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ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-54555-1

Eurofins Eaton Analytical Pomona

Job Notes

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

Compliance Statement

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

Authorization



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Definitions/Glossary

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

Job ID: 380-54555-1

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
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

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

Job ID: 380-54555-1

Job ID: 380-54555-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-54555-1

Comments

No additional comments.

Receipt

The samples were received on 7/12/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.7° C.

GC/MS Semi VOA

Method 525.2: The continuing calibration verification (CCV) associated with batch 380-47532 recovered above the upper control limit for trans-Nonachlor. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-54555-1) and AIEA WELLS PUMPS 1&2 (260) (331-203-TP400) (380-54555-2).

No additional analytical or quality issues were noted, other than those described above or 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: 380-54555-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**
PWSID Number: HI0000331

Lab Sample ID: 380-54555-1

No Detections.

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**
PWSID Number: HI0000331

Lab Sample ID: 380-54555-2

No Detections.

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-3

No Detections.

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-4

No Detections.

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-5

No Detections.

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona



Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-1

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 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	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
2,4'-DDD	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
2,4'-DDE	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
2,4'-DDT	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
2-Methylnaphthalene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
4,4'-DDD	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
4,4'-DDE	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
4,4'-DDT	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Acenaphthene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Acenaphthylene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Acetochlor	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Alachlor	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
alpha-BHC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
alpha-Chlordane	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Anthracene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 17:00	1
Atrazine	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Benz(a)anthracene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 17:00	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 17:00	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 17:00	1
beta-BHC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		07/14/23 12:40	07/16/23 17:00	1
Bromacil	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Butachlor	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Butylbenzylphthalate	<0.49		0.49	ug/L		07/14/23 12:40	07/16/23 17:00	1
Chlorobenzilate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Chloroneb	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Chlorpyrifos	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Chrysene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 17:00	1
delta-BHC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		07/14/23 12:40	07/16/23 17:00	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Dieldrin	<0.20		0.20	ug/L		07/14/23 12:40	07/16/23 17:00	1
Diethylphthalate	<0.49		0.49	ug/L		07/14/23 12:40	07/16/23 17:00	1
Dimethylphthalate	<0.49		0.49	ug/L		07/14/23 12:40	07/16/23 17:00	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		07/14/23 12:40	07/16/23 17:00	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Endosulfan sulfate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Endrin	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Endrin aldehyde	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
EPTC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1

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Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-1

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 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
Fluoranthene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Fluorene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
gamma-Chlordane	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Heptachlor	<0.039		0.039	ug/L		07/14/23 12:40	07/16/23 17:00	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Hexachlorobenzene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Isophorone	<0.49		0.49	ug/L		07/14/23 12:40	07/16/23 17:00	1
Lindane	<0.039		0.039	ug/L		07/14/23 12:40	07/16/23 17:00	1
Malathion	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Methoxychlor	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Metolachlor	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Molinate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Naphthalene	<0.30		0.30	ug/L		07/14/23 12:40	07/16/23 17:00	1
Parathion	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Phenanthrene	<0.039		0.039	ug/L		07/14/23 12:40	07/16/23 17:00	1
Propachlor	<0.049	^3+	0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Pyrene	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Simazine	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Terbacil	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Terbutylazine	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1
Thiobencarb	<0.20		0.20	ug/L		07/14/23 12:40	07/16/23 17:00	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/14/23 12:40	07/16/23 17:00	1
trans-Nonachlor	<0.049		0.049	ug/L		07/14/23 12:40	07/16/23 17:00	1
Trifluralin	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 17:00	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	07/14/23 12:40	07/16/23 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	93		70 - 130	07/14/23 12:40	07/16/23 17:00	1
Perylene-d12	84		70 - 130	07/14/23 12:40	07/16/23 17:00	1
Triphenylphosphate	115		70 - 130	07/14/23 12:40	07/16/23 17:00	1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-2

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 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	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
2,4'-DDD	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
2,4'-DDE	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
2,4'-DDT	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-2

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 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
2-Methylnaphthalene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
4,4'-DDD	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
4,4'-DDE	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
4,4'-DDT	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Acenaphthene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Acenaphthylene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Acetochlor	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Alachlor	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
alpha-BHC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
alpha-Chlordane	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Anthracene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 21:59	1
Atrazine	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Benz(a)anthracene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 21:59	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 21:59	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 21:59	1
beta-BHC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		07/14/23 12:40	07/16/23 21:59	1
Bromacil	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Butachlor	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Butylbenzylphthalate	<0.50		0.50	ug/L		07/14/23 12:40	07/16/23 21:59	1
Chlorobenzilate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Chloroneb	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Chlorpyrifos	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Chrysene	<0.020		0.020	ug/L		07/14/23 12:40	07/16/23 21:59	1
delta-BHC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		07/14/23 12:40	07/16/23 21:59	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Dieldrin	<0.20		0.20	ug/L		07/14/23 12:40	07/16/23 21:59	1
Diethylphthalate	<0.50		0.50	ug/L		07/14/23 12:40	07/16/23 21:59	1
Dimethylphthalate	<0.50		0.50	ug/L		07/14/23 12:40	07/16/23 21:59	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		07/14/23 12:40	07/16/23 21:59	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Endosulfan sulfate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Endrin	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Endrin aldehyde	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
EPTC	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Fluoranthene	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Fluorene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
gamma-Chlordane	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Heptachlor	<0.040		0.040	ug/L		07/14/23 12:40	07/16/23 21:59	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Hexachlorobenzene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)

Lab Sample ID: 380-54555-2

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 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
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Isophorone	<0.50		0.50	ug/L		07/14/23 12:40	07/16/23 21:59	1
Lindane	<0.040		0.040	ug/L		07/14/23 12:40	07/16/23 21:59	1
Malathion	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Methoxychlor	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Metolachlor	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Molinate	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Naphthalene	<0.30		0.30	ug/L		07/14/23 12:40	07/16/23 21:59	1
Parathion	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Phenanthrene	<0.040		0.040	ug/L		07/14/23 12:40	07/16/23 21:59	1
Propachlor	<0.050	^3+	0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Pyrene	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Simazine	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Terbacil	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Terbutylazine	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1
Thiobencarb	<0.20		0.20	ug/L		07/14/23 12:40	07/16/23 21:59	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/14/23 12:40	07/16/23 21:59	1
trans-Nonachlor	<0.050		0.050	ug/L		07/14/23 12:40	07/16/23 21:59	1
Trifluralin	<0.099		0.099	ug/L		07/14/23 12:40	07/16/23 21:59	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	07/14/23 12:40	07/16/23 21:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	89		70 - 130	07/14/23 12:40	07/16/23 21:59	1
Perylene-d12	83		70 - 130	07/14/23 12:40	07/16/23 21:59	1
Triphenylphosphate	115		70 - 130	07/14/23 12:40	07/16/23 21:59	1

Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)

Lab Sample ID: 380-54555-3

Date Collected: 07/10/23 09:00

Matrix: Water

Date Received: 07/12/23 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		07/27/23 16:35	07/30/23 05:08	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-3

Date Collected: 07/10/23 09:00

Matrix: Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:08	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C6 PFDA	92		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C5 PFHxA	91		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C4 PFHpA	97		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C8 PFOA	94		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C9 PFNA	95		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C7 PFUnA	91		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C2 PFDoA	101		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C4 PFBA	92		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C5 PFPeA	96		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C3 PFBS	94		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C3 PFHxS	122		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C8 PFOS	97		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C2-4:2-FTS	110		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C2-6:2-FTS	96		50 - 200			07/27/23 16:35	07/30/23 05:08	1
13C2-8:2-FTS	93		50 - 200			07/27/23 16:35	07/30/23 05:08	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		07/17/23 07:08	07/20/23 12:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-3

Date Collected: 07/10/23 09:00

Matrix: Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	116		70 - 130			07/17/23 07:08	07/20/23 12:19	1
13C2 PFHxA	127		70 - 130			07/17/23 07:08	07/20/23 12:19	1
13C2 PFDA	116		70 - 130			07/17/23 07:08	07/20/23 12:19	1
13C3-GenX	125		70 - 130			07/17/23 07:08	07/20/23 12:19	1

