

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-50374-1

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 will 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: 380-50374-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

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

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

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: 380-50374-1

Job ID: 380-50374-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-50374-1

Comments

Subcontract results will be provided on a separate report per client's request.

No additional comments.

Receipt

The samples were received on 6/7/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.2° C, 1.5° C, 2.3° C and 2.6° 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: 380-50374-1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-50374-1

No Detections.

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

Lab Sample ID: 380-50374-2

No Detections.

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

Lab Sample ID: 380-50374-3

No Detections.

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

Lab Sample ID: 380-50374-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.5		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.4		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L	1		537.1	Total/NA

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-50374-9

No Detections.

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-10

No Detections.

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

Lab Sample ID: 380-50374-11

No Detections.

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

Lab Sample ID: 380-50374-12

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-50374-1

Date Collected: 06/05/23 09:59

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
2,4'-DDD	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
2,4'-DDE	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
2,4'-DDT	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
2-Methylnaphthalene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
4,4'-DDD	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
4,4'-DDE	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
4,4'-DDT	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Acenaphthene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Acenaphthylene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Acetochlor	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Alachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
alpha-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
alpha-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Anthracene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:33	1
Atrazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Benz(a)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Benzo[a]pyrene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:33	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:33	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:33	1
beta-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 14:33	1
Bromacil	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Butachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Butylbenzylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 14:33	1
Chlorobenzilate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Chloroneb	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Chlorpyrifos	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Chrysene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:33	1
delta-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 14:33	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Dieldrin	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 14:33	1
Diethylphthalate	<0.49	^3+	0.49	ug/L		06/12/23 04:07	06/12/23 14:33	1
Dimethylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 14:33	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		06/12/23 04:07	06/12/23 14:33	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Endosulfan sulfate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Endrin	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Endrin aldehyde	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
EPTC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Fluoranthene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1

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Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-50374-1

Date Collected: 06/05/23 09:59

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
gamma-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Heptachlor	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 14:33	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Hexachlorobenzene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Isophorone	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 14:33	1
Lindane	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 14:33	1
Malathion	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Methoxychlor	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Metolachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Molinate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Naphthalene	<0.29		0.29	ug/L		06/12/23 04:07	06/12/23 14:33	1
Parathion	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Phenanthrene	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 14:33	1
Propachlor	<0.049	^3+	0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Simazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Terbacil	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Terbutylazine	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1
Thiobencarb	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 14:33	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 14:33	1
trans-Nonachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:33	1
Trifluralin	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 14:33	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	06/12/23 04:07	06/12/23 14:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	06/12/23 04:07	06/12/23 14:33	1
Perylene-d12	92		70 - 130	06/12/23 04:07	06/12/23 14:33	1
Triphenylphosphate	114		70 - 130	06/12/23 04:07	06/12/23 14:33	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-50374-1

Date Collected: 06/05/23 09:59

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 19:32	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	73		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C6 PFDA	92		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C5 PFHxA	79		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C4 PFHpA	81		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C8 PFOA	88		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C9 PFNA	84		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C7 PFUnA	88		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C2 PFDoA	93		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C4 PFBA	81		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C5 PFPeA	76		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C3 PFBS	94		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C3 PFHxS	94		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C8 PFOS	97		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C2-4:2-FTS	82		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C2-6:2-FTS	86		50 - 200			06/29/23 12:05	06/30/23 19:32	1
13C2-8:2-FTS	88		50 - 200			06/29/23 12:05	06/30/23 19:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: MOANALUA WELLS

Date Collected: 06/05/23 09:59

Date Received: 06/07/23 10:00

Lab Sample ID: 380-50374-1

Matrix: Drinking Water

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/15/23 09:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			06/12/23 07:36	06/15/23 09:14	1
13C2 PFHxA	119		70 - 130			06/12/23 07:36	06/15/23 09:14	1
13C2 PFDA	115		70 - 130			06/12/23 07:36	06/15/23 09:14	1
13C3-GenX	115		70 - 130			06/12/23 07:36	06/15/23 09:14	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 06/05/23 11:42

Date Received: 06/07/23 10:00

Lab Sample ID: 380-50374-2

Matrix: Drinking Water

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		06/12/23 04:07	06/12/23 14:52	1
2,4'-DDD	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
2,4'-DDE	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
2,4'-DDT	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
2-Methylnaphthalene	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
4,4'-DDD	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
4,4'-DDE	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
4,4'-DDT	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Acenaphthene	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Acenaphthylene	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Acetochlor	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Alachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
alpha-BHC	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
alpha-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Anthracene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:52	1
Atrazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Benz(a)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Benzo[a]pyrene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:52	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:52	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-2

Date Collected: 06/05/23 11:42

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:52	1
beta-BHC	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 14:52	1
Bromacil	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Butachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Butylbenzylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 14:52	1
Chlorobenzilate	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Chloroneb	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Chlorpyrifos	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Chrysene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 14:52	1
delta-BHC	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 14:52	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Dieldrin	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 14:52	1
Diethylphthalate	<0.49	^3+	0.49	ug/L		06/12/23 04:07	06/12/23 14:52	1
Dimethylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 14:52	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		06/12/23 04:07	06/12/23 14:52	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Endosulfan sulfate	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Endrin	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Endrin aldehyde	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
EPTC	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Fluoranthene	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Fluorene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
gamma-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Heptachlor	<0.040		0.040	ug/L		06/12/23 04:07	06/12/23 14:52	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Hexachlorobenzene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Isophorone	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 14:52	1
Lindane	<0.040		0.040	ug/L		06/12/23 04:07	06/12/23 14:52	1
Malathion	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Methoxychlor	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Metolachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Molinate	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Naphthalene	<0.30		0.30	ug/L		06/12/23 04:07	06/12/23 14:52	1
Parathion	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Phenanthrene	<0.040		0.040	ug/L		06/12/23 04:07	06/12/23 14:52	1
Propachlor	<0.049	^3+	0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Simazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Terbacil	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1
Terbutylazine	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-2

Date Collected: 06/05/23 11:42

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 14:52	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 14:52	1
trans-Nonachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 14:52	1
Trifluralin	<0.099		0.099	ug/L		06/12/23 04:07	06/12/23 14:52	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	06/12/23 04:07	06/12/23 14:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	06/12/23 04:07	06/12/23 14:52	1
Perylene-d12	85		70 - 130	06/12/23 04:07	06/12/23 14:52	1
Triphenylphosphate	111		70 - 130	06/12/23 04:07	06/12/23 14:52	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-2

Date Collected: 06/05/23 11:42

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 HFPO-DA	58		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C6 PFDA	88		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C5 PFHxA	66		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C4 PFHpA	68		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C8 PFOA	76		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C9 PFNA	79		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C7 PFUnA	86		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C2 PFDoA	93		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C4 PFBA	67		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C5 PFPeA	66		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C3 PFBS	91		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C3 PFHxS	88		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C8 PFOS	94		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C2-4:2-FTS	78		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C2-6:2-FTS	83		50 - 200	06/29/23 12:05	06/30/23 21:08	1
13C2-8:2-FTS	91		50 - 200	06/29/23 12:05	06/30/23 21:08	1

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

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:26	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
d5-NEtFOSAA	107		70 - 130	06/12/23 07:36	06/14/23 10:26	1
13C2 PFHxA	125		70 - 130	06/12/23 07:36	06/14/23 10:26	1
13C2 PFDA	109		70 - 130	06/12/23 07:36	06/14/23 10:26	1
13C3-GenX	113		70 - 130	06/12/23 07:36	06/14/23 10:26	1

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-3

Date Collected: 06/05/23 11:05

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
2,4'-DDD	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
2,4'-DDE	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
2,4'-DDT	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
2-Methylnaphthalene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
4,4'-DDD	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
4,4'-DDE	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
4,4'-DDT	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Acenaphthene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Acenaphthylene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Acetochlor	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Alachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
alpha-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
alpha-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Anthracene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:12	1
Atrazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Benz(a)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Benzo[a]pyrene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:12	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:12	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:12	1
beta-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 15:12	1
Bromacil	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Butachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Butylbenzylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 15:12	1
Chlorobenzilate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Chloroneb	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Chlorpyrifos	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Chrysene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:12	1
delta-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 15:12	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Dieldrin	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 15:12	1
Diethylphthalate	<0.49	^3+	0.49	ug/L		06/12/23 04:07	06/12/23 15:12	1
Dimethylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 15:12	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		06/12/23 04:07	06/12/23 15:12	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Endosulfan sulfate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Endrin	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Endrin aldehyde	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
EPTC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Fluoranthene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-3

Date Collected: 06/05/23 11:05

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
gamma-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Heptachlor	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 15:12	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Hexachlorobenzene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Isophorone	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 15:12	1
Lindane	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 15:12	1
Malathion	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Methoxychlor	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Metolachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Molinate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Naphthalene	<0.29		0.29	ug/L		06/12/23 04:07	06/12/23 15:12	1
Parathion	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Phenanthrene	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 15:12	1
Propachlor	<0.049	^3+	0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Simazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Terbacil	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Terbutylazine	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1
Thiobencarb	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 15:12	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 15:12	1
trans-Nonachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:12	1
Trifluralin	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:12	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.52	T J	ug/L		2.59	N/A	06/12/23 04:07	06/12/23 15:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	06/12/23 04:07	06/12/23 15:12	1
Perylene-d12	90		70 - 130	06/12/23 04:07	06/12/23 15:12	1
Triphenylphosphate	107		70 - 130	06/12/23 04:07	06/12/23 15:12	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-3

Date Collected: 06/05/23 11:05

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:18	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	64		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C6 PFDA	93		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C5 PFHxA	74		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C4 PFHpA	79		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C8 PFOA	83		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C9 PFNA	84		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C7 PFUnA	89		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C2 PFDoA	93		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C4 PFBA	77		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C5 PFPeA	69		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C3 PFBS	92		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C3 PFHxS	93		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C8 PFOS	95		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C2-4:2-FTS	84		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C2-6:2-FTS	86		50 - 200			06/29/23 12:05	06/30/23 21:18	1
13C2-8:2-FTS	86		50 - 200			06/29/23 12:05	06/30/23 21:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-3

