22.2	25.0		ng/L		113	70 - 130	12	30	
Perfluoroheptanoic acid (PFHpA)	25.1	26.7		ng/L		106	70 - 130	2	30	
Perfluorononanoic acid (PFNA)	25.1	29.5		ng/L		118	70 - 130	6	30	
Perfluorotetradecanoic acid (PFTA)	25.1	23.6		ng/L		94	70 - 130	9	30	
Perfluorotridecanoic acid (PFTrDA)	25.1	24.8		ng/L		99	70 - 130	3	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	23.4	25.9		ng/L		111	70 - 130	14	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	23.7	24.7		ng/L		104	70 - 130	7	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	23.7	25.6		ng/L		108	70 - 130	3	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	104		70 - 130
13C2 PFDA	102		70 - 130
13C3-GenX	102		70 - 130

QC Sample Results

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

Job ID: 380-58488-1

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

Lab Sample ID: MRL 380-51568/20-A
Matrix: Water
Analysis Batch: 51813

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51568

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.12	J	ng/L		114	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.99	J	ng/L		99	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.04	J	ng/L		102	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.41	J	ng/L		120	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.10	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	2.10	J	ng/L		115	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.99	J	ng/L		112	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.41	J	ng/L		120	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.45	J	ng/L		122	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.93	J	ng/L		96	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.93	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	2.02	J	ng/L		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.14	J	ng/L		113	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	112		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	102		70 - 130

Lab Sample ID: 380-58488-3 MS
Matrix: Drinking Water
Analysis Batch: 51813

Client Sample ID: HALAWA WELLS UNITS 1 & 2 (331-206-TP065)
Prep Type: Total/NA
Prep Batch: 51568

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	25.9		ng/L		103	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.3		23.2	28.3		ng/L		112	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.8		ng/L		103	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	26.1		ng/L		104	70 - 130

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-58488-1

GC/MS Semi VOA

Prep Batch: 51461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58488-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	
MB 380-51461/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-51461/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-51461/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-51461/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-58425-BE-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-58487-R-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 51571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58488-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	525.2	51461
MB 380-51461/21-A	Method Blank	Total/NA	Water	525.2	51461
LCS 380-51461/23-A	Lab Control Sample	Total/NA	Water	525.2	51461
LCSD 380-51461/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	51461
MRL 380-51461/22-A	Lab Control Sample	Total/NA	Water	525.2	51461
380-58425-BE-1-A MS	Matrix Spike	Total/NA	Water	525.2	51461
380-58487-R-1-A DU	Duplicate	Total/NA	Water	525.2	51461

LCMS

Prep Batch: 51568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58488-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP01)	Total/NA	Water	537.1 DW	
MBL 380-51568/19-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-51568/21-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-51568/22-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-51568/20-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-58488-3 MS	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	
380-58488-3 MSD	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 51813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58488-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	51568
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP01)	Total/NA	Water	537.1	51568
MBL 380-51568/19-A	Method Blank	Total/NA	Water	537.1	51568
LCS 380-51568/21-A	Lab Control Sample	Total/NA	Water	537.1	51568
LCSD 380-51568/22-A	Lab Control Sample Dup	Total/NA	Water	537.1	51568
MRL 380-51568/20-A	Lab Control Sample	Total/NA	Water	537.1	51568
380-58488-3 MS	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	51568
380-58488-3 MSD	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	537.1	51568

Prep Batch: 53518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58488-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP01)	Total/NA	Water	533	
MBL 380-53518/21-A	Method Blank	Total/NA	Water	533	
LCS 380-53518/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-53518/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-53518/22-A	Lab Control Sample	Total/NA	Water	533	
380-58343-B-3-B LMS	Matrix Spike	Total/NA	Water	533	

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-58488-1

LCMS (Continued)

Prep Batch: 53518 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58343-C-3-B LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 53732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MBL 380-53518/21-A	Method Blank	Total/NA	Water	533	53518
LCS 380-53518/23-A	Lab Control Sample	Total/NA	Water	533	53518
LCSD 380-53518/24-A	Lab Control Sample Dup	Total/NA	Water	533	53518
MRL 380-53518/22-A	Lab Control Sample	Total/NA	Water	533	53518
380-58343-B-3-B LMS	Matrix Spike	Total/NA	Water	533	53518
380-58343-C-3-B LMSD	Matrix Spike Duplicate	Total/NA	Water	533	53518

Analysis Batch: 53935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-58488-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Total/NA	Drinking Water	533	53518
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP01)	Total/NA	Water	533	53518