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-4

Date Collected: 07/10/23 09:30

Matrix: Water

Date Received: 07/12/23 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		07/27/23 16:35	07/30/23 05:17	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-4

Date Collected: 07/10/23 09:30

Matrix: Water

Date Received: 07/12/23 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		07/27/23 16:35	07/30/23 05:17	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C6 PFDA	92		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C5 PFHxA	92		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C4 PFHpA	88		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C8 PFOA	92		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C9 PFNA	88		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C7 PFUnA	93		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C2 PFDoA	95		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C4 PFBA	92		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C5 PFPeA	97		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C3 PFBS	100		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C3 PFHxS	128		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C8 PFOS	97		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C2-4:2-FTS	111		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C2-6:2-FTS	102		50 - 200	07/27/23 16:35	07/30/23 05:17	1
13C2-8:2-FTS	99		50 - 200	07/27/23 16:35	07/30/23 05:17	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		07/17/23 07:08	07/20/23 12:38	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-4

Date Collected: 07/10/23 09:30

Matrix: Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			07/17/23 07:08	07/20/23 12:38	1
13C2 PFHxA	122		70 - 130			07/17/23 07:08	07/20/23 12:38	1
13C2 PFDA	118		70 - 130			07/17/23 07:08	07/20/23 12:38	1
13C3-GenX	109		70 - 130			07/17/23 07:08	07/20/23 12:38	1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-5

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 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		07/27/23 16:35	07/30/23 05:27	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-5

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:27	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C6 PFDA	85		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C5 PFHxA	83		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C4 PFHpA	87		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C8 PFOA	87		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C9 PFNA	90		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C7 PFUnA	89		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C2 PFDoA	91		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C4 PFBA	89		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C5 PFPeA	100		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C3 PFBS	93		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C3 PFHxS	125		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C8 PFOS	96		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C2-4:2-FTS	111		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C2-6:2-FTS	102		50 - 200			07/27/23 16:35	07/30/23 05:27	1
13C2-8:2-FTS	94		50 - 200			07/27/23 16:35	07/30/23 05:27	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		07/17/23 07:08	07/20/23 10:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-5

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 10:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	115		70 - 130			07/17/23 07:08	07/20/23 10:34	1
13C2 PFHxA	123		70 - 130			07/17/23 07:08	07/20/23 10:34	1
13C2 PFDA	122		70 - 130			07/17/23 07:08	07/20/23 10:34	1
13C3-GenX	122		70 - 130			07/17/23 07:08	07/20/23 10:34	1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-6

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 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		07/27/23 16:35	07/30/23 05:36	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-6

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		07/27/23 16:35	07/30/23 05:36	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	65		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C6 PFDA	84		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C5 PFHxA	75		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C4 PFHpA	79		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C8 PFOA	87		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C9 PFNA	87		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C7 PFUnA	93		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C2 PFDoA	97		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C4 PFBA	77		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C5 PFPeA	79		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C3 PFBS	99		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C3 PFHxS	131		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C8 PFOS	101		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C2-4:2-FTS	111		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C2-6:2-FTS	107		50 - 200			07/27/23 16:35	07/30/23 05:36	1
13C2-8:2-FTS	100		50 - 200			07/27/23 16:35	07/30/23 05:36	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		07/17/23 07:08	07/20/23 12:48	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-54555-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
 (331-203-TP400)**

Lab Sample ID: 380-54555-6

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		07/17/23 07:08	07/20/23 12:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	109		70 - 130			07/17/23 07:08	07/20/23 12:48	1
13C2 PFHxA	116		70 - 130			07/17/23 07:08	07/20/23 12:48	1
13C2 PFDA	113		70 - 130			07/17/23 07:08	07/20/23 12:48	1
13C3-GenX	122		70 - 130			07/17/23 07:08	07/20/23 12:48	1

Action Limit Summary

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

Job ID: 380-54555-1

Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)
PWSID Number: HI0000331

Lab Sample ID: 380-54555-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	<0.049		ug/L	2	0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.099		ug/L	2	0.099	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	<0.099		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)
(331-203-TP400)
PWSID Number: HI0000331

Lab Sample ID: 380-54555-2

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	<0.050		ug/L	2	0.050	525.2	Total/NA
Atrazine	<0.050		ug/L	3	0.050	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		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)	<0.050		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	<0.050		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	<0.050		ug/L	50	0.050	525.2	Total/NA
Lindane	<0.040		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40	0.099	525.2	Total/NA
Simazine	<0.050		ug/L	4	0.050	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-54555-1

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)
380-54555-1	AIEA GULCH WELLS PUMP 2 (	93	84	115
380-54555-1 DU	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	91	87	118
380-54555-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	89	83	115

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)
380-54276-T-1-A MS	Matrix Spike	93	86	113
LCS 380-47333/3-A	Lab Control Sample	94	89	111
LCSD 380-47333/4-A	Lab Control Sample Dup	93	87	118
MB 380-47333/1-A	Method Blank	94	88	113
MRL 380-47333/2-A	Lab Control Sample	94	83	105

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)
380-54555-5	AIEA GULCH WELLS PUMP 2 (	115	123	122	122
380-54555-5 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	117	127	123	118
380-54555-5 MSD	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	110	118	116	117
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	109	116	113	122

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: 380-54555-1

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)
380-54555-3	FB: AIEA GULCH WELLS PUMF	116	127	116	125
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	104	122	118	109
LCSD 380-47573/26-A	Lab Control Sample	111	124	123	126
MBL 380-47573/24-A	Method Blank	112	121	118	118
MRL 380-47573/23-A	Lab Control Sample	112	124	115	121

Surrogate Legend

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



Isotope Dilution Summary

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

Job ID: 380-54555-1

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)
380-54555-5	AIEA GULCH WELLS PUMP 2 (	75	85	83	87	87	90	89	91
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	65	84	75	79	87	87	93	97

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)
380-54555-5	AIEA GULCH WELLS PUMP 2 (	89	100	93	125	96	111	102	94
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	77	79	99	131	101	111	107	100

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)
380-54555-3	FB: AIEA GULCH WELLS PUMF	79	92	91	97	94	95	91	101
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	79	92	92	88	92	88	93	95
380-55838-B-1-A LMS	Matrix Spike	77	87	87	85	92	90	91	98
380-55838-C-1-A LMSD	Matrix Spike Duplicate	74	82	82	90	84	85	83	88
LCS 380-49177/21-A	Lab Control Sample	80	81	79	78	81	82	85	85
LCSD 380-49177/22-A	Lab Control Sample Dup	94	95	97	98	93	94	95	95
MBL 380-49177/19-A	Method Blank	69	84	78	80	83	88	88	93
MRL 380-49177/20-A	Lab Control Sample	75	83	83	86	87	87	88	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)
380-54555-3	FB: AIEA GULCH WELLS PUMF	92	96	94	122	97	110	96	93
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	92	97	100	128	97	111	102	99
380-55838-B-1-A LMS	Matrix Spike	93	97	97	124	98	110	102	99
380-55838-C-1-A LMSD	Matrix Spike Duplicate	91	96	91	123	90	105	100	90

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Isotope Dilution Summary

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

Job ID: 380-54555-1

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	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
LCS 380-49177/21-A	Lab Control Sample	83	89	83	108	86	85	89	85
LCSD 380-49177/22-A	Lab Control Sample Dup	91	99	102	127	97	95	93	92
MBL 380-49177/19-A	Method Blank	85	89	91	108	95	102	99	97
MRL 380-49177/20-A	Lab Control Sample	87	97	99	127	94	112	107	94

Surrogate Legend

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

QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MB 380-47333/1-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47333