Date Collected: 06/05/23 11:05

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 13:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	112		70 - 130			06/12/23 07:36	06/14/23 13:44	1
13C2 PFHxA	126		70 - 130			06/12/23 07:36	06/14/23 13:44	1
13C2 PFDA	115		70 - 130			06/12/23 07:36	06/14/23 13:44	1
13C3-GenX	117		70 - 130			06/12/23 07:36	06/14/23 13:44	1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

Date Collected: 06/05/23 10:33

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
2,4'-DDD	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
2,4'-DDE	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
2,4'-DDT	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
2-Methylnaphthalene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
4,4'-DDD	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
4,4'-DDE	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
4,4'-DDT	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Acenaphthene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Acenaphthylene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Acetochlor	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Alachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
alpha-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
alpha-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Anthracene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:32	1
Atrazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Benz(a)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Benzo[a]pyrene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:32	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:32	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

Date Collected: 06/05/23 10:33

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:32	1
beta-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 15:32	1
Bromacil	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Butachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Butylbenzylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 15:32	1
Chlorobenzilate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Chloroneb	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Chlorpyrifos	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Chrysene	<0.020		0.020	ug/L		06/12/23 04:07	06/12/23 15:32	1
delta-BHC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		06/12/23 04:07	06/12/23 15:32	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Dieldrin	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 15:32	1
Diethylphthalate	<0.49	^3+	0.49	ug/L		06/12/23 04:07	06/12/23 15:32	1
Dimethylphthalate	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 15:32	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		06/12/23 04:07	06/12/23 15:32	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Endosulfan sulfate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Endrin	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Endrin aldehyde	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
EPTC	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Fluoranthene	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Fluorene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
gamma-Chlordane	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Heptachlor	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 15:32	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Hexachlorobenzene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Isophorone	<0.49		0.49	ug/L		06/12/23 04:07	06/12/23 15:32	1
Lindane	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 15:32	1
Malathion	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Methoxychlor	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Metolachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Molinate	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Naphthalene	<0.29		0.29	ug/L		06/12/23 04:07	06/12/23 15:32	1
Parathion	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Phenanthrene	<0.039		0.039	ug/L		06/12/23 04:07	06/12/23 15:32	1
Propachlor	<0.049	^3+	0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Pyrene	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Simazine	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Terbacil	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1
Terbutylazine	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

Date Collected: 06/05/23 10:33

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Thiobencarb	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 15:32	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		06/12/23 04:07	06/12/23 15:32	1
trans-Nonachlor	<0.049		0.049	ug/L		06/12/23 04:07	06/12/23 15:32	1
Trifluralin	<0.098		0.098	ug/L		06/12/23 04:07	06/12/23 15:32	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	06/12/23 04:07	06/12/23 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	06/12/23 04:07	06/12/23 15:32	1
Perylene-d12	91		70 - 130	06/12/23 04:07	06/12/23 15:32	1
Triphenylphosphate	107		70 - 130	06/12/23 04:07	06/12/23 15:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorohexanesulfonic acid (PFHxS)	2.2		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorohexanoic acid (PFHxA)	2.6		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoropentanoic acid (PFPeA)	2.5		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

Date Collected: 06/05/23 10:33

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:38	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	68		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C6 PFDA	92		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C5 PFHxA	75		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C4 PFHpA	82		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C8 PFOA	83		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C9 PFNA	84		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C7 PFUnA	89		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C2 PFDoA	96		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C4 PFBA	85		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C5 PFPeA	81		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C3 PFBS	90		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C3 PFHxS	91		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C8 PFOS	92		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C2-4:2-FTS	88		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C2-6:2-FTS	93		50 - 200			06/29/23 12:05	06/30/23 21:38	1
13C2-8:2-FTS	121		50 - 200			06/29/23 12:05	06/30/23 21:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorooctanesulfonic acid (PFOS)	2.1		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorohexanoic acid (PFHxA)	2.4		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorooctanoic acid (PFOA)	2.2		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorohexanesulfonic acid (PFHxS)	2.8		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			06/12/23 07:36	06/14/23 10:46	1
13C2 PFHxA	123		70 - 130			06/12/23 07:36	06/14/23 10:46	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

Date Collected: 06/05/23 10:33

Matrix: Drinking Water

Date Received: 06/07/23 10:00

PWSID Number: HI0000331

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	110		70 - 130	06/12/23 07:36	06/14/23 10:46	1
13C3-GenX	111		70 - 130	06/12/23 07:36	06/14/23 10:46	1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-50374-9

Date Collected: 06/05/23 09:59

Matrix: Water

Date Received: 06/07/23 10:00

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		06/29/23 12:05	06/30/23 21:49	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:49	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
13C3 HFPO-DA	91		50 - 200	06/29/23 12:05	06/30/23 21:49	1		
13C6 PFDA	106		50 - 200	06/29/23 12:05	06/30/23 21:49	1		
13C5 PFHxA	100		50 - 200	06/29/23 12:05	06/30/23 21:49	1		
13C4 PFHpA	99		50 - 200	06/29/23 12:05	06/30/23 21:49	1		

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-50374-9

Date Collected: 06/05/23 09:59

Matrix: Water

Date Received: 06/07/23 10:00

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	101		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C9 PFNA	100		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C7 PFUnA	101		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C2 PFDoA	102		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C4 PFBA	103		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C5 PFPeA	102		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C3 PFBS	92		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C3 PFHxS	94		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C8 PFOS	99		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C2-4:2-FTS	85		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C2-6:2-FTS	89		50 - 200	06/29/23 12:05	06/30/23 21:49	1
13C2-8:2-FTS	93		50 - 200	06/29/23 12:05	06/30/23 21:49	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 10:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	117		70 - 130	06/12/23 07:36	06/14/23 10:55	1
13C2 PFHxA	120		70 - 130	06/12/23 07:36	06/14/23 10:55	1
13C2 PFDA	116		70 - 130	06/12/23 07:36	06/14/23 10:55	1
13C3-GenX	123		70 - 130	06/12/23 07:36	06/14/23 10:55	1

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-10

Date Collected: 06/05/23 11:42

Matrix: Water

Date Received: 06/07/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 21:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	90		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C6 PFDA	101		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C5 PFHxA	93		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C4 PFHpA	98		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C8 PFOA	98		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C9 PFNA	98		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C7 PFUnA	100		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C2 PFDoA	102		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C4 PFBA	102		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C5 PFPeA	97		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C3 PFBS	94		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C3 PFHxS	95		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C8 PFOS	100		50 - 200	06/29/23 12:05	06/30/23 21:59	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-10

Date Collected: 06/05/23 11:42

Matrix: Water

Date Received: 06/07/23 10:00

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	82		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C2-6:2-FTS	85		50 - 200	06/29/23 12:05	06/30/23 21:59	1
13C2-8:2-FTS	93		50 - 200	06/29/23 12:05	06/30/23 21:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:05	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
d5-NEtFOSAA	110		70 - 130	06/12/23 07:36	06/14/23 11:05	1		
13C2 PFHxA	127		70 - 130	06/12/23 07:36	06/14/23 11:05	1		
13C2 PFDA	115		70 - 130	06/12/23 07:36	06/14/23 11:05	1		
13C3-GenX	119		70 - 130	06/12/23 07:36	06/14/23 11:05	1		

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

Lab Sample ID: 380-50374-11

Date Collected: 06/05/23 11:05

Matrix: Water

Date Received: 06/07/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-11

Date Collected: 06/05/23 11:05

Matrix: Water

Date Received: 06/07/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	92		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C6 PFDA	102		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C5 PFHxA	99		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C4 PFHpA	99		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C8 PFOA	99		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C9 PFNA	99		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C7 PFUnA	98		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C2 PFDoA	100		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C4 PFBA	100		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C5 PFPeA	90		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C3 PFBS	94		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C3 PFHxS	91		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C8 PFOS	99		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C2-4:2-FTS	82		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C2-6:2-FTS	86		50 - 200	06/29/23 12:05	06/30/23 22:08	1
13C2-8:2-FTS	90		50 - 200	06/29/23 12:05	06/30/23 22:08	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-11

Date Collected: 06/05/23 11:05

Matrix: Water

Date Received: 06/07/23 10:00

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		06/12/23 07:36	06/14/23 11:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			06/12/23 07:36	06/14/23 11:14	1
13C2 PFHxA	127		70 - 130			06/12/23 07:36	06/14/23 11:14	1
13C2 PFDA	110		70 - 130			06/12/23 07:36	06/14/23 11:14	1
13C3-GenX	113		70 - 130			06/12/23 07:36	06/14/23 11:14	1

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

Lab Sample ID: 380-50374-12

Date Collected: 06/05/23 10:33

Matrix: Water

Date Received: 06/07/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-12

Date Collected: 06/05/23 10:33

Matrix: Water

Date Received: 06/07/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		06/29/23 12:05	06/30/23 22:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	88		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C6 PFDA	100		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C5 PFHxA	98		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C4 PFHpA	98		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C8 PFOA	97		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C9 PFNA	98		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C7 PFUnA	93		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C2 PFDoA	94		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C4 PFBA	101		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C5 PFPeA	97		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C3 PFBS	88		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C3 PFHxS	91		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C8 PFOS	96		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C2-4:2-FTS	81		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C2-6:2-FTS	85		50 - 200	06/29/23 12:05	06/30/23 22:18	1
13C2-8:2-FTS	89		50 - 200	06/29/23 12:05	06/30/23 22:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1

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Client Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-12

Date Collected: 06/05/23 10:33

Matrix: Water

Date Received: 06/07/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		06/12/23 07:36	06/14/23 11:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	115		70 - 130			06/12/23 07:36	06/14/23 11:35	1
13C2 PFHxA	128		70 - 130			06/12/23 07:36	06/14/23 11:35	1
13C2 PFDA	120		70 - 130			06/12/23 07:36	06/14/23 11:35	1
13C3-GenX	123		70 - 130			06/12/23 07:36	06/14/23 11:35	1