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Lab Chronicle

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

Job ID: 380-58488-1

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
 (331-206-TP065)**

Lab Sample ID: 380-58488-1

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			51461	N8NE	EA POM	08/11/23 15:16
Total/NA	Analysis	525.2		1	51571	Q8LA	EA POM	08/14/23 13:56

**Client Sample ID: HALAWA WELLS UNITS 1 & 2
 (331-206-TP065)**

Lab Sample ID: 380-58488-3

Date Collected: 08/08/23 10:00

Matrix: Drinking Water

Date Received: 08/10/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			53518	UMV1	EA POM	08/28/23 16:00
Total/NA	Analysis	533		1	53935	UKDT	EA POM	08/31/23 19:12
Total/NA	Prep	537.1 DW			51568	US1B	EA POM	08/14/23 06:59
Total/NA	Analysis	537.1		1	51813	UKDT	EA POM	08/15/23 13:55

**Client Sample ID: FB HALAWA WELLS UNITS 1 & 2
 (331-206-TP065)**

Lab Sample ID: 380-58488-4

Date Collected: 08/08/23 10:00

Matrix: Water

Date Received: 08/10/23 10:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			53518	UMV1	EA POM	08/28/23 16:00
Total/NA	Analysis	533		1	53935	UKDT	EA POM	08/31/23 19:22
Total/NA	Prep	537.1 DW			51568	US1B	EA POM	08/14/23 06:59
Total/NA	Analysis	537.1		1	51813	UKDT	EA POM	08/16/23 13:20

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: 380-58488-1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-58488-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-58488-1

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.			
<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-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	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)

Method Summary

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

Job ID: 380-58488-1

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: 380-58488-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-58488-1	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	08/08/23 10:00	08/10/23 10:20	HI0000331
380-58488-3	HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Drinking Water	08/08/23 10:00	08/10/23 10:20	
380-58488-4	FB HALAWA WELLS UNITS 1 & 2 (331-206-TP065)	Water	08/08/23 10:00	08/10/23 10:20	

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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



Client Information		Lab PM		Carrier Tracking No(s)		COC No	
Client Contact: Dr. Ron Fenstermacher		Arada, Rachelle		380-27941-2757 2		Page	
Company: City & County of Honolulu		E-Mail Rachelle.Arada@et.eurofins.com		State of Origin		Page 2 of 2	
Address 630 South Beretania Street, Chemistry Lab		PWSID		Job #		Preservation Codes:	
City: Honolulu		Due Date Requested:		Analysis Requested		M - Hexane	
State, Zip HI, 96843		TAT Requested (days):		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		A - HCL	
Phone 808-748-5091 (tel)		Compliance Project: Δ No		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		N - None	
Email rfenstermacher@hbws.org		PO # C20525101 exp 05312023		SUBCONTRACT - (MOD) 525plus PLUS TICs		O - AsHClO2	
Project Name RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		WO #		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		C - Zn Acetate	
Site		Project # 38001111		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		D - Nitric Acid	
		SSOW#		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		E - NH4SO4	
		Sample Date		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		F - MeOH	
		Sample Time		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		G - Amchlor	
		Sample Type (C=comp, G=grab)		SUBCONTRACT - 525plus PLUS TICs		H - Ascrobic Acid	
		Matrix (w=water, s=solid, o=waste/oil, BT=TISSUE, A=ALT)		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		I - Ice	
		Preservation Code:		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		J - DI Water	
		MOANALUA WELLS		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		K - EDTA	
		AIEA GULCH WELLS PUMP2		SUBCONTRACT - 525plus PLUS TICs		L - EDA	
		AIEA WELLS PUMPS 1&2 (260)		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		Other:	
		HALAWA WELLS UNITS 1&2		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		Total Number of Containers	
		FB MOANALUA WELLS		SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		Special Instructions/Note:	
		FB AIEA GULCH WELLS PUMP2		SUBCONTRACT - 525plus PLUS TICs		380-58488 COC	
		FB AIEA WELLS PUMPS 1&2 (260)		SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil		Pump 1	
		FB HALAWA WELLS UNITS 1&2		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		380-58488 COC	
				SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)			
				SUBCONTRACT - 525plus PLUS TICs			
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				SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs			
				SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)			
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				SUBCONTRACT - 525plus PLUS TICs			
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				SUBCONTRACT - 525plus PLUS TICs			
				SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil			
				SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs			
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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-58488-1

Login Number: 58488
List Number: 1
Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Containers recd broken. Sufficient sample in remaining containers for analysis.
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	