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
2,4'-DDD	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
2,4'-DDE	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
2,4'-DDT	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
2-Methylnaphthalene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
4,4'-DDD	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
4,4'-DDE	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
4,4'-DDT	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Acenaphthene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Acenaphthylene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Acetochlor	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Alachlor	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
alpha-BHC	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
alpha-Chlordane	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Anthracene	<0.020		0.020	ug/L		07/14/23 07:30	07/16/23 16:20	1
Atrazine	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Benz(a)anthracene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Benzo[a]pyrene	<0.020		0.020	ug/L		07/14/23 07:30	07/16/23 16:20	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		07/14/23 07:30	07/16/23 16:20	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		07/14/23 07:30	07/16/23 16:20	1
beta-BHC	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		07/14/23 07:30	07/16/23 16:20	1
Bromacil	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Butachlor	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Butylbenzylphthalate	<0.50		0.50	ug/L		07/14/23 07:30	07/16/23 16:20	1
Chlorobenzilate	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Chloroneb	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Chlorpyrifos	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Chrysene	<0.020		0.020	ug/L		07/14/23 07:30	07/16/23 16:20	1
delta-BHC	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		07/14/23 07:30	07/16/23 16:20	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Dieldrin	<0.20		0.20	ug/L		07/14/23 07:30	07/16/23 16:20	1
Diethylphthalate	<0.50		0.50	ug/L		07/14/23 07:30	07/16/23 16:20	1
Dimethylphthalate	<0.50		0.50	ug/L		07/14/23 07:30	07/16/23 16:20	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		07/14/23 07:30	07/16/23 16:20	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Endosulfan sulfate	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Endrin	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Endrin aldehyde	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
EPTC	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MB 380-47333/1-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47333

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Fluorene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
gamma-Chlordane	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Heptachlor	<0.040		0.040	ug/L		07/14/23 07:30	07/16/23 16:20	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Hexachlorobenzene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Isophorone	<0.50		0.50	ug/L		07/14/23 07:30	07/16/23 16:20	1
Lindane	<0.040		0.040	ug/L		07/14/23 07:30	07/16/23 16:20	1
Malathion	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Methoxychlor	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Metolachlor	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Molinate	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Naphthalene	<0.30		0.30	ug/L		07/14/23 07:30	07/16/23 16:20	1
Parathion	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Phenanthrene	<0.040		0.040	ug/L		07/14/23 07:30	07/16/23 16:20	1
Propachlor	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Pyrene	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Simazine	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Terbacil	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Terbutylazine	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1
Thiobencarb	<0.20		0.20	ug/L		07/14/23 07:30	07/16/23 16:20	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		07/14/23 07:30	07/16/23 16:20	1
trans-Nonachlor	<0.050		0.050	ug/L		07/14/23 07:30	07/16/23 16:20	1
Trifluralin	<0.099		0.099	ug/L		07/14/23 07:30	07/16/23 16:20	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.19	T J	ug/L		2.27	N/A	07/14/23 07:30	07/16/23 16:20	1
Decane, 2-methyl-	0.859	T J N	ug/L		2.50	6975-98-0	07/14/23 07:30	07/16/23 16:20	1
Unknown	0.670	T J	ug/L		2.59	N/A	07/14/23 07:30	07/16/23 16:20	1
Unknown	0.506	T J	ug/L		2.65	N/A	07/14/23 07:30	07/16/23 16:20	1
n-Hexadecanoic acid	0.499	T J N	ug/L		5.69	57-10-3	07/14/23 07:30	07/16/23 16:20	1
1,4-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	0.746	T J N	ug/L		9.57	6422-86-2	07/14/23 07:30	07/16/23 16:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	94		70 - 130	07/14/23 07:30	07/16/23 16:20	1
Perylene-d12	88		70 - 130	07/14/23 07:30	07/16/23 16:20	1
Triphenylphosphate	113		70 - 130	07/14/23 07:30	07/16/23 16:20	1

Lab Sample ID: LCS 380-47333/3-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.99	2.04		ug/L		103	70 - 130

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCS 380-47333/3-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.99	2.08		ug/L		105	70 - 130
2,4'-DDE	1.99	2.01		ug/L		101	70 - 130
2,4'-DDT	1.99	2.23		ug/L		112	70 - 130
2,4-Dinitrotoluene	1.99	2.10		ug/L		106	70 - 130
2,6-Dinitrotoluene	1.99	2.06		ug/L		104	70 - 130
2-Methylnaphthalene	1.99	2.03		ug/L		102	70 - 130
4,4'-DDD	1.99	2.19		ug/L		110	70 - 130
4,4'-DDE	1.99	2.29		ug/L		115	70 - 130
4,4'-DDT	1.99	2.16		ug/L		108	70 - 130
Acenaphthene	1.99	1.93		ug/L		97	70 - 130
Acenaphthylene	1.99	2.00		ug/L		101	70 - 130
Acetochlor	1.99	1.96		ug/L		99	70 - 130
Alachlor	1.99	1.98		ug/L		99	70 - 130
alpha-BHC	1.99	1.97		ug/L		99	70 - 130
alpha-Chlordane	1.99	2.29		ug/L		115	70 - 130
Anthracene	1.99	1.98		ug/L		100	70 - 130
Atrazine	1.99	2.38		ug/L		120	70 - 130
Benz(a)anthracene	1.99	2.25		ug/L		113	70 - 130
Benzo[a]pyrene	1.99	2.17		ug/L		109	70 - 130
Benzo[b]fluoranthene	1.99	2.26		ug/L		114	70 - 130
Benzo[g,h,i]perylene	1.99	1.84		ug/L		92	70 - 130
Benzo[k]fluoranthene	1.99	2.33		ug/L		117	70 - 130
beta-BHC	1.99	2.00		ug/L		101	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	1.94		ug/L		98	70 - 130
Bromacil	1.99	2.12		ug/L		107	70 - 130
Butachlor	1.99	2.14		ug/L		108	70 - 130
Butylbenzylphthalate	1.99	2.27		ug/L		114	70 - 130
Chlorobenzilate	1.99	1.73		ug/L		87	70 - 130
Chloroneb	1.99	2.15		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	1.91		ug/L		96	70 - 130
Chlorpyrifos	1.99	2.20		ug/L		111	70 - 130
Chrysene	1.99	2.17		ug/L		109	70 - 130
delta-BHC	1.99	1.84		ug/L		92	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.13		ug/L		107	70 - 130
Dibenz(a,h)anthracene	1.99	2.21		ug/L		111	70 - 130
Diclorvos (DDVP)	1.99	2.03		ug/L		102	70 - 130
Dieldrin	1.99	1.92		ug/L		97	70 - 130
Diethylphthalate	1.99	2.10		ug/L		106	70 - 130
Dimethylphthalate	1.99	2.10		ug/L		105	70 - 130
Di-n-butyl phthalate	3.97	4.05		ug/L		102	70 - 130
Di-n-octyl phthalate	1.99	1.87		ug/L		94	70 - 130
Endosulfan I (Alpha)	1.99	1.80		ug/L		91	70 - 130
Endosulfan II (Beta)	1.99	1.97		ug/L		99	70 - 130
Endosulfan sulfate	1.99	2.11		ug/L		106	70 - 130
Endrin	1.99	2.00		ug/L		101	70 - 130
Endrin aldehyde	1.99	2.04		ug/L		103	70 - 130
EPTC	1.99	2.12		ug/L		106	70 - 130
Fluoranthene	1.99	2.19		ug/L		110	70 - 130
Fluorene	1.99	2.10		ug/L		106	70 - 130

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCS 380-47333/3-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
gamma-Chlordane	1.99	2.29		ug/L		115	70 - 130
Heptachlor	1.99	2.03		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	1.99	2.27		ug/L		114	70 - 130
Hexachlorobenzene	1.99	2.15		ug/L		108	70 - 130
Hexachlorocyclopentadiene	1.99	1.98		ug/L		100	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.10		ug/L		106	70 - 130
Isophorone	1.99	1.99		ug/L		100	70 - 130
Lindane	1.99	2.00		ug/L		100	70 - 130
Malathion	1.99	2.02		ug/L		102	70 - 130
Methoxychlor	1.99	2.19		ug/L		110	70 - 130
Metolachlor	1.99	2.11		ug/L		106	70 - 130
Molinate	1.99	2.18		ug/L		110	70 - 130
Naphthalene	1.99	2.03		ug/L		102	70 - 130
Parathion	1.99	2.23		ug/L		112	70 - 130
Pendimethalin (Penoxaline)	1.99	2.00		ug/L		101	70 - 130
Phenanthrene	1.99	1.95		ug/L		98	70 - 130
Propachlor	1.99	1.98		ug/L		100	70 - 130
Pyrene	1.99	2.22		ug/L		112	70 - 130
Simazine	1.99	2.36		ug/L		119	70 - 130
Terbacil	1.99	2.32		ug/L		117	70 - 130
Terbutylazine	1.99	2.38		ug/L		120	70 - 130
Thiobencarb	1.99	2.09		ug/L		105	70 - 130
trans-Nonachlor	1.99	2.38		ug/L		120	70 - 130
Trifluralin	1.99	1.87		ug/L		94	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	94		70 - 130
Perylene-d12	89		70 - 130
Triphenylphosphate	111		70 - 130