Action Limit Summary

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

Job ID: 380-50374-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-50374-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6		0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400		0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2		0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4		0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1		0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50		0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2		0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40		0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-2

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6		0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400		0.59	525.2	Total/NA
Endrin	<0.099		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)	<0.049		ug/L	0.2		0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1		0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50		0.049	525.2	Total/NA
Lindane	<0.040		ug/L	0.2		0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40		0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

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

Lab Sample ID: 380-50374-3

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-3

(Continued)

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.098		ug/L	2	0.098	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.039		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	<0.098		ug/L	40	0.098	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-50374-1

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)
380-50374-1	MOANALUA WELLS	97	92	114
380-50374-2	AIEA GULCH WELLS PUMP 2	98	85	111
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	99	90	107
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	97	91	107

Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-49858-V-1-A MS	Matrix Spike	97	90	113
380-49983-G-1-A DU	Duplicate	97	74	115
LCS 380-43649/23-A	Lab Control Sample	99	92	111
LCSD 380-43649/24-A	Lab Control Sample Dup	96	91	109
MB 380-43649/21-A	Method Blank	100	93	113
MRL 380-43649/22-A	Lab Control Sample	97	86	112

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)
380-50374-1	MOANALUA WELLS	109	119	115	115
380-50374-1 MS	MOANALUA WELLS	87	104	93	99
380-50374-1 MSD	MOANALUA WELLS	108	131 S1+	113	129
380-50374-2	AIEA GULCH WELLS PUMP 2	107	125	109	113
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	112	126	115	117
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	109	123	110	111

Surrogate Legend

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

Surrogate Summary

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

Job ID: 380-50374-1

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)
380-50374-9	FB MOANALUA WELLS	117	120	116	123
380-50374-10	FB AIEA GULCH WELLS PUMP 2	110	127	115	119
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	109	127	110	113
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	115	128	120	123
LCS 380-43696/25-A	Lab Control Sample	103	128	111	125
LCSD 380-43696/26-A	Lab Control Sample Dup	107	118	114	125
MBL 380-43696/23-A	Method Blank	102	120	105	116
MRL 380-43696/24-A	Lab Control Sample	91	112	98	107

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: 380-50374-1

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)
380-50374-1	MOANALUA WELLS	73	92	79	81	88	84	88	93
380-50374-1 MS	MOANALUA WELLS	74	93	81	84	86	86	93	93
380-50374-1 MSD	MOANALUA WELLS	78	94	83	88	90	89	93	95
380-50374-2	AIEA GULCH WELLS PUMP 2	58	88	66	68	76	79	86	93
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	64	93	74	79	83	84	89	93
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	68	92	75	82	83	84	89	96

		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)
380-50374-1	MOANALUA WELLS	81	76	94	94	97	82	86	88
380-50374-1 MS	MOANALUA WELLS	79	74	94	92	96	82	84	91
380-50374-1 MSD	MOANALUA WELLS	86	81	92	93	96	80	88	90
380-50374-2	AIEA GULCH WELLS PUMP 2	67	66	91	88	94	78	83	91
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	77	69	92	93	95	84	86	86
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	85	81	90	91	92	88	93	121

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)
380-50374-9	FB MOANALUA WELLS	91	106	100	99	101	100	101	102
380-50374-10	FB AIEA GULCH WELLS PUMP 2	90	101	93	98	98	98	100	102
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	92	102	99	99	99	99	98	100
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	88	100	98	98	97	98	93	94
LCS 380-45815/24-A	Lab Control Sample	95	100	100	100	100	97	97	100

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Isotope Dilution Summary

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

Job ID: 380-50374-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
LCSD 380-45815/25-A	Lab Control Sample Dup	95	101	102	99	98	99	99	99
MBL 380-45815/22-A	Method Blank	87	99	97	99	101	96	99	101
MRL 380-45815/23-A	Lab Control Sample	89	97	97	94	95	95	90	91

		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)
380-50374-9	FB MOANALUA WELLS	103	102	92	94	99	85	89	93
380-50374-10	FB AIEA GULCH WELLS PUMP 2	102	97	94	95	100	82	85	93
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	100	90	94	91	99	82	86	90
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	101	97	88	91	96	81	85	89
LCS 380-45815/24-A	Lab Control Sample	102	98	91	93	99	80	85	84
LCSD 380-45815/25-A	Lab Control Sample Dup	105	99	84	93	98	82	87	85
MBL 380-45815/22-A	Method Blank	105	98	94	94	99	81	88	94
MRL 380-45815/23-A	Lab Control Sample	100	95	88	90	93	79	80	86

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MB 380-43649/21-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43649

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
2,4'-DDD	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
2,4'-DDE	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
2,4'-DDT	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
2-Methylnaphthalene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
4,4'-DDD	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
4,4'-DDE	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
4,4'-DDT	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Acenaphthene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Acenaphthylene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Acetochlor	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Alachlor	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
alpha-BHC	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
alpha-Chlordane	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Anthracene	<0.020		0.020	ug/L		06/11/23 23:59	06/12/23 14:13	1
Atrazine	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Benz(a)anthracene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Benzo[a]pyrene	<0.020		0.020	ug/L		06/11/23 23:59	06/12/23 14:13	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		06/11/23 23:59	06/12/23 14:13	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		06/11/23 23:59	06/12/23 14:13	1
beta-BHC	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		06/11/23 23:59	06/12/23 14:13	1
Bromacil	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Butachlor	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Butylbenzylphthalate	<0.49		0.49	ug/L		06/11/23 23:59	06/12/23 14:13	1
Chlorobenzilate	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Chloroneb	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Chlorpyrifos	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Chrysene	<0.020		0.020	ug/L		06/11/23 23:59	06/12/23 14:13	1
delta-BHC	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		06/11/23 23:59	06/12/23 14:13	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Dieldrin	<0.20		0.20	ug/L		06/11/23 23:59	06/12/23 14:13	1
Diethylphthalate	<0.49		0.49	ug/L		06/11/23 23:59	06/12/23 14:13	1
Dimethylphthalate	<0.49		0.49	ug/L		06/11/23 23:59	06/12/23 14:13	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		06/11/23 23:59	06/12/23 14:13	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Endosulfan sulfate	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Endrin	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Endrin aldehyde	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
EPTC	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MB 380-43649/21-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43649

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Fluorene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
gamma-Chlordane	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Heptachlor	<0.039		0.039	ug/L		06/11/23 23:59	06/12/23 14:13	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Hexachlorobenzene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Isophorone	<0.49		0.49	ug/L		06/11/23 23:59	06/12/23 14:13	1
Lindane	<0.039		0.039	ug/L		06/11/23 23:59	06/12/23 14:13	1
Malathion	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Methoxychlor	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Metolachlor	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Molinate	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Naphthalene	<0.29		0.29	ug/L		06/11/23 23:59	06/12/23 14:13	1
Parathion	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Phenanthrene	<0.039		0.039	ug/L		06/11/23 23:59	06/12/23 14:13	1
Propachlor	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Pyrene	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Simazine	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Terbacil	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Terbutylazine	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1
Thiobencarb	<0.20		0.20	ug/L		06/11/23 23:59	06/12/23 14:13	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		06/11/23 23:59	06/12/23 14:13	1
trans-Nonachlor	<0.049		0.049	ug/L		06/11/23 23:59	06/12/23 14:13	1
Trifluralin	<0.098		0.098	ug/L		06/11/23 23:59	06/12/23 14:13	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane	1.54	T J N	ug/L		2.35	124-18-5	06/11/23 23:59	06/12/23 14:13	1
Decane, 5-methyl-	0.499	T J N	ug/L		2.51	13151-35-4	06/11/23 23:59	06/12/23 14:13	1
Cyclopentasiloxane, decamethyl-	0.580	T J N	ug/L		2.64	541-02-6	06/11/23 23:59	06/12/23 14:13	1
5,6-Epoxyhexanol-1	1.11	T J N	ug/L		3.29	21915-57-1	06/11/23 23:59	06/12/23 14:13	1
Phenol, 4-(1,1-dimethylpropyl)-	0.927	T J N	ug/L		3.78	80-46-6	06/11/23 23:59	06/12/23 14:13	1
n-Hexadecanoic acid	1.32	T J N	ug/L		5.73	57-10-3	06/11/23 23:59	06/12/23 14:13	1
9-Octadecenoic acid, (E)-	0.653	T J N	ug/L		6.32	112-79-8	06/11/23 23:59	06/12/23 14:13	1
Octadecanoic acid	1.00	T J N	ug/L		6.39	57-11-4	06/11/23 23:59	06/12/23 14:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	100		70 - 130	06/11/23 23:59	06/12/23 14:13	1
Perylene-d12	93		70 - 130	06/11/23 23:59	06/12/23 14:13	1
Triphenylphosphate	113		70 - 130	06/11/23 23:59	06/12/23 14:13	1

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCS 380-43649/23-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.96	2.05		ug/L		104	70 - 130
2,4'-DDD	1.96	1.98		ug/L		101	70 - 130
2,4'-DDE	1.96	1.94		ug/L		99	70 - 130
2,4'-DDT	1.96	2.19		ug/L		112	70 - 130
2,4-Dinitrotoluene	1.96	2.08		ug/L		106	70 - 130
2,6-Dinitrotoluene	1.96	2.07		ug/L		106	70 - 130
2-Methylnaphthalene	1.96	2.08		ug/L		106	70 - 130
4,4'-DDD	1.96	2.20		ug/L		112	70 - 130
4,4'-DDE	1.96	2.06		ug/L		105	70 - 130
4,4'-DDT	1.96	2.12		ug/L		108	70 - 130
Acenaphthene	1.96	1.96		ug/L		100	70 - 130
Acenaphthylene	1.96	2.00		ug/L		102	70 - 130
Acetochlor	1.96	1.75		ug/L		89	70 - 130
Alachlor	1.96	1.93		ug/L		98	70 - 130
alpha-BHC	1.96	1.98		ug/L		101	70 - 130
alpha-Chlordane	1.96	2.09		ug/L		107	70 - 130
Anthracene	1.96	1.98		ug/L		101	70 - 130
Atrazine	1.96	2.34		ug/L		119	70 - 130
Benz(a)anthracene	1.96	2.18		ug/L		111	70 - 130
Benzo[a]pyrene	1.96	2.30		ug/L		118	70 - 130
Benzo[b]fluoranthene	1.96	2.35		ug/L		120	70 - 130
Benzo[g,h,i]perylene	1.96	1.93		ug/L		99	70 - 130
Benzo[k]fluoranthene	1.96	2.40		ug/L		122	70 - 130
beta-BHC	1.96	1.97		ug/L		101	70 - 130
Bis(2-ethylhexyl) phthalate	1.96	1.92		ug/L		98	70 - 130
Bromacil	1.96	2.07		ug/L		105	70 - 130
Butachlor	1.96	2.16		ug/L		110	70 - 130
Butylbenzylphthalate	1.96	2.20		ug/L		112	70 - 130
Chlorobenzilate	1.96	1.96		ug/L		100	70 - 130
Chloroneb	1.96	2.11		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	1.96	1.87		ug/L		95	70 - 130
Chlorpyrifos	1.96	2.10		ug/L		107	70 - 130
Chrysene	1.96	2.05		ug/L		104	70 - 130
delta-BHC	1.96	1.78		ug/L		91	70 - 130
Di(2-ethylhexyl)adipate	1.96	2.03		ug/L		103	70 - 130
Dibenz(a,h)anthracene	1.96	2.26		ug/L		115	70 - 130
Diclorvos (DDVP)	1.96	1.80		ug/L		92	70 - 130
Dieldrin	1.96	1.95		ug/L		100	70 - 130
Diethylphthalate	1.96	2.16		ug/L		110	70 - 130
Dimethylphthalate	1.96	2.15		ug/L		110	70 - 130
Di-n-butyl phthalate	3.92	4.02		ug/L		102	70 - 130
Di-n-octyl phthalate	1.96	1.80		ug/L		92	70 - 130
Endosulfan I (Alpha)	1.96	1.78		ug/L		91	70 - 130
Endosulfan II (Beta)	1.96	2.01		ug/L		103	70 - 130
Endosulfan sulfate	1.96	2.19		ug/L		112	70 - 130
Endrin	1.96	2.15		ug/L		110	70 - 130
Endrin aldehyde	1.96	1.80		ug/L		92	70 - 130
EPTC	1.96	2.19		ug/L		112	70 - 130

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCS 380-43649/23-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	1.96	2.04		ug/L		104	70 - 130
Fluorene	1.96	2.07		ug/L		106	70 - 130
gamma-Chlordane	1.96	2.06		ug/L		105	70 - 130
Heptachlor	1.96	2.05		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	1.96	2.09		ug/L		106	70 - 130
Hexachlorobenzene	1.96	2.16		ug/L		110	70 - 130
Hexachlorocyclopentadiene	1.96	2.20		ug/L		112	70 - 130
Indeno[1,2,3-cd]pyrene	1.96	2.22		ug/L		113	70 - 130
Isophorone	1.96	1.93		ug/L		99	70 - 130
Lindane	1.96	1.96		ug/L		100	70 - 130
Malathion	1.96	1.91		ug/L		97	70 - 130
Methoxychlor	1.96	2.23		ug/L		114	70 - 130
Metolachlor	1.96	2.03		ug/L		103	70 - 130
Molinate	1.96	2.26		ug/L		115	70 - 130
Naphthalene	1.96	2.08		ug/L		106	70 - 130
Parathion	1.96	2.12		ug/L		108	70 - 130
Pendimethalin (Penoxaline)	1.96	1.97		ug/L		101	70 - 130
Phenanthrene	1.96	1.91		ug/L		98	70 - 130
Propachlor	1.96	2.03		ug/L		104	70 - 130
Pyrene	1.96	2.10		ug/L		107	70 - 130
Simazine	1.96	2.39		ug/L		122	70 - 130
Terbacil	1.96	2.30		ug/L		117	70 - 130
Terbutylazine	1.96	2.33		ug/L		119	70 - 130
Thiobencarb	1.96	1.94		ug/L		99	70 - 130
trans-Nonachlor	1.96	2.26		ug/L		115	70 - 130
Trifluralin	1.96	1.93		ug/L		99	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	92		70 - 130
Triphenylphosphate	111		70 - 130

Lab Sample ID: LCSD 380-43649/24-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.96	2.01		ug/L		103	70 - 130	2	20
2,4'-DDD	1.96	2.04		ug/L		104	70 - 130	3	20
2,4'-DDE	1.96	1.99		ug/L		101	70 - 130	3	20
2,4'-DDT	1.96	2.22		ug/L		113	70 - 130	1	20
2,4-Dinitrotoluene	1.96	2.00		ug/L		102	70 - 130	4	20
2,6-Dinitrotoluene	1.96	1.99		ug/L		101	70 - 130	4	20
2-Methylnaphthalene	1.96	2.06		ug/L		105	70 - 130	1	20
4,4'-DDD	1.96	2.19		ug/L		111	70 - 130	1	20
4,4'-DDE	1.96	2.08		ug/L		106	70 - 130	1	20
4,4'-DDT	1.96	2.12		ug/L		108	70 - 130	0	20
Acenaphthene	1.96	1.88		ug/L		96	70 - 130	4	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCSD 380-43649/24-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Acenaphthylene	1.96	1.87		ug/L		95	70 - 130	7	20	
Acetochlor	1.96	1.76		ug/L		90	70 - 130	1	20	
Alachlor	1.96	1.94		ug/L		99	70 - 130	0	20	
alpha-BHC	1.96	1.97		ug/L		100	70 - 130	1	20	
alpha-Chlordane	1.96	2.09		ug/L		107	70 - 130	0	20	
Anthracene	1.96	1.97		ug/L		101	70 - 130	0	20	
Atrazine	1.96	2.24		ug/L		114	70 - 130	4	20	
Benz(a)anthracene	1.96	2.15		ug/L		110	70 - 130	1	20	
Benzo[a]pyrene	1.96	2.24		ug/L		114	70 - 130	3	20	
Benzo[b]fluoranthene	1.96	2.28		ug/L		116	70 - 130	3	20	
Benzo[g,h,i]perylene	1.96	1.86		ug/L		95	70 - 130	4	20	
Benzo[k]fluoranthene	1.96	2.33		ug/L		119	70 - 130	3	20	
beta-BHC	1.96	1.89		ug/L		96	70 - 130	4	20	
Bis(2-ethylhexyl) phthalate	1.96	1.91		ug/L		97	70 - 130	1	20	
Bromacil	1.96	2.06		ug/L		105	70 - 130	0	20	
Butachlor	1.96	2.20		ug/L		112	70 - 130	1	20	
Butylbenzylphthalate	1.96	2.22		ug/L		113	70 - 130	1	20	
Chlorobenzilate	1.96	2.02		ug/L		103	70 - 130	3	20	
Chloroneb	1.96	2.05		ug/L		104	70 - 130	3	20	
Chlorothalonil (Draconil, Bravo)	1.96	1.83		ug/L		93	70 - 130	2	20	
Chlorpyrifos	1.96	2.11		ug/L		108	70 - 130	1	20	
Chrysene	1.96	1.99		ug/L		102	70 - 130	3	20	
delta-BHC	1.96	1.78		ug/L		91	70 - 130	0	20	
Di(2-ethylhexyl)adipate	1.96	2.04		ug/L		104	70 - 130	0	20	
Dibenz(a,h)anthracene	1.96	2.22		ug/L		113	70 - 130	1	20	
Diclorvos (DDVP)	1.96	1.68		ug/L		86	70 - 130	7	20	
Dieldrin	1.96	2.00		ug/L		102	70 - 130	2	20	
Diethylphthalate	1.96	2.09		ug/L		107	70 - 130	3	20	
Dimethylphthalate	1.96	2.06		ug/L		105	70 - 130	4	20	
Di-n-butyl phthalate	3.92	4.01		ug/L		102	70 - 130	0	20	
Di-n-octyl phthalate	1.96	1.74		ug/L		89	70 - 130	3	20	
Endosulfan I (Alpha)	1.96	1.81		ug/L		92	70 - 130	2	20	
Endosulfan II (Beta)	1.96	2.05		ug/L		105	70 - 130	2	20	
Endosulfan sulfate	1.96	2.14		ug/L		109	70 - 130	2	20	
Endrin	1.96	2.13		ug/L		109	70 - 130	1	20	
Endrin aldehyde	1.96	1.80		ug/L		92	70 - 130	0	20	
EPTC	1.96	2.15		ug/L		109	70 - 130	2	20	
Fluoranthene	1.96	2.04		ug/L		104	70 - 130	0	20	
Fluorene	1.96	2.02		ug/L		103	70 - 130	2	20	
gamma-Chlordane	1.96	2.15		ug/L		110	70 - 130	4	20	
Heptachlor	1.96	2.07		ug/L		106	70 - 130	1	20	
Heptachlor epoxide (isomer B)	1.96	2.13		ug/L		109	70 - 130	2	20	
Hexachlorobenzene	1.96	2.11		ug/L		107	70 - 130	3	20	
Hexachlorocyclopentadiene	1.96	2.11		ug/L		107	70 - 130	4	20	
Indeno[1,2,3-cd]pyrene	1.96	2.10		ug/L		107	70 - 130	6	20	
Isophorone	1.96	1.90		ug/L		97	70 - 130	2	20	
Lindane	1.96	1.93		ug/L		98	70 - 130	2	20	
Malathion	1.96	1.94		ug/L		99	70 - 130	2	20	
Methoxychlor	1.96	2.18		ug/L		111	70 - 130	2	20	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCSD 380-43649/24-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Metolachlor	1.96	2.08		ug/L		106	70 - 130	3	20
Molinate	1.96	2.16		ug/L		110	70 - 130	4	20
Naphthalene	1.96	2.00		ug/L		102	70 - 130	4	20
Parathion	1.96	2.18		ug/L		111	70 - 130	3	20
Pendimethalin (Penoxaline)	1.96	1.94		ug/L		99	70 - 130	2	20
Phenanthrene	1.96	1.96		ug/L		100	70 - 130	2	20
Propachlor	1.96	1.93		ug/L		99	70 - 130	5	20
Pyrene	1.96	2.10		ug/L		107	70 - 130	0	20
Simazine	1.96	2.21		ug/L		113	70 - 130	8	20
Terbacil	1.96	2.29		ug/L		117	70 - 130	0	20
Terbutylazine	1.96	2.26		ug/L		115	70 - 130	3	20
Thiobencarb	1.96	1.94		ug/L		99	70 - 130	0	20
trans-Nonachlor	1.96	2.30		ug/L		117	70 - 130	2	20
Trifluralin	1.96	1.85		ug/L		94	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	96		70 - 130
Perylene-d12	91		70 - 130
Triphenylphosphate	109		70 - 130