Lab Sample ID: LCSD 380-47333/4-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.98	2.01		ug/L		101	70 - 130	1	20
2,4'-DDD	1.98	2.10		ug/L		106	70 - 130	1	20
2,4'-DDE	1.98	2.04		ug/L		103	70 - 130	1	20
2,4'-DDT	1.98	2.25		ug/L		113	70 - 130	1	20
2,4-Dinitrotoluene	1.98	2.24		ug/L		113	70 - 130	7	20
2,6-Dinitrotoluene	1.98	2.14		ug/L		108	70 - 130	4	20
2-Methylnaphthalene	1.98	1.99		ug/L		101	70 - 130	2	20
4,4'-DDD	1.98	2.24		ug/L		113	70 - 130	2	20
4,4'-DDE	1.98	2.34		ug/L		118	70 - 130	2	20
4,4'-DDT	1.98	2.21		ug/L		111	70 - 130	2	20
Acenaphthene	1.98	1.88		ug/L		95	70 - 130	3	20
Acenaphthylene	1.98	1.94		ug/L		98	70 - 130	3	20
Acetochlor	1.98	2.07		ug/L		104	70 - 130	5	20

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCSD 380-47333/4-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Alachlor	1.98	2.01		ug/L		101	70 - 130	2	20	
alpha-BHC	1.98	1.98		ug/L		100	70 - 130	1	20	
alpha-Chlordane	1.98	2.28		ug/L		115	70 - 130	0	20	
Anthracene	1.98	1.95		ug/L		99	70 - 130	1	20	
Atrazine	1.98	2.38		ug/L		120	70 - 130	0	20	
Benz(a)anthracene	1.98	2.27		ug/L		115	70 - 130	1	20	
Benzo[a]pyrene	1.98	2.11		ug/L		106	70 - 130	3	20	
Benzo[b]fluoranthene	1.98	2.16		ug/L		109	70 - 130	4	20	
Benzo[g,h,i]perylene	1.98	1.84		ug/L		93	70 - 130	0	20	
Benzo[k]fluoranthene	1.98	2.39		ug/L		120	70 - 130	2	20	
beta-BHC	1.98	2.04		ug/L		103	70 - 130	2	20	
Bis(2-ethylhexyl) phthalate	1.98	1.91		ug/L		96	70 - 130	1	20	
Bromacil	1.98	2.24		ug/L		113	70 - 130	5	20	
Butachlor	1.98	2.22		ug/L		112	70 - 130	3	20	
Butylbenzylphthalate	1.98	2.31		ug/L		117	70 - 130	2	20	
Chlorobenzilate	1.98	1.80		ug/L		91	70 - 130	4	20	
Chloroneb	1.98	2.04		ug/L		103	70 - 130	5	20	
Chlorothalonil (Draconil, Bravo)	1.98	1.91		ug/L		96	70 - 130	0	20	
Chlorpyrifos	1.98	2.19		ug/L		110	70 - 130	0	20	
Chrysene	1.98	2.08		ug/L		105	70 - 130	4	20	
delta-BHC	1.98	1.80		ug/L		91	70 - 130	2	20	
Di(2-ethylhexyl)adipate	1.98	2.15		ug/L		108	70 - 130	1	20	
Dibenz(a,h)anthracene	1.98	2.23		ug/L		113	70 - 130	1	20	
Diclorvos (DDVP)	1.98	2.11		ug/L		107	70 - 130	4	20	
Dieldrin	1.98	1.98		ug/L		100	70 - 130	3	20	
Diethylphthalate	1.98	2.09		ug/L		105	70 - 130	0	20	
Dimethylphthalate	1.98	2.10		ug/L		106	70 - 130	0	20	
Di-n-butyl phthalate	3.96	4.05		ug/L		102	70 - 130	0	20	
Di-n-octyl phthalate	1.98	1.86		ug/L		94	70 - 130	1	20	
Endosulfan I (Alpha)	1.98	1.84		ug/L		93	70 - 130	2	20	
Endosulfan II (Beta)	1.98	1.98		ug/L		100	70 - 130	1	20	
Endosulfan sulfate	1.98	2.16		ug/L		109	70 - 130	3	20	
Endrin	1.98	2.12		ug/L		107	70 - 130	6	20	
Endrin aldehyde	1.98	2.04		ug/L		103	70 - 130	0	20	
EPTC	1.98	2.09		ug/L		105	70 - 130	1	20	
Fluoranthene	1.98	2.22		ug/L		112	70 - 130	1	20	
Fluorene	1.98	2.08		ug/L		105	70 - 130	1	20	
gamma-Chlordane	1.98	2.30		ug/L		116	70 - 130	0	20	
Heptachlor	1.98	2.12		ug/L		107	70 - 130	5	20	
Heptachlor epoxide (isomer B)	1.98	2.29		ug/L		116	70 - 130	1	20	
Hexachlorobenzene	1.98	2.09		ug/L		105	70 - 130	3	20	
Hexachlorocyclopentadiene	1.98	2.02		ug/L		102	70 - 130	2	20	
Indeno[1,2,3-cd]pyrene	1.98	2.05		ug/L		104	70 - 130	2	20	
Isophorone	1.98	2.00		ug/L		101	70 - 130	1	20	
Lindane	1.98	1.98		ug/L		100	70 - 130	1	20	
Malathion	1.98	2.07		ug/L		105	70 - 130	3	20	
Methoxychlor	1.98	2.15		ug/L		108	70 - 130	2	20	
Metolachlor	1.98	2.18		ug/L		110	70 - 130	3	20	
Molinate	1.98	2.17		ug/L		109	70 - 130	0	20	

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCSD 380-47333/4-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene	1.98	2.06		ug/L		104	70 - 130	1	20
Parathion	1.98	2.36		ug/L		119	70 - 130	6	20
Pendimethalin (Penoxaline)	1.98	2.05		ug/L		103	70 - 130	2	20
Phenanthrene	1.98	1.99		ug/L		100	70 - 130	2	20
Propachlor	1.98	2.02		ug/L		102	70 - 130	2	20
Pyrene	1.98	2.26		ug/L		114	70 - 130	2	20
Simazine	1.98	2.44		ug/L		123	70 - 130	3	20
Terbacil	1.98	2.52		ug/L		127	70 - 130	8	20
Terbutylazine	1.98	2.41		ug/L		122	70 - 130	1	20
Thiobencarb	1.98	2.11		ug/L		107	70 - 130	1	20
trans-Nonachlor	1.98	2.46		ug/L		124	70 - 130	4	20
Trifluralin	1.98	1.89		ug/L		95	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	93		70 - 130
Perylene-d12	87		70 - 130
Triphenylphosphate	118		70 - 130

Lab Sample ID: MRL 380-47333/2-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0992	0.115		ug/L		116	50 - 150
2,4'-DDD	0.0992	0.129		ug/L		130	50 - 150
2,4'-DDE	0.0992	0.103		ug/L		104	50 - 150
2,4'-DDT	0.0992	0.0983	J	ug/L		99	50 - 150
2,4-Dinitrotoluene	0.0992	0.0800	J	ug/L		81	50 - 150
2,6-Dinitrotoluene	0.0992	0.0877	J	ug/L		88	50 - 150
2-Methylnaphthalene	0.0992	0.111		ug/L		111	50 - 150
4,4'-DDD	0.0992	0.0993		ug/L		100	50 - 150
4,4'-DDE	0.0992	0.0937	J	ug/L		94	50 - 150
4,4'-DDT	0.0992	0.129		ug/L		130	50 - 150
Acenaphthene	0.0992	0.102		ug/L		103	50 - 150
Acenaphthylene	0.0992	0.0872	J	ug/L		88	50 - 150
Acetochlor	0.0496	0.0425	J	ug/L		86	50 - 150
Alachlor	0.0496	0.0438	J	ug/L		88	50 - 150
alpha-BHC	0.0992	0.0953	J	ug/L		96	50 - 150
alpha-Chlordane	0.0248	<0.029		ug/L		102	50 - 150
Anthracene	0.0198	0.0190	J	ug/L		96	50 - 150
Atrazine	0.0496	0.0500		ug/L		101	50 - 150
Benz(a)anthracene	0.0496	0.0448	J	ug/L		90	50 - 150
Benzo[a]pyrene	0.0198	0.0157	J	ug/L		79	50 - 150
Benzo[b]fluoranthene	0.0198	0.0204		ug/L		103	50 - 150
Benzo[g,h,i]perylene	0.0496	0.0655		ug/L		132	50 - 150
Benzo[k]fluoranthene	0.0198	0.0212		ug/L		107	50 - 150
beta-BHC	0.0992	0.0963	J	ug/L		97	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.652		ug/L		109	50 - 150

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MRL 380-47333/2-A
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Bromacil	0.0992	0.126		ug/L		127	50 - 150
Butachlor	0.0496	0.0519		ug/L		105	50 - 150
Butylbenzylphthalate	0.149	0.153	J	ug/L		103	50 - 150
Chlorobenzilate	0.0992	0.118		ug/L		119	50 - 150
Chloroneb	0.0992	0.103		ug/L		103	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0992	0.120		ug/L		121	50 - 150
Chlorpyrifos	0.0496	0.0498	J	ug/L		100	50 - 150
Chrysene	0.0198	0.0217		ug/L		109	50 - 150
delta-BHC	0.0992	0.101		ug/L		102	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.351	J	ug/L		118	50 - 150
Dibenz(a,h)anthracene	0.0496	0.0668		ug/L		135	50 - 150
Diclorvos (DDVP)	0.0496	0.0455	J	ug/L		92	50 - 150
Dieldrin	0.0992	0.0952	J	ug/L		96	50 - 150
Diethylphthalate	0.149	0.188	J	ug/L		126	50 - 150
Dimethylphthalate	0.298	0.303	J	ug/L		102	50 - 150
Di-n-butyl phthalate	0.298	0.393	J	ug/L		132	49 - 243
Di-n-octyl phthalate	0.0992	0.106		ug/L		107	50 - 150
Endosulfan I (Alpha)	0.0992	0.0882	J	ug/L		89	50 - 150
Endosulfan II (Beta)	0.0992	0.0999		ug/L		101	50 - 150
Endosulfan sulfate	0.0992	0.0838	J	ug/L		84	50 - 150
Endrin	0.0992	0.110		ug/L		111	50 - 150
Endrin aldehyde	0.0992	<0.083		ug/L		77	50 - 150
EPTC	0.0992	0.105		ug/L		105	50 - 150
Fluoranthene	0.0496	0.0544	J	ug/L		110	50 - 150
Fluorene	0.0496	0.0515		ug/L		104	50 - 150
gamma-Chlordane	0.0248	0.0264	J	ug/L		106	50 - 150
Heptachlor	0.0397	0.0442		ug/L		111	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0481	J	ug/L		97	50 - 150
Hexachlorobenzene	0.0496	0.0482	J	ug/L		97	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0447	J	ug/L		90	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0666		ug/L		134	50 - 150
Isophorone	0.0992	0.102	J	ug/L		103	50 - 150
Lindane	0.0397	0.0359	J	ug/L		90	50 - 150
Malathion	0.0992	0.115		ug/L		116	50 - 150
Methoxychlor	0.0992	0.115		ug/L		116	50 - 150
Metolachlor	0.0496	0.0567		ug/L		114	50 - 150
Molinate	0.0992	0.107		ug/L		108	50 - 150
Naphthalene	0.0992	0.119	J	ug/L		120	50 - 150
Parathion	0.0992	0.126		ug/L		127	50 - 150
Pendimethalin (Penoxaline)	0.0992	0.121		ug/L		122	50 - 150
Phenanthrene	0.0198	0.0234	J	ug/L		118	50 - 150
Propachlor	0.0496	0.0780	^3+	ug/L		157	50 - 150
Pyrene	0.0496	0.0561		ug/L		113	50 - 150
Simazine	0.0496	0.0521		ug/L		105	50 - 150
Terbacil	0.0992	0.0996		ug/L		100	50 - 150
Terbutylazine	0.0992	0.105		ug/L		106	50 - 150
Thiobencarb	0.0992	0.116	J	ug/L		117	50 - 150
trans-Nonachlor	0.0248	0.0278	J	ug/L		112	50 - 150
Trifluralin	0.0992	0.120		ug/L		121	50 - 150

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QC Sample Results

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

Job ID: 380-54555-1

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

<i>Surrogate</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
2-Nitro- <i>m</i> -xylene	94		70 - 130
Perylene- <i>d</i> 12	83		70 - 130
Triphenylphosphate	105		70 - 130

Lab Sample ID: 380-54276-T-1-A MS
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.96	1.94		ug/L		99	70 - 130
2,4'-DDD	<0.098		1.96	2.07		ug/L		106	70 - 130
2,4'-DDE	<0.098		1.96	1.97		ug/L		101	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	2.15		ug/L		110	70 - 130
2-Methylnaphthalene	<0.098		1.96	1.91		ug/L		98	70 - 130
4,4'-DDD	<0.098		1.96	2.15		ug/L		110	70 - 130
4,4'-DDE	<0.098		1.96	2.23		ug/L		114	70 - 130
4,4'-DDT	<0.098		1.96	2.08		ug/L		106	70 - 130
Acenaphthene	<0.098		1.96	1.88		ug/L		96	70 - 130
Acenaphthylene	<0.098		1.96	1.96		ug/L		100	70 - 130
Acetochlor	<0.098		1.96	2.01		ug/L		103	70 - 130
Alachlor	<0.049		1.96	1.94		ug/L		99	70 - 130
alpha-BHC	<0.098		1.96	1.95		ug/L		100	70 - 130
alpha-Chlordane	<0.049		1.96	2.29		ug/L		117	70 - 130
Anthracene	<0.020	F1	1.96	1.06	F1	ug/L		54	70 - 130
Atrazine	<0.049		1.96	2.39		ug/L		122	70 - 130
Benz(a)anthracene	<0.049		1.96	1.98		ug/L		101	70 - 130
Benzo[a]pyrene	<0.020		1.96	1.54		ug/L		79	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.21		ug/L		113	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	1.81		ug/L		92	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.33		ug/L		119	70 - 130
beta-BHC	<0.098		1.96	1.99		ug/L		102	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.74		ug/L		89	70 - 130
Bromacil	<0.098		1.96	2.22		ug/L		113	70 - 130
Butachlor	<0.049		1.96	2.15		ug/L		110	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.24		ug/L		115	70 - 130
Chlorobenzilate	<0.098		1.96	1.76		ug/L		90	70 - 130
Chloroneb	<0.098		1.96	2.04		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.96	1.91		ug/L		98	70 - 130
Chlorpyrifos	<0.049		1.96	2.13		ug/L		109	70 - 130
Chrysene	<0.020		1.96	2.09		ug/L		107	70 - 130
delta-BHC	<0.098		1.96	1.77		ug/L		91	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.96	2.00		ug/L		99	70 - 130
Dibenz(a,h)anthracene	<0.049		1.96	2.17		ug/L		111	70 - 130
Diclorvos (DDVP)	<0.049		1.96	2.01		ug/L		103	70 - 130
Dieldrin	<0.20		1.96	1.90		ug/L		97	70 - 130
Diethylphthalate	<0.49		1.96	2.06		ug/L		106	70 - 130
Dimethylphthalate	<0.49		1.96	2.09		ug/L		107	70 - 130
Di-n-butyl phthalate	<0.98		3.91	3.99		ug/L		102	70 - 130
Di-n-octyl phthalate	<0.098		1.96	1.62		ug/L		83	70 - 130

QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: 380-54276-T-1-A MS
Matrix: Water
Analysis Batch: 47532