Lab Sample ID: MRL 380-43649/22-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0976	0.119		ug/L		122	50 - 150
2,4'-DDD	0.0976	0.126		ug/L		129	50 - 150
2,4'-DDE	0.0976	0.109		ug/L		111	50 - 150
2,4'-DDT	0.0976	0.0988		ug/L		101	50 - 150
2,4-Dinitrotoluene	0.0976	0.0825	J	ug/L		85	50 - 150
2,6-Dinitrotoluene	0.0976	0.0898	J	ug/L		92	50 - 150
2-Methylnaphthalene	0.0976	0.118		ug/L		121	50 - 150
4,4'-DDD	0.0976	0.109		ug/L		111	50 - 150
4,4'-DDE	0.0976	0.0928	J	ug/L		95	50 - 150
4,4'-DDT	0.0976	0.135		ug/L		138	50 - 150
Acenaphthene	0.0976	0.105		ug/L		108	50 - 150
Acenaphthylene	0.0976	0.0960	J	ug/L		98	50 - 150
Acetochlor	0.0488	0.0472	J	ug/L		97	50 - 150
Alachlor	0.0488	0.0496		ug/L		102	50 - 150
alpha-BHC	0.0976	0.103		ug/L		106	50 - 150
alpha-Chlordane	0.0244	<0.028		ug/L		92	50 - 150
Anthracene	0.0195	0.0210		ug/L		107	50 - 150
Atrazine	0.0488	0.0549		ug/L		112	50 - 150
Benz(a)anthracene	0.0488	0.0545		ug/L		112	50 - 150
Benzo[a]pyrene	0.0195	0.0204		ug/L		105	50 - 150
Benzo[b]fluoranthene	0.0195	0.0227		ug/L		116	50 - 150
Benzo[g,h,i]perylene	0.0488	0.0641		ug/L		131	50 - 150
Benzo[k]fluoranthene	0.0195	0.0215		ug/L		110	50 - 150

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MRL 380-43649/22-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
beta-BHC	0.0976	0.101		ug/L		104	50 - 150
Bis(2-ethylhexyl) phthalate	0.586	0.671		ug/L		115	50 - 150
Bromacil	0.0976	0.140		ug/L		144	50 - 150
Butachlor	0.0488	0.0562		ug/L		115	50 - 150
Butylbenzylphthalate	0.146	0.178	J	ug/L		122	50 - 150
Chlorobenzilate	0.0976	0.116		ug/L		119	50 - 150
Chloroneb	0.0976	0.122		ug/L		125	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0976	0.118		ug/L		121	50 - 150
Chlorpyrifos	0.0488	0.0557		ug/L		114	50 - 150
Chrysene	0.0195	0.0210		ug/L		108	50 - 150
delta-BHC	0.0976	0.0989		ug/L		101	50 - 150
Di(2-ethylhexyl)adipate	0.293	0.365	J	ug/L		125	50 - 150
Dibenz(a,h)anthracene	0.0488	0.0707		ug/L		145	50 - 150
Diclorvos (DDVP)	0.0488	0.0560		ug/L		115	50 - 150
Dieldrin	0.0976	0.100	J	ug/L		103	50 - 150
Diethylphthalate	0.146	0.229	J ^3+	ug/L		157	50 - 150
Dimethylphthalate	0.293	0.319	J	ug/L		109	50 - 150
Di-n-butyl phthalate	0.293	0.388	J	ug/L		132	49 - 243
Di-n-octyl phthalate	0.0976	0.119		ug/L		122	50 - 150
Endosulfan I (Alpha)	0.0976	0.0971	J	ug/L		99	50 - 150
Endosulfan II (Beta)	0.0976	0.138		ug/L		141	50 - 150
Endosulfan sulfate	0.0976	0.107		ug/L		110	50 - 150
Endrin	0.0976	0.130		ug/L		134	50 - 150
Endrin aldehyde	0.0976	<0.082		ug/L		82	50 - 150
EPTC	0.0976	0.105		ug/L		108	50 - 150
Fluoranthene	0.0488	0.0548	J	ug/L		112	50 - 150
Fluorene	0.0488	0.0541		ug/L		111	50 - 150
gamma-Chlordane	0.0244	0.0252	J	ug/L		103	50 - 150
Heptachlor	0.0390	0.0425		ug/L		109	50 - 150
Heptachlor epoxide (isomer B)	0.0488	0.0459	J	ug/L		94	50 - 150
Hexachlorobenzene	0.0488	0.0513		ug/L		105	50 - 150
Hexachlorocyclopentadiene	0.0488	0.0465	J	ug/L		95	50 - 150
Indeno[1,2,3-cd]pyrene	0.0488	0.0691		ug/L		142	50 - 150
Isophorone	0.0976	0.105	J	ug/L		107	50 - 150
Lindane	0.0390	0.0433		ug/L		111	50 - 150
Malathion	0.0976	0.119		ug/L		122	50 - 150
Methoxychlor	0.0976	0.111		ug/L		114	50 - 150
Metolachlor	0.0488	0.0575		ug/L		118	50 - 150
Molinate	0.0976	0.114		ug/L		117	50 - 150
Naphthalene	0.0976	0.114	J	ug/L		117	50 - 150
Parathion	0.0976	0.126		ug/L		129	50 - 150
Pendimethalin (Penoxaline)	0.0976	0.114		ug/L		117	50 - 150
Phenanthrene	0.0195	0.0254	J	ug/L		130	50 - 150
Propachlor	0.0488	0.0796	^3+	ug/L		163	50 - 150
Pyrene	0.0488	0.0548		ug/L		112	50 - 150
Simazine	0.0488	0.0592		ug/L		121	50 - 150
Terbacil	0.0976	0.111		ug/L		113	50 - 150
Terbutylazine	0.0976	0.114		ug/L		117	50 - 150
Thiobencarb	0.0976	0.117	J	ug/L		120	50 - 150

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MRL 380-43649/22-A
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
trans-Nonachlor	0.0244	<0.025		ug/L		101	50 - 150
Trifluralin	0.0976	0.116		ug/L		119	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
2-Nitro-m-xylene	97		70 - 130				
Perylene-d12	86		70 - 130				
Triphenylphosphate	112		70 - 130				

Lab Sample ID: 380-49858-V-1-A MS
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.96	2.03		ug/L		104	70 - 130
2,4'-DDD	<0.098		1.96	2.07		ug/L		106	70 - 130
2,4'-DDE	<0.098		1.96	1.95		ug/L		99	70 - 130
2,4'-DDT	<0.098		1.96	2.21		ug/L		113	70 - 130
2,4-Dinitrotoluene	<0.098		1.96	2.22		ug/L		114	70 - 130
2,6-Dinitrotoluene	<0.098		1.96	2.19		ug/L		112	70 - 130
2-Methylnaphthalene	<0.098		1.96	2.08		ug/L		107	70 - 130
4,4'-DDD	<0.098		1.96	2.20		ug/L		113	70 - 130
4,4'-DDE	<0.098		1.96	2.08		ug/L		106	70 - 130
4,4'-DDT	<0.098		1.96	2.13		ug/L		109	70 - 130
Acenaphthene	<0.098		1.96	1.92		ug/L		98	70 - 130
Acenaphthylene	<0.098		1.96	1.95		ug/L		100	70 - 130
Acetochlor	<0.098		1.96	1.78		ug/L		91	70 - 130
Alachlor	<0.049		1.96	1.94		ug/L		99	70 - 130
alpha-BHC	<0.098		1.96	2.01		ug/L		103	70 - 130
alpha-Chlordane	<0.049		1.96	2.20		ug/L		112	70 - 130
Anthracene	<0.020	F1	1.96	1.03	F1	ug/L		53	70 - 130
Atrazine	<0.049		1.96	2.43		ug/L		124	70 - 130
Benz(a)anthracene	<0.049		1.96	2.00		ug/L		102	70 - 130
Benzo[a]pyrene	<0.020		1.96	1.56		ug/L		80	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.27		ug/L		116	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	1.83		ug/L		94	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.33		ug/L		119	70 - 130
beta-BHC	<0.098		1.96	2.00		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.84		ug/L		94	70 - 130
Bromacil	<0.098		1.96	2.19		ug/L		112	70 - 130
Butachlor	<0.049		1.96	2.21		ug/L		113	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.25		ug/L		115	70 - 130
Chlorobenzilate	<0.098		1.96	2.06		ug/L		105	70 - 130
Chloroneb	<0.098		1.96	2.11		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.96	1.89		ug/L		97	70 - 130
Chlorpyrifos	<0.049		1.96	2.11		ug/L		108	70 - 130
Chrysene	<0.020		1.96	2.05		ug/L		105	70 - 130
delta-BHC	<0.098		1.96	1.75		ug/L		90	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.96	2.02		ug/L		100	70 - 130