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier					Limits
Endosulfan I (Alpha)	<0.098		1.96	1.78		ug/L		91	70 - 130
Endosulfan II (Beta)	<0.098		1.96	1.93		ug/L		99	70 - 130
Endosulfan sulfate	<0.098		1.96	2.09		ug/L		107	70 - 130
Endrin	<0.098		1.96	2.01		ug/L		103	70 - 130
Endrin aldehyde	<0.098		1.96	1.79		ug/L		92	70 - 130
EPTC	<0.098		1.96	2.10		ug/L		107	70 - 130
Fluoranthene	<0.098		1.96	2.14		ug/L		110	70 - 130
Fluorene	<0.049		1.96	2.09		ug/L		107	70 - 130
gamma-Chlordane	<0.049		1.96	2.31		ug/L		118	70 - 130
Heptachlor	<0.039		1.96	2.06		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.96	2.21		ug/L		113	70 - 130
Hexachlorobenzene	<0.049		1.96	2.16		ug/L		110	70 - 130
Hexachlorocyclopentadiene	<0.049		1.96	1.94		ug/L		99	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.96	2.06		ug/L		106	70 - 130
Isophorone	<0.49		1.96	1.92		ug/L		98	70 - 130
Lindane	<0.039		1.96	1.96		ug/L		100	70 - 130
Malathion	<0.098		1.96	2.04		ug/L		104	70 - 130
Methoxychlor	<0.098		1.96	2.13		ug/L		109	70 - 130
Metolachlor	<0.049		1.96	2.13		ug/L		109	70 - 130
Molinate	<0.098		1.96	2.17		ug/L		111	70 - 130
Naphthalene	<0.29		1.96	1.96		ug/L		100	70 - 130
Parathion	<0.098		1.96	2.23		ug/L		114	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.96	2.08		ug/L		106	70 - 130
Phenanthrene	<0.039		1.96	1.96		ug/L		100	70 - 130
Propachlor	<0.049	^3+	1.96	1.99		ug/L		102	70 - 130
Pyrene	<0.049		1.96	2.19		ug/L		112	70 - 130
Simazine	<0.049		1.96	2.50		ug/L		128	70 - 130
Terbacil	<0.098		1.96	2.47		ug/L		126	70 - 130
Terbutylazine	<0.098		1.96	2.40		ug/L		123	70 - 130
Thiobencarb	<0.20		1.96	2.06		ug/L		105	70 - 130
trans-Nonachlor	<0.049		1.96	2.43		ug/L		124	70 - 130
Trifluralin	<0.098		1.96	1.93		ug/L		99	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	93		70 - 130
Perylene-d12	86		70 - 130
Triphenylphosphate	113		70 - 130

Lab Sample ID: 380-54555-1 DU
Matrix: Drinking Water
Analysis Batch: 47532

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 47333

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

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: 380-54555-1 DU
Matrix: Drinking Water
Analysis Batch: 47532

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 47333

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

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: 380-54555-1 DU
Matrix: Drinking Water
Analysis Batch: 47532

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 47333

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.099		<0.098		ug/L		NC	20
Methoxychlor	<0.099		<0.098		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.099		<0.098		ug/L		NC	20
Naphthalene	<0.30		<0.29		ug/L		NC	20
Parathion	<0.099		<0.098		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.098		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049	^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	<0.099		<0.098		ug/L		NC	20
Terbutylazine	<0.099		<0.098		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.099		<0.098		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	91		70 - 130
Perylene-d12	87		70 - 130
Triphenylphosphate	118		70 - 130

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

Lab Sample ID: MBL 380-49177/19-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49177

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorobutanesulfonic acid (PFBS)	0.518	J	2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorohexanesulfonic acid (PFHxS)	0.527	J	2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MBL 380-49177/19-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49177

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		07/27/23 16:35	07/30/23 03:40	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	69		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C6 PFDA	84		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C5 PFHxA	78		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C4 PFHpA	80		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C8 PFOA	83		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C9 PFNA	88		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C7 PFUnA	88		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C2 PFDoA	93		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C4 PFBA	85		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C5 PFPeA	89		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C3 PFBS	91		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C3 PFHxS	108		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C8 PFOS	95		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C2-4:2-FTS	102		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C2-6:2-FTS	99		50 - 200	07/27/23 16:35	07/30/23 03:40	1
13C2-8:2-FTS	97		50 - 200	07/27/23 16:35	07/30/23 03:40	1

Lab Sample ID: LCS 380-49177/21-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	131		ng/L		109	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	129		ng/L		107	70 - 130

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCS 380-49177/21-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	134		ng/L		111	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	131		ng/L		109	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	128		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	120	133		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	120	127		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	130		ng/L		108	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	127		ng/L		106	70 - 130
Perfluorohexanoic acid (PFHxA)	120	126		ng/L		105	70 - 130
Perfluorononanoic acid (PFNA)	120	131		ng/L		109	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	128		ng/L		106	70 - 130
Perfluorooctanoic acid (PFOA)	120	128		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	131		ng/L		109	70 - 130
Perfluorobutanoic acid (PFBA)	120	128		ng/L		106	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	133		ng/L		111	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	137		ng/L		114	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	136		ng/L		113	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	125		ng/L		104	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	124		ng/L		104	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	126		ng/L		105	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	126		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	120	134		ng/L		111	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	129		ng/L		107	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	111		ng/L		92	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	80		50 - 200
13C6 PFDA	81		50 - 200
13C5 PFHxA	79		50 - 200
13C4 PFHpA	78		50 - 200
13C8 PFOA	81		50 - 200
13C9 PFNA	82		50 - 200
13C7 PFUnA	85		50 - 200
13C2 PFDoA	85		50 - 200
13C4 PFBA	83		50 - 200
13C5 PFPeA	89		50 - 200
13C3 PFBS	83		50 - 200
13C3 PFHxS	108		50 - 200

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCS 380-49177/21-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49177

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C8 PFOS	86		50 - 200
13C2-4:2-FTS	85		50 - 200
13C2-6:2-FTS	89		50 - 200
13C2-8:2-FTS	85		50 - 200

Lab Sample ID: LCSD 380-49177/22-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	112		ng/L		93	70 - 130	16	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	109		ng/L		91	70 - 130	17	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	111		ng/L		92	70 - 130	18	30	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	120		ng/L		100	70 - 130	9	30	
Perfluorobutanesulfonic acid (PFBS)	120	112		ng/L		93	70 - 130	14	30	
Perfluorodecanoic acid (PFDA)	120	115		ng/L		95	70 - 130	15	30	
Perfluorododecanoic acid (PFDoA)	120	114		ng/L		95	70 - 130	11	30	
Perfluoroheptanoic acid (PFHpA)	120	110		ng/L		91	70 - 130	17	30	
Perfluorohexanesulfonic acid (PFHxS)	120	107		ng/L		89	70 - 130	18	30	
Perfluorohexanoic acid (PFHxA)	120	110		ng/L		92	70 - 130	14	30	
Perfluorononanoic acid (PFNA)	120	115		ng/L		96	70 - 130	13	30	
Perfluorooctanesulfonic acid (PFOS)	120	111		ng/L		93	70 - 130	14	30	
Perfluorooctanoic acid (PFOA)	120	113		ng/L		94	70 - 130	13	30	
Perfluoroundecanoic acid (PFUnA)	120	121		ng/L		100	70 - 130	8	30	
Perfluorobutanoic acid (PFBA)	120	114		ng/L		95	70 - 130	11	30	
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	116		ng/L		96	70 - 130	14	30	
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	118		ng/L		98	70 - 130	14	30	
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	118		ng/L		99	70 - 130	14	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	101		ng/L		84	70 - 130	22	30	
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	120	111		ng/L		92	70 - 130	12	30	
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	108		ng/L		90	70 - 130	15	30	
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	105		ng/L		87	70 - 130	18	30	
Perfluoropentanoic acid (PFPeA)	120	113		ng/L		94	70 - 130	16	30	
Perfluoroheptanesulfonic acid (PFHpS)	120	111		ng/L		92	70 - 130	15	30	

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: LCSD 380-49177/22-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)	120	94.5		ng/L		79	70 - 130	16	30
LCSD LCSD									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C3 HFPO-DA	94		50 - 200						
13C6 PFDA	95		50 - 200						
13C5 PFHxA	97		50 - 200						
13C4 PFHpA	98		50 - 200						
13C8 PFOA	93		50 - 200						
13C9 PFNA	94		50 - 200						
13C7 PFUnA	95		50 - 200						
13C2 PFDoA	95		50 - 200						
13C4 PFBA	91		50 - 200						
13C5 PFPeA	99		50 - 200						
13C3 PFBS	102		50 - 200						
13C3 PFHxS	127		50 - 200						
13C8 PFOS	97		50 - 200						
13C2-4:2-FTS	95		50 - 200						
13C2-6:2-FTS	93		50 - 200						
13C2-8:2-FTS	92		50 - 200						

Lab Sample ID: MRL 380-49177/20-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	2.05	J	ng/L		102	50 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.90	J	ng/L		95	50 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.09	J	ng/L		104	50 - 150		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.23	J	ng/L		111	50 - 150		
Perfluorobutanesulfonic acid (PFBS)	2.00	2.09	J	ng/L		104	50 - 150		
Perfluorodecanoic acid (PFDA)	2.00	2.07	J	ng/L		103	50 - 150		
Perfluorododecanoic acid (PFDoA)	2.00	2.09	J	ng/L		104	50 - 150		
Perfluoroheptanoic acid (PFHpA)	2.00	2.11	J	ng/L		105	50 - 150		
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.87	J	ng/L		143	50 - 150		
Perfluorohexanoic acid (PFHxA)	2.00	2.19	J	ng/L		109	50 - 150		
Perfluorononanoic acid (PFNA)	2.00	2.02	J	ng/L		101	50 - 150		
Perfluorooctanesulfonic acid (PFOS)	2.00	2.14	J	ng/L		107	50 - 150		
Perfluorooctanoic acid (PFOA)	2.00	2.06	J	ng/L		103	50 - 150		
Perfluoroundecanoic acid (PFUnA)	2.00	1.93	J	ng/L		96	50 - 150		
Perfluorobutanoic acid (PFBA)	2.00	2.19	J	ng/L		109	50 - 150		

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MRL 380-49177/20-A
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	1.90	J	ng/L		95	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.11	J	ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.28	J	ng/L		114	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.05	J	ng/L		102	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.83	J	ng/L		91	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.99	J	ng/L		99	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.57	J	ng/L		78	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	75		50 - 200
13C6 PFDA	83		50 - 200
13C5 PFHxA	83		50 - 200
13C4 PFHpA	86		50 - 200
13C8 PFOA	87		50 - 200
13C9 PFNA	87		50 - 200
13C7 PFUnA	88		50 - 200
13C2 PFDoA	91		50 - 200
13C4 PFBA	87		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	127		50 - 200
13C8 PFOS	94		50 - 200
13C2-4:2-FTS	112		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	94		50 - 200

Lab Sample ID: 380-55838-B-1-A LMS
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.13		ng/L		106	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.05		ng/L		102	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.28		ng/L		113	50 - 150

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QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: 380-55838-B-1-A LMS
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49177

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide	<2.0		2.01	2.38		ng/L		118	50 - 150
Dimer Acid (HFPO-DA/GenX)									
Perfluorobutanesulfonic acid (PFBS)	2.6		2.01	5.09		ng/L		124	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.22		ng/L		110	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.01		ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.2		2.01	4.44		ng/L		112	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	6.7		2.01	8.39		ng/L		85	50 - 150
Perfluorohexanoic acid (PFHxA)	10		2.01	12.9	4	ng/L		142	50 - 150
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.19		ng/L		109	50 - 150
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	3.64		ng/L		93	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	3.87		ng/L		128	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.25		ng/L		112	50 - 150
Perfluorobutanoic acid (PFBA)	6.6		2.01	8.63		ng/L		101	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.20		ng/L		109	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.60		ng/L		129	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.7		2.01	7.26		ng/L		126	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	2.32		ng/L		115	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	2.07		ng/L		103	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	1.92	J	ng/L		95	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.21		ng/L		110	50 - 150
Perfluoropentanoic acid (PFPeA)	11		2.01	12.8	4	ng/L		82	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.31		ng/L		115	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.87		ng/L		82	50 - 150

Isotope Dilution	LMS LMS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	77		50 - 200
13C6 PFDA	87		50 - 200
13C5 PFHxA	87		50 - 200
13C4 PFHpA	85		50 - 200
13C8 PFOA	92		50 - 200
13C9 PFNA	90		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	98		50 - 200
13C4 PFBA	93		50 - 200
13C5 PFPeA	97		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	124		50 - 200
13C8 PFOS	98		50 - 200

QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: 380-55838-B-1-A LMS
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 49177

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>LMS LMS Qualifier</i>	<i>Limits</i>
13C2-4:2-FTS	110		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	99		50 - 200

Lab Sample ID: 380-55838-C-1-A LMSD
Matrix: Water
Analysis Batch: 49484

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 49177

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>LMSD Result</i>	<i>LMSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.01		ng/L		100	50 - 150	6	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	1.99	J	ng/L		99	50 - 150	3	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	2.08		ng/L		103	50 - 150	9	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.43		ng/L		121	50 - 150	2	50
Perfluorobutanesulfonic acid (PFBS)	2.6		2.01	4.94		ng/L		116	50 - 150	3	50
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.21		ng/L		110	50 - 150	0	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.14		ng/L		106	50 - 150	6	50
Perfluoroheptanoic acid (PFHpA)	2.2		2.01	4.26		ng/L		103	50 - 150	4	50
Perfluorohexanesulfonic acid (PFHxS)	6.7		2.01	8.93		ng/L		111	50 - 150	6	50
Perfluorohexanoic acid (PFHxA)	10		2.01	12.3	4	ng/L		113	50 - 150	5	50
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.27		ng/L		113	50 - 150	4	50
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	4.03		ng/L		112	50 - 150	10	50
Perfluorooctanoic acid (PFOA)	<2.0		2.01	4.16		ng/L		142	50 - 150	7	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.24		ng/L		112	50 - 150	0	50
Perfluorobutanoic acid (PFBA)	6.6		2.01	8.85		ng/L		112	50 - 150	3	50
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.16		ng/L		107	50 - 150	2	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.39		ng/L		119	50 - 150	8	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.7		2.01	6.88		ng/L		107	50 - 150	5	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.91	J	ng/L		95	50 - 150	20	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.01	1.99	J	ng/L		99	50 - 150	4	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.08		ng/L		104	50 - 150	8	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	2.21		ng/L		110	50 - 150	0	50
Perfluoropentanoic acid (PFPeA)	11		2.01	13.1	4	ng/L		95	50 - 150	2	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.45		ng/L		122	50 - 150	6	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	2.89		ng/L		83	50 - 150	1	50

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QC Sample Results

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

Job ID: 380-54555-1

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

Isotope Dilution	LMSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	74		50 - 200
13C6 PFDA	82		50 - 200
13C5 PFHxA	82		50 - 200
13C4 PFHpA	90		50 - 200
13C8 PFOA	84		50 - 200
13C9 PFNA	85		50 - 200
13C7 PFUnA	83		50 - 200
13C2 PFDoA	88		50 - 200
13C4 PFBA	91		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	91		50 - 200
13C3 PFHxS	123		50 - 200
13C8 PFOS	90		50 - 200
13C2-4:2-FTS	105		50 - 200
13C2-6:2-FTS	100		50 - 200
13C2-8:2-FTS	90		50 - 200

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

Lab Sample ID: MBL 380-47573/24-A
Matrix: Water
Analysis Batch: 48039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47573

Analyte	MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.58		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.42		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		07/17/23 07:08	07/20/23 09:55	1
Surrogate	MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	112		70 - 130			07/17/23 07:08	07/20/23 09:55	1
13C2 PFHxA	121		70 - 130			07/17/23 07:08	07/20/23 09:55	1
13C2 PFDA	118		70 - 130			07/17/23 07:08	07/20/23 09:55	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MBL 380-47573/24-A
Matrix: Water
Analysis Batch: 48039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47573

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3-GenX	118		70 - 130	07/17/23 07:08	07/20/23 09:55	1

Lab Sample ID: LCSD 380-47573/26-A
Matrix: Water
Analysis Batch: 48039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47573