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-49858-V-1-A MS
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Dibenz(a,h)anthracene	<0.049		1.96	2.14		ug/L		109	70 - 130
Diclorvos (DDVP)	<0.049		1.96	1.78		ug/L		91	70 - 130
Dieldrin	<0.20		1.96	2.00		ug/L		102	70 - 130
Diethylphthalate	<0.49	^3+	1.96	2.12		ug/L		103	70 - 130
Dimethylphthalate	<0.49		1.96	2.15		ug/L		110	70 - 130
Di-n-butyl phthalate	<0.98		3.91	3.95		ug/L		101	70 - 130
Di-n-octyl phthalate	<0.098		1.96	1.68		ug/L		86	70 - 130
Endosulfan I (Alpha)	<0.098		1.96	1.81		ug/L		93	70 - 130
Endosulfan II (Beta)	<0.098		1.96	2.08		ug/L		106	70 - 130
Endosulfan sulfate	<0.098		1.96	2.23		ug/L		114	70 - 130
Endrin	<0.098		1.96	2.02		ug/L		103	70 - 130
Endrin aldehyde	<0.098		1.96	1.66		ug/L		85	70 - 130
EPTC	<0.098		1.96	2.21		ug/L		113	70 - 130
Fluoranthene	<0.098		1.96	2.10		ug/L		107	70 - 130
Fluorene	<0.049		1.96	2.07		ug/L		106	70 - 130
gamma-Chlordane	<0.049		1.96	2.12		ug/L		109	70 - 130
Heptachlor	<0.039		1.96	2.05		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.96	2.13		ug/L		109	70 - 130
Hexachlorobenzene	<0.049		1.96	2.12		ug/L		108	70 - 130
Hexachlorocyclopentadiene	<0.049		1.96	2.12		ug/L		109	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.96	2.10		ug/L		107	70 - 130
Isophorone	<0.49		1.96	1.91		ug/L		98	70 - 130
Lindane	<0.039		1.96	1.96		ug/L		100	70 - 130
Malathion	<0.098		1.96	1.98		ug/L		101	70 - 130
Methoxychlor	<0.098		1.96	2.27		ug/L		116	70 - 130
Metolachlor	<0.049		1.96	2.10		ug/L		107	70 - 130
Molinate	<0.098		1.96	2.25		ug/L		115	70 - 130
Naphthalene	<0.29		1.96	1.99		ug/L		102	70 - 130
Parathion	<0.098		1.96	2.21		ug/L		113	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.96	2.08		ug/L		106	70 - 130
Phenanthrene	<0.039		1.96	1.95		ug/L		100	70 - 130
Propachlor	<0.049	^3+	1.96	2.02		ug/L		103	70 - 130
Pyrene	<0.049		1.96	2.10		ug/L		107	70 - 130
Simazine	0.11		1.96	2.53		ug/L		124	70 - 130
Terbacil	<0.098		1.96	2.40		ug/L		122	70 - 130
Terbutylazine	<0.098		1.96	2.36		ug/L		121	70 - 130
Thiobencarb	<0.20		1.96	1.95		ug/L		100	70 - 130
trans-Nonachlor	<0.049		1.96	2.31		ug/L		118	70 - 130
Trifluralin	<0.098		1.96	1.94		ug/L		99	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	90		70 - 130
Triphenylphosphate	113		70 - 130

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-49983-G-1-A DU
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Sample	Sample Qualifier	DU	DU	Unit	D	RPD	Limit
	Result		Result	Qualifier				
1-Methylnaphthalene	<0.098		<0.099		ug/L		NC	20
2,4'-DDD	<0.098		<0.099		ug/L		NC	20
2,4'-DDE	<0.098		<0.099		ug/L		NC	20
2,4'-DDT	<0.098		<0.099		ug/L		NC	20
2,4-Dinitrotoluene	<0.098		<0.099		ug/L		NC	20
2,6-Dinitrotoluene	<0.098		<0.099		ug/L		NC	20
2-Methylnaphthalene	<0.098		<0.099		ug/L		NC	20
4,4'-DDD	<0.098		<0.099		ug/L		NC	20
4,4'-DDE	<0.098		<0.099		ug/L		NC	20
4,4'-DDT	<0.098		<0.099		ug/L		NC	20
Acenaphthene	<0.098		<0.099		ug/L		NC	20
Acenaphthylene	<0.098		<0.099		ug/L		NC	20
Acetochlor	<0.098		<0.099		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.098		<0.099		ug/L		NC	20
alpha-Chlordane	<0.049		<0.049		ug/L		NC	20
Anthracene	<0.020		<0.020		ug/L		NC	20
Atrazine	<0.049		<0.049		ug/L		NC	20
Benz(a)anthracene	<0.049		<0.049		ug/L		NC	20
Benzo[a]pyrene	<0.020		<0.020		ug/L		NC	20
Benzo[b]fluoranthene	<0.020		<0.020		ug/L		NC	20
Benzo[g,h,i]perylene	<0.049		<0.049		ug/L		NC	20
Benzo[k]fluoranthene	<0.020		<0.020		ug/L		NC	20
beta-BHC	<0.098		<0.099		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.098		<0.099		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.098		<0.099		ug/L		NC	20
Chloroneb	<0.098		<0.099		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.098		<0.099		ug/L		NC	20
Chlorpyrifos	<0.049		<0.049		ug/L		NC	20
Chrysene	<0.020		<0.020		ug/L		NC	20
delta-BHC	<0.098		<0.099		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.049		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49	^3+	<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20
Di-n-butyl phthalate	<0.98		<0.99		ug/L		NC	20
Di-n-octyl phthalate	<0.098		<0.099		ug/L		NC	20
Endosulfan I (Alpha)	<0.098		<0.099		ug/L		NC	20
Endosulfan II (Beta)	<0.098		<0.099		ug/L		NC	20
Endosulfan sulfate	<0.098		<0.099		ug/L		NC	20
Endrin	<0.098		<0.099		ug/L		NC	20
Endrin aldehyde	<0.098		<0.099		ug/L		NC	20
EPTC	<0.098		<0.099		ug/L		NC	20

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-49983-G-1-A DU
Matrix: Water
Analysis Batch: 43719

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 43649

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Fluoranthene	<0.098		<0.099		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.098		<0.099		ug/L		NC	20
Methoxychlor	<0.098		<0.099		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.098		<0.099		ug/L		NC	20
Naphthalene	<0.29		<0.30		ug/L		NC	20
Parathion	<0.098		<0.099		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.099		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049	^3+	<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.098		<0.099		ug/L		NC	20
Terbutylazine	<0.098		<0.099		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.098		<0.099		ug/L		NC	20
		DU	DU					
Surrogate	%Recovery	Qualifier	Limits					
2-Nitro-m-xylene	97		70 - 130					
Perylene-d12	74		70 - 130					
Triphenylphosphate	115		70 - 130					

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

Lab Sample ID: MBL 380-45815/22-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45815

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MBL 380-45815/22-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 45815

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.25		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		06/29/23 12:05	06/30/23 18:53	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C6 PFDA	99		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C5 PFHxA	97		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C4 PFHpA	99		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C8 PFOA	101		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C9 PFNA	96		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C7 PFUnA	99		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C2 PFDoA	101		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C4 PFBA	105		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C5 PFPeA	98		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C3 PFBS	94		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C3 PFHxS	94		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C8 PFOS	99		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C2-4:2-FTS	81		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C2-6:2-FTS	88		50 - 200	06/29/23 12:05	06/30/23 18:53	1
13C2-8:2-FTS	94		50 - 200	06/29/23 12:05	06/30/23 18:53	1

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCS 380-45815/24-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45815

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	56.5	54.7		ng/L		97	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	56.5	51.5		ng/L		91	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	56.5	58.3		ng/L		103	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	56.5	53.6		ng/L		95	70 - 130
Perfluorobutanesulfonic acid (PFBS)	56.5	58.5		ng/L		104	70 - 130
Perfluorodecanoic acid (PFDA)	56.5	59.2		ng/L		105	70 - 130
Perfluorododecanoic acid (PFDoA)	56.5	58.1		ng/L		103	70 - 130
Perfluoroheptanoic acid (PFHpA)	56.5	62.3		ng/L		110	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	56.5	56.6		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	56.5	61.9		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	56.5	58.8		ng/L		104	70 - 130
Perfluorooctanesulfonic acid (PFOS)	56.5	54.7		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	56.5	58.3		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	56.5	61.5		ng/L		109	70 - 130
Perfluorobutanoic acid (PFBA)	56.5	56.6		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	56.5	64.2		ng/L		114	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	56.5	59.9		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	56.5	60.0		ng/L		106	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	56.5	55.7		ng/L		99	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	56.5	55.7		ng/L		99	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	56.5	61.7		ng/L		109	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	56.5	59.1		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	56.5	58.7		ng/L		104	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	56.5	56.3		ng/L		100	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	56.5	54.1		ng/L		96	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	100		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	100		50 - 200
13C9 PFNA	97		50 - 200

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCS 380-45815/24-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45815

<i>Isotope Dilution</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
13C7 PFUnA	97		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	102		50 - 200
13C5 PFPeA	98		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	99		50 - 200
13C2-4:2-FTS	80		50 - 200
13C2-6:2-FTS	85		50 - 200
13C2-8:2-FTS	84		50 - 200

Lab Sample ID: LCSD 380-45815/25-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45815

<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)	56.6	52.9		ng/L		93	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	56.6	48.9		ng/L		86	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	56.6	55.4		ng/L		98	70 - 130	5	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	56.6	51.8		ng/L		92	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	56.6	61.1		ng/L		108	70 - 130	4	30
Perfluorodecanoic acid (PFDA)	56.6	56.1		ng/L		99	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	56.6	55.3		ng/L		98	70 - 130	5	30
Perfluoroheptanoic acid (PFHpA)	56.6	57.9		ng/L		102	70 - 130	7	30
Perfluorohexanesulfonic acid (PFHxS)	56.6	54.7		ng/L		97	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	56.6	57.0		ng/L		101	70 - 130	8	30
Perfluorononanoic acid (PFNA)	56.6	54.1		ng/L		96	70 - 130	8	30
Perfluorooctanesulfonic acid (PFOS)	56.6	52.3		ng/L		92	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	56.6	55.1		ng/L		97	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	56.6	56.5		ng/L		100	70 - 130	8	30
Perfluorobutanoic acid (PFBA)	56.6	54.4		ng/L		96	70 - 130	4	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	56.6	58.4		ng/L		103	70 - 130	9	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	56.6	55.2		ng/L		98	70 - 130	8	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	56.6	55.4		ng/L		98	70 - 130	8	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	56.6	52.6		ng/L		93	70 - 130	6	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	56.6	57.7		ng/L		102	70 - 130	3	30

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: LCSD 380-45815/25-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45815

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	56.6	54.9		ng/L		97	70 - 130	12	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	56.6	56.5		ng/L		100	70 - 130	5	30
Perfluoropentanoic acid (PFPeA)	56.6	55.6		ng/L		98	70 - 130	5	30
Perfluoroheptanesulfonic acid (PFHpS)	56.6	53.5		ng/L		95	70 - 130	5	30
Perfluoropentanesulfonic acid (PFPeS)	56.6	52.6		ng/L		93	70 - 130	3	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	95		50 - 200
13C6 PFDA	101		50 - 200
13C5 PFHxA	102		50 - 200
13C4 PFHpA	99		50 - 200
13C8 PFOA	98		50 - 200
13C9 PFNA	99		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	99		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	84		50 - 200
13C3 PFHxS	93		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	82		50 - 200
13C2-6:2-FTS	87		50 - 200
13C2-8:2-FTS	85		50 - 200

Lab Sample ID: MRL 380-45815/23-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45815

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.68	J	ng/L		84	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.71	J	ng/L		86	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	1.81	J	ng/L		90	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.29	J	ng/L		114	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MRL 380-45815/23-A
Matrix: Water
Analysis Batch: 46026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45815

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.97	J	ng/L		98	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.37	J	ng/L		118	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.27	J	ng/L		113	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.31	J	ng/L		115	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.13	J	ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.22	J	ng/L		111	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	2.23	J	ng/L		111	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.00	J	ng/L		100	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.90	J	ng/L		95	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	89		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	97		50 - 200
13C4 PFHpA	94		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	95		50 - 200
13C7 PFUnA	90		50 - 200
13C2 PFDoA	91		50 - 200
13C4 PFBA	100		50 - 200
13C5 PFPeA	95		50 - 200
13C3 PFBS	88		50 - 200
13C3 PFHxS	90		50 - 200
13C8 PFOS	93		50 - 200
13C2-4:2-FTS	79		50 - 200
13C2-6:2-FTS	80		50 - 200
13C2-8:2-FTS	86		50 - 200

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-1 MS
Matrix: Drinking Water
Analysis Batch: 46026

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 45815

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C7 PFUnA	93		50 - 200
13C2 PFDoA	93		50 - 200
13C4 PFBA	79		50 - 200
13C5 PFPeA	74		50 - 200
13C3 PFBS	94		50 - 200
13C3 PFHxS	92		50 - 200
13C8 PFOS	96		50 - 200
13C2-4:2-FTS	82		50 - 200
13C2-6:2-FTS	84		50 - 200
13C2-8:2-FTS	91		50 - 200

Lab Sample ID: 380-50374-1 MSD
Matrix: Drinking Water
Analysis Batch: 46026

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 45815

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		56.6	55.9		ng/L		99	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		56.6	52.9		ng/L		94	70 - 130	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		56.6	54.3		ng/L		96	70 - 130	3	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		56.6	54.5		ng/L		96	70 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		56.6	59.6		ng/L		105	70 - 130	1	30
Perfluorodecanoic acid (PFDA)	<2.0		56.6	60.4		ng/L		107	70 - 130	0	30
Perfluorododecanoic acid (PFDoA)	<2.0		56.6	58.9		ng/L		104	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		56.6	60.0		ng/L		106	70 - 130	3	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		56.6	57.5		ng/L		102	70 - 130	3	30
Perfluorohexanoic acid (PFHxA)	<2.0		56.6	62.7		ng/L		111	70 - 130	4	30
Perfluorononanoic acid (PFNA)	<2.0		56.6	58.3		ng/L		103	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		56.6	56.1		ng/L		99	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	<2.0		56.6	57.6		ng/L		102	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		56.6	61.1		ng/L		108	70 - 130	3	30
Perfluorobutanoic acid (PFBA)	<2.0		56.6	56.0		ng/L		99	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		56.6	63.0		ng/L		111	70 - 130	1	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		56.6	60.5		ng/L		107	70 - 130	4	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		56.6	59.2		ng/L		105	70 - 130	1	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		56.6	56.4		ng/L		100	70 - 130	13	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		56.6	55.6		ng/L		98	70 - 130	6	30

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-1 MSD
Matrix: Drinking Water
Analysis Batch: 46026

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 45815

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		56.6	54.9		ng/L		97	70 - 130	2	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		56.6	57.7		ng/L		102	70 - 130	1	30
Perfluoropentanoic acid (PFPeA)	<2.0		56.6	60.4		ng/L		106	70 - 130	0	30
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		56.6	57.8		ng/L		102	70 - 130	0	30
Perfluoropentanesulfonic acid (PFPeS)	<2.0		56.6	53.8		ng/L		95	70 - 130	4	30
		MSD %Recovery	MSD Qualifier	Limits							
<i>Isotope Dilution</i>											
13C3 HFPO-DA		78		50 - 200							
13C6 PFDA		94		50 - 200							
13C5 PFHxA		83		50 - 200							
13C4 PFHpA		88		50 - 200							
13C8 PFOA		90		50 - 200							
13C9 PFNA		89		50 - 200							
13C7 PFUnA		93		50 - 200							
13C2 PFDoA		95		50 - 200							
13C4 PFBA		86		50 - 200							
13C5 PFPeA		81		50 - 200							
13C3 PFBS		92		50 - 200							
13C3 PFHxS		93		50 - 200							
13C8 PFOS		96		50 - 200							
13C2-4:2-FTS		80		50 - 200							
13C2-6:2-FTS		88		50 - 200							
13C2-8:2-FTS		90		50 - 200							

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

Lab Sample ID: MBL 380-43696/23-A
Matrix: Water
Analysis Batch: 43880

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43696

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1

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QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MBL 380-43696/23-A
Matrix: Water
Analysis Batch: 43880

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43696

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		06/12/23 07:36	06/14/23 08:49	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130	06/12/23 07:36	06/14/23 08:49	1
13C2 PFHxA	120		70 - 130	06/12/23 07:36	06/14/23 08:49	1
13C2 PFDA	105		70 - 130	06/12/23 07:36	06/14/23 08:49	1
13C3-GenX	116		70 - 130	06/12/23 07:36	06/14/23 08:49	1

Lab Sample ID: LCS 380-43696/25-A
Matrix: Water
Analysis Batch: 43880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43696

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	57.6		ng/L		115	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	48.1		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	49.0		ng/L		98	70 - 130
N-methylperfluorooctanesulfonamide-1,1-diacetic acid (NMeFOSAA)	50.1	50.6		ng/L		101	70 - 130
N-ethylperfluorooctanesulfonamide-1,1-diacetic acid (NEtFOSAA)	50.1	49.2		ng/L		98	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	58.4		ng/L		117	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	49.3		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	55.2		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	51.4		ng/L		103	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	52.3		ng/L		114	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	49.4		ng/L		112	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	59.8		ng/L		119	70 - 130
Perfluorononanoic acid (PFNA)	50.1	52.2		ng/L		104	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	52.3		ng/L		104	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	53.0		ng/L		106	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	47.7		ng/L		102	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	46.9		ng/L		99	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	54.0		ng/L		114	70 - 130

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QC Sample Results

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

Job ID: 380-50374-1

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	103		70 - 130
13C2 PFHxA	128		70 - 130
13C2 PFDA	111		70 - 130
13C3-GenX	125		70 - 130

Lab Sample ID: LCSD 380-43696/26-A
Matrix: Water
Analysis Batch: 43880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43696

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	55.3		ng/L		110	70 - 130	4	30	
Perfluorooctanesulfonic acid (PFOS)	46.4	48.9		ng/L		105	70 - 130	2	30	
Perfluoroundecanoic acid (PFUnA)	50.1	51.7		ng/L		103	70 - 130	5	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	49.3		ng/L		98	70 - 130	3	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	51.9		ng/L		104	70 - 130	5	30	
Perfluorohexanoic acid (PFHxA)	50.1	59.3		ng/L		118	70 - 130	1	30	
Perfluorododecanoic acid (PFDoA)	50.1	51.9		ng/L		104	70 - 130	5	30	
Perfluorooctanoic acid (PFOA)	50.1	57.5		ng/L		115	70 - 130	4	30	
Perfluorodecanoic acid (PFDA)	50.1	51.3		ng/L		102	70 - 130	0	30	
Perfluorohexanesulfonic acid (PFHxS)	45.7	51.1		ng/L		112	70 - 130	2	30	
Perfluorobutanesulfonic acid (PFBS)	44.3	51.6		ng/L		116	70 - 130	4	30	
Perfluoroheptanoic acid (PFHpA)	50.1	54.7		ng/L		109	70 - 130	9	30	
Perfluorononanoic acid (PFNA)	50.1	53.7		ng/L		107	70 - 130	3	30	
Perfluorotetradecanoic acid (PFTA)	50.1	52.8		ng/L		105	70 - 130	1	30	
Perfluorotridecanoic acid (PFTrDA)	50.1	53.5		ng/L		107	70 - 130	1	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	46.8	50.7		ng/L		108	70 - 130	6	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	48.5		ng/L		103	70 - 130	3	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	53.0		ng/L		112	70 - 130	2	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	107		70 - 130
13C2 PFHxA	118		70 - 130
13C2 PFDA	114		70 - 130
13C3-GenX	125		70 - 130

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: MRL 380-43696/24-A
Matrix: Water
Analysis Batch: 43880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 43696