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	52.9		ng/L		106	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	48.5		ng/L		104	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	50.2		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	48.8		ng/L		97	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	48.0		ng/L		96	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	53.3		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	48.8		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	50.1		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	52.3		ng/L		104	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	48.0		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	43.8		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	51.1		ng/L		102	70 - 130
Perfluorononanoic acid (PFNA)	50.1	53.5		ng/L		107	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	54.2		ng/L		108	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	49.5		ng/L		99	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	46.8	48.3		ng/L		103	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	44.7		ng/L		94	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	48.1		ng/L		102	70 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	111		70 - 130
13C2 PFHxA	124		70 - 130
13C2 PFDA	123		70 - 130
13C3-GenX	126		70 - 130

QC Sample Results

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

Job ID: 380-54555-1

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

Lab Sample ID: MRL 380-47573/23-A
Matrix: Water
Analysis Batch: 48039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47573

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.24	J	ng/L		112	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.85	1.94	J	ng/L		105	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.00	J	ng/L		100	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.03	J	ng/L		101	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.33	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.00	J	ng/L		100	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.35	J	ng/L		118	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.11	J	ng/L		105	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.96	J	ng/L		108	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.90	J	ng/L		108	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.38	J	ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.25	J	ng/L		113	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.40	J	ng/L		120	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.99	J	ng/L		100	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	1.87	1.93	J	ng/L		103	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.81	J	ng/L		96	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.00	J	ng/L		106	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
d5-NEtFOSAA	112		70 - 130
13C2 PFHxA	124		70 - 130
13C2 PFDA	115		70 - 130
13C3-GenX	121		70 - 130

Lab Sample ID: 380-54555-5 MS
Matrix: Drinking Water
Analysis Batch: 48039

Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)
Prep Type: Total/NA
Prep Batch: 47573

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	28.0		ng/L		112	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		23.2	25.7		ng/L		110	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	28.8		ng/L		115	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	27.5		ng/L		110	70 - 130

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-54555-1

GC/MS Semi VOA

Prep Batch: 47333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
380-54555-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	
MB 380-47333/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-47333/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-47333/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-47333/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-54276-T-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-54555-1 DU	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	

Analysis Batch: 47532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	47333
380-54555-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	525.2	47333
MB 380-47333/1-A	Method Blank	Total/NA	Water	525.2	47333
LCS 380-47333/3-A	Lab Control Sample	Total/NA	Water	525.2	47333
LCSD 380-47333/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	47333
MRL 380-47333/2-A	Lab Control Sample	Total/NA	Water	525.2	47333
380-54276-T-1-A MS	Matrix Spike	Total/NA	Water	525.2	47333
380-54555-1 DU	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	47333

LCMS

Prep Batch: 47573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	537.1 DW	
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1 DW	
380-54555-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1 DW	
MBL 380-47573/24-A	Method Blank	Total/NA	Water	537.1 DW	
LCSD 380-47573/26-A	Lab Control Sample	Total/NA	Water	537.1 DW	
MRL 380-47573/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-54555-5 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	
380-54555-5 MSD	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 48039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	537.1	47573
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	537.1	47573
380-54555-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	47573
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	537.1	47573
MBL 380-47573/24-A	Method Blank	Total/NA	Water	537.1	47573
LCSD 380-47573/26-A	Lab Control Sample	Total/NA	Water	537.1	47573
MRL 380-47573/23-A	Lab Control Sample	Total/NA	Water	537.1	47573
380-54555-5 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	47573
380-54555-5 MSD	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	537.1	47573

Prep Batch: 49177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	533	
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	
380-54555-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	

QC Association Summary

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

Job ID: 380-54555-1

LCMS (Continued)

Prep Batch: 49177 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	
MBL 380-49177/19-A	Method Blank	Total/NA	Water	533	
LCS 380-49177/21-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-49177/22-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-49177/20-A	Lab Control Sample	Total/NA	Water	533	
380-55838-B-1-A LMS	Matrix Spike	Total/NA	Water	533	
380-55838-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

Analysis Batch: 49484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-54555-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TPC	Total/NA	Water	533	49177
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TF	Total/NA	Water	533	49177
380-54555-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	533	49177
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP40C	Total/NA	Drinking Water	533	49177
MBL 380-49177/19-A	Method Blank	Total/NA	Water	533	49177
LCS 380-49177/21-A	Lab Control Sample	Total/NA	Water	533	49177
LCSD 380-49177/22-A	Lab Control Sample Dup	Total/NA	Water	533	49177
MRL 380-49177/20-A	Lab Control Sample	Total/NA	Water	533	49177
380-55838-B-1-A LMS	Matrix Spike	Total/NA	Water	533	49177
380-55838-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	49177



Lab Chronicle

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

Job ID: 380-54555-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-1

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			47333	OTM3	EA POM	07/14/23 12:40
Total/NA	Analysis	525.2		1	47532	UPAC	EA POM	07/16/23 17:00

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-2

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			47333	OTM3	EA POM	07/14/23 12:40
Total/NA	Analysis	525.2		1	47532	UPAC	EA POM	07/16/23 21:59

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-3

Date Collected: 07/10/23 09:00

Matrix: Water

Date Received: 07/12/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			49177	EE6W	EA POM	07/27/23 16:35
Total/NA	Analysis	533		1	49484	UKDT	EA POM	07/30/23 05:08
Total/NA	Prep	537.1 DW			47573	US1B	EA POM	07/17/23 07:08
Total/NA	Analysis	537.1		1	48039	UKDT	EA POM	07/20/23 12:19

**Client Sample ID: FB: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-4

Date Collected: 07/10/23 09:30

Matrix: Water

Date Received: 07/12/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			49177	EE6W	EA POM	07/27/23 16:35
Total/NA	Analysis	533		1	49484	UKDT	EA POM	07/30/23 05:17
Total/NA	Prep	537.1 DW			47573	US1B	EA POM	07/17/23 07:08
Total/NA	Analysis	537.1		1	48039	UKDT	EA POM	07/20/23 12:38

**Client Sample ID: AIEA GULCH WELLS PUMP 2
(331-202-TP072)**

Lab Sample ID: 380-54555-5

Date Collected: 07/10/23 09:00

Matrix: Drinking Water

Date Received: 07/12/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			49177	EE6W	EA POM	07/27/23 16:35
Total/NA	Analysis	533		1	49484	UKDT	EA POM	07/30/23 05:27
Total/NA	Prep	537.1 DW			47573	US1B	EA POM	07/17/23 07:08
Total/NA	Analysis	537.1		1	48039	UKDT	EA POM	07/20/23 10:34

Eurofins Eaton Analytical Pomona

Lab Chronicle

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

Job ID: 380-54555-1

**Client Sample ID: AIEA WELLS PUMPS 1&2 (260)
(331-203-TP400)**

Lab Sample ID: 380-54555-6

Date Collected: 07/10/23 09:30

Matrix: Drinking Water

Date Received: 07/12/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			49177	EE6W	EA POM	07/27/23 16:35
Total/NA	Analysis	533		1	49484	UKDT	EA POM	07/30/23 05:36
Total/NA	Prep	537.1 DW			47573	US1B	EA POM	07/17/23 07:08
Total/NA	Analysis	537.1		1	48039	UKDT	EA POM	07/20/23 12:48

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: 380-54555-1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-54555-1

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: 380-54555-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
533	533	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
533	533	Water	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)
533	533	Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)
533	533	Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Water	Perfluoro-4-methoxybutanoic acid (PFMBA)
533	533	Water	Perfluorobutanoic acid (PFBA)
533	533	Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Water	Perfluoropentanoic acid (PFPeA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)
537.1	537.1 DW	Water	11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

Method Summary

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

Job ID: 380-54555-1

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: 380-54555-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-54555-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	07/10/23 09:00	07/12/23 10:00	HI0000331
380-54555-2	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	07/10/23 09:30	07/12/23 10:00	HI0000331
380-54555-3	FB: AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	07/10/23 09:00	07/12/23 10:00	
380-54555-4	FB: AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Water	07/10/23 09:30	07/12/23 10:00	
380-54555-5	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	07/10/23 09:00	07/12/23 10:00	
380-54555-6	AIEA WELLS PUMPS 1&2 (260) (331-203-TP400)	Drinking Water	07/10/23 09:30	07/12/23 10:00	

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-54555-1

Login Number: 54555
List Number: 1
Creator: Ngo, Theodore

List Source: Eurofins Eaton Analytical Pomona

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