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.90	J	ng/L		95	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.77	J	ng/L		95	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.75	J	ng/L		88	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.85	J	ng/L		93	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.79	J	ng/L		89	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.67	J	ng/L		133	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.40	J	ng/L		120	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.83	J	ng/L		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.76	J	ng/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.69	J	ng/L		134	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.14	J	ng/L		107	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	1.88	J	ng/L		94	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.83	J	ng/L		91	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.69	J	ng/L		90	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.65	J	ng/L		87	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.01	J	ng/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	91		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	98		70 - 130
13C3-GenX	107		70 - 130

Lab Sample ID: 380-50374-1 MS
Matrix: Drinking Water
Analysis Batch: 43880

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 43696

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	44.6		ng/L		89	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		46.5	40.5		ng/L		87	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	40.0		ng/L		80	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	40.7		ng/L		81	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-50374-1

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

Lab Sample ID: 380-50374-1 MSD
Matrix: Drinking Water
Analysis Batch: 43880

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA
Prep Batch: 43696

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.9	52.4		ng/L		114	70 - 130	21	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.5	50.2		ng/L		113	70 - 130	23	30
Perfluoroheptanoic acid (PFHpA)	<2.0		50.3	57.4		ng/L		114	70 - 130	17	30
Perfluorononanoic acid (PFNA)	<2.0		50.3	53.1		ng/L		105	70 - 130	22	30
Perfluorotetradecanoic acid (PFTA)	<2.0		50.3	54.4		ng/L		108	70 - 130	21	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		50.3	52.4		ng/L		104	70 - 130	21	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		47.0	48.7		ng/L		103	70 - 130	18	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.5	49.2		ng/L		103	70 - 130	19	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.5	53.8		ng/L		113	70 - 130	19	30

Surrogate	MSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	108		70 - 130
13C2 PFHxA	131	S1+	70 - 130
13C2 PFDA	113		70 - 130
13C3-GenX	129		70 - 130

QC Association Summary

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

Job ID: 380-50374-1

GC/MS Semi VOA

Prep Batch: 43649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-50374-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	
MB 380-43649/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-43649/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-43649/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-43649/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-49858-V-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-49983-G-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 43719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	43649
380-50374-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	43649
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	43649
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	43649
MB 380-43649/21-A	Method Blank	Total/NA	Water	525.2	43649
LCS 380-43649/23-A	Lab Control Sample	Total/NA	Water	525.2	43649
LCSD 380-43649/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	43649
MRL 380-43649/22-A	Lab Control Sample	Total/NA	Water	525.2	43649
380-49858-V-1-A MS	Matrix Spike	Total/NA	Water	525.2	43649
380-49983-G-1-A DU	Duplicate	Total/NA	Water	525.2	43649

LCMS

Prep Batch: 43696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-50374-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-50374-9	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-50374-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-43696/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-43696/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-43696/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-43696/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-50374-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-50374-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 43880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	43696
380-50374-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	43696
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	43696
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	43696
380-50374-9	FB MOANALUA WELLS	Total/NA	Water	537.1	43696
380-50374-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	43696

QC Association Summary

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

Job ID: 380-50374-1

LCMS (Continued)

Analysis Batch: 43880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	43696
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	43696
MBL 380-43696/23-A	Method Blank	Total/NA	Water	537.1	43696
LCS 380-43696/25-A	Lab Control Sample	Total/NA	Water	537.1	43696
LCSD 380-43696/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	43696
MRL 380-43696/24-A	Lab Control Sample	Total/NA	Water	537.1	43696
380-50374-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	537.1	43696
380-50374-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	537.1	43696

Prep Batch: 45815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-50374-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	
380-50374-9	FB MOANALUA WELLS	Total/NA	Water	533	
380-50374-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-45815/22-A	Method Blank	Total/NA	Water	533	
LCS 380-45815/24-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-45815/25-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-45815/23-A	Lab Control Sample	Total/NA	Water	533	
380-50374-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-50374-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	533	

Analysis Batch: 46026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-50374-1	MOANALUA WELLS	Total/NA	Drinking Water	533	45815
380-50374-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	45815
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	45815
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	45815
380-50374-9	FB MOANALUA WELLS	Total/NA	Water	533	45815
380-50374-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	45815
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	45815
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	45815
MBL 380-45815/22-A	Method Blank	Total/NA	Water	533	45815
LCS 380-45815/24-A	Lab Control Sample	Total/NA	Water	533	45815
LCSD 380-45815/25-A	Lab Control Sample Dup	Total/NA	Water	533	45815
MRL 380-45815/23-A	Lab Control Sample	Total/NA	Water	533	45815
380-50374-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	533	45815
380-50374-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	533	45815

Lab Chronicle

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

Job ID: 380-50374-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-50374-1

Date Collected: 06/05/23 09:59

Matrix: Drinking Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			43649	N8NE	EA POM	06/12/23 04:07
Total/NA	Analysis	525.2		1	43719	UPAC	EA POM	06/12/23 14:33
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 19:32
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/15/23 09:14

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-2

Date Collected: 06/05/23 11:42

Matrix: Drinking Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			43649	N8NE	EA POM	06/12/23 04:07
Total/NA	Analysis	525.2		1	43719	UPAC	EA POM	06/12/23 14:52
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 21:08
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 10:26

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

Lab Sample ID: 380-50374-3

Date Collected: 06/05/23 11:05

Matrix: Drinking Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			43649	N8NE	EA POM	06/12/23 04:07
Total/NA	Analysis	525.2		1	43719	UPAC	EA POM	06/12/23 15:12
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 21:18
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 13:44

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-50374-4

Date Collected: 06/05/23 10:33

Matrix: Drinking Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			43649	N8NE	EA POM	06/12/23 04:07
Total/NA	Analysis	525.2		1	43719	UPAC	EA POM	06/12/23 15:32
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 21:38
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 10:46

Lab Chronicle

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

Job ID: 380-50374-1

Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-50374-9

Date Collected: 06/05/23 09:59

Matrix: Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 21:49
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 10:55

Client Sample ID: FB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-50374-10

Date Collected: 06/05/23 11:42

Matrix: Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 21:59
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 11:05

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

Lab Sample ID: 380-50374-11

Date Collected: 06/05/23 11:05

Matrix: Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 22:08
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 11:14

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

Lab Sample ID: 380-50374-12

Date Collected: 06/05/23 10:33

Matrix: Water

Date Received: 06/07/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			45815	AUY6	EA POM	06/29/23 12:05
Total/NA	Analysis	533		1	46026	UKYM	EA POM	06/30/23 22:18
Total/NA	Prep	537.1 DW			43696	US1B	EA POM	06/12/23 07:36
Total/NA	Analysis	537.1		1	43880	UKYM	EA POM	06/14/23 11:35

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: 380-50374-1

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	02-29-24

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: 380-50374-1

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: 380-50374-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
533	533	Water	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: 380-50374-1

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: 380-50374-1

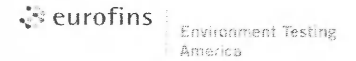
Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-50374-1	MOANALUA WELLS	Drinking Water	06/05/23 09:59	06/07/23 10:00	HI0000331
380-50374-2	AIEA GULCH WELLS PUMP 2	Drinking Water	06/05/23 11:42	06/07/23 10:00	HI0000331
380-50374-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	06/05/23 11:05	06/07/23 10:00	HI0000331
380-50374-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	06/05/23 10:33	06/07/23 10:00	HI0000331
380-50374-9	FB MOANALUA WELLS	Water	06/05/23 09:59	06/07/23 10:00	
380-50374-10	FB AIEA GULCH WELLS PUMP 2	Water	06/05/23 11:42	06/07/23 10:00	
380-50374-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	06/05/23 11:05	06/07/23 10:00	
380-50374-12	FB HALAWA WELLS UNITS 1 & 2 P1	Water	06/05/23 10:33	06/07/23 10:00	

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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		Sampler: BAILEY		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-27941-2757.2				
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		E-Mail: Rachele.Arada@et.euronisus.com		State of Origin:		Page: Page 1 of 2				
Company: City & County of Honolulu				PWSID:		Analysis Requested						
Address: 630 South Beretania Street; Chemistry Lab				Due Date Requested:								
City: Honolulu				TAT Requested (days):		SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil 525.2.PREC. (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 537.1.DW.PREC. 537.1 Full List 533 - All Analytes						
State, Zip: HI, 96843				Compliance Project: A No								
Phone: 808-748-5091 (tel)				PO #: C20525101 exp 05312023		Total Number of containers						
Email: rfenstermacher@hbws.org				WO #:								
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill				Project #: 38001111		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)						
Site:				SSOW#:								
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note:
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	R	R	RA	RA	
MOANALUA WELLS		5-Jun-2023	0959	G	Water			2	2	2	4	1-7723 6444 3089
AIEA GULCH WELLS PUMP2		5-Jun-2023	1142	G	Water			2	2	2	4	2-7723 6444 3023
AIEA WELLS PUMPS 1&2 (260) P2		5-Jun-2023	1105	G	Water			2	2	2	4	3-7723 6444 2943
HALAWA WELLS UNITS 1&2 P1		5-Jun-2023	1033	G	Water			2	2	2	4	4-7723 6444 3148
TB MOANALUA WELLS		5-Jun-2023	0959		Water						2	
TB AIEA GULCH WELLS PUMP2		5-Jun-2023	1142		Water						2	
TB AIEA WELLS PUMPS 1&2 (260)		5-Jun-2023	1105		Water						2	
TB HALAWA WELLS UNITS 1&2		5-Jun-2023	1033		Water						2	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:						
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment: FED EX ↑ 4 COOLERS				
Relinquished by: BAILEY		Date/Time: 06JUN2023 1400		Company: HBWS		Received by: GREITNER		Date/Time: 06/07/2023 10:00		Company: EEA		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: GEL-FROZEN-(751A) 1 - 1.7° - 0.2° = 1.5° 2 - 2.5° - 0.2° = 2.3° 3 - 2.8° - 0.2° = 2.6° 4 - 1.4° - 0.2° = 1.2°								



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-50374-1

Login Number: 50374
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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