

# ANALYTICAL REPORT

## PREPARED FOR

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Honolulu, Hawaii 96843

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## JOB DESCRIPTION

RED-HILL  
RUSH Weekly Red Hill

## JOB NUMBER

380-61968-1

# Eurofins Eaton Analytical Pomona

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Authorized for release by  
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# Definitions/Glossary

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

Job ID: 380-61968-1

## Qualifiers

### GC/MS Semi VOA

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

### GC/MS Semi VOA TICs

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

### LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

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

# Case Narrative

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

Job ID: 380-61968-1

**Job ID: 380-61968-1**

**Laboratory: Eurofins Eaton Analytical Pomona**

## Narrative

### Job Narrative 380-61968-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 9/7/2023 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 2.4°C

### GC/MS Semi VOA

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

### PFAS

Method 533: Analyte Perfluorobutanoic acid (PFBA) detected above MRL in preparation batch 380-55421 and analytical batch 380-55910 Method blank. This has also caused MRL check to fail biased high. No back up volume available for re-extraction for sample FB: AIEA WELLS PUMPS 1&2 (260) (380-61968-7) and FB: AIEA GULCH WELLS PUMP 2 (380-61968-8). Results are not acceptable per method. 533 data excluded due to this QC failure, 537.1 data was reported as there were no noted QC issues.

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

# Detection Summary

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61968-1**

No Detections.

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

**Lab Sample ID: 380-61968-2**

No Detections.

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

**Lab Sample ID: 380-61968-3**

No Detections.

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-4**

No Detections.

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

**Lab Sample ID: 380-61968-7**

No Detections.

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-8**

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61968-1**

Date Collected: 09/05/23 11:13

Matrix: Drinking Water

Date Received: 09/07/23 10:40

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
2,4'-DDD	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
2,4'-DDE	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
2,4'-DDT	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
2-Methylnaphthalene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
4,4'-DDD	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
4,4'-DDE	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
4,4'-DDT	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Acenaphthene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Acenaphthylene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Acetochlor	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Alachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
alpha-BHC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
alpha-Chlordane	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Anthracene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:24	1
Atrazine	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Benzo[a]pyrene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:24	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:24	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:24	1
beta-BHC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		09/07/23 20:06	09/08/23 19:24	1
Bromacil	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Butachlor	<0.049	^3+	0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:24	1
Chlorobenzilate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Chloroneb	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Chlorothalonil (Draconil, Bravo)	<0.097	^3+	0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Chlorpyrifos	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Chrysene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:24	1
delta-BHC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Di(2-ethylhexyl)adipate	<0.58	^3+	0.58	ug/L		09/07/23 20:06	09/08/23 19:24	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Dieldrin	<0.19		0.19	ug/L		09/07/23 20:06	09/08/23 19:24	1
Diethylphthalate	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:24	1
Dimethylphthalate	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:24	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		09/07/23 20:06	09/08/23 19:24	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Endosulfan sulfate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Endrin	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Endrin aldehyde	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
EPTC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Fluoranthene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1

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# Client Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61968-1**

**Date Collected: 09/05/23 11:13**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
gamma-Chlordane	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Heptachlor	<0.039		0.039	ug/L		09/07/23 20:06	09/08/23 19:24	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Isophorone	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:24	1
Lindane	<0.039		0.039	ug/L		09/07/23 20:06	09/08/23 19:24	1
Malathion	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Methoxychlor	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Metolachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Molinate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Naphthalene	<0.29		0.29	ug/L		09/07/23 20:06	09/08/23 19:24	1
Parathion	<0.097	*+	0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Phenanthrene	<0.039		0.039	ug/L		09/07/23 20:06	09/08/23 19:24	1
Propachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Pyrene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Simazine	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Terbacil	<0.097	^3+	0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Terbutylazine	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1
Thiobencarb	<0.19		0.19	ug/L		09/07/23 20:06	09/08/23 19:24	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		09/07/23 20:06	09/08/23 19:24	1
trans-Nonachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:24	1
Trifluralin	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:24	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	09/07/23 20:06	09/08/23 19:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	09/07/23 20:06	09/08/23 19:24	1
Perylene-d12	101		70 - 130	09/07/23 20:06	09/08/23 19:24	1
Triphenylphosphate	108		70 - 130	09/07/23 20:06	09/08/23 19:24	1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-2**

**Date Collected: 09/05/23 10:27**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
2,4'-DDD	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
2,4'-DDE	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
2,4'-DDT	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
2,4-Dinitrotoluene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
2,6-Dinitrotoluene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
2-Methylnaphthalene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
4,4'-DDD	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
4,4'-DDE	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1

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# Client Sample Results

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

Job ID: 380-61968-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-2**

Date Collected: 09/05/23 10:27

Matrix: Drinking Water

Date Received: 09/07/23 10:40

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Acenaphthene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Acenaphthylene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Acetochlor	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Alachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
alpha-BHC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
alpha-Chlordane	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Anthracene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:44	1
Atrazine	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Benzo[a]pyrene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:44	1
Benzo[b]fluoranthene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:44	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Benzo[k]fluoranthene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:44	1
beta-BHC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Bis(2-ethylhexyl) phthalate	<0.58		0.58	ug/L		09/07/23 20:06	09/08/23 19:44	1
Bromacil	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Butachlor	<0.049	^3+	0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:44	1
Chlorobenzilate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Chloroneb	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Chlorothalonil (Draconil, Bravo)	<0.097	^3+	0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Chlorpyrifos	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Chrysene	<0.019		0.019	ug/L		09/07/23 20:06	09/08/23 19:44	1
delta-BHC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Di(2-ethylhexyl)adipate	<0.58	^3+	0.58	ug/L		09/07/23 20:06	09/08/23 19:44	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Dieldrin	<0.19		0.19	ug/L		09/07/23 20:06	09/08/23 19:44	1
Diethylphthalate	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:44	1
Dimethylphthalate	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:44	1
Di-n-butyl phthalate	<0.97		0.97	ug/L		09/07/23 20:06	09/08/23 19:44	1
Di-n-octyl phthalate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Endosulfan I (Alpha)	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Endosulfan II (Beta)	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Endosulfan sulfate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Endrin	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Endrin aldehyde	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
EPTC	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Fluoranthene	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Fluorene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
gamma-Chlordane	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Heptachlor	<0.039		0.039	ug/L		09/07/23 20:06	09/08/23 19:44	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Isophorone	<0.49		0.49	ug/L		09/07/23 20:06	09/08/23 19:44	1
Lindane	<0.039		0.039	ug/L		09/07/23 20:06	09/08/23 19:44	1

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# Client Sample Results

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

Job ID: 380-61968-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-2**

Date Collected: 09/05/23 10:27

Matrix: Drinking Water

Date Received: 09/07/23 10:40

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Malathion	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Methoxychlor	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Metolachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Molinate	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Naphthalene	<0.29		0.29	ug/L		09/07/23 20:06	09/08/23 19:44	1
Parathion	<0.097	*+	0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Pendimethalin (Penoxaline)	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Phenanthrene	<0.039		0.039	ug/L		09/07/23 20:06	09/08/23 19:44	1
Propachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Pyrene	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Simazine	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Terbacil	<0.097	^3+	0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Terbutylazine	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1
Thiobencarb	<0.19		0.19	ug/L		09/07/23 20:06	09/08/23 19:44	1
Total Permethrin (mixed isomers)	<0.19		0.19	ug/L		09/07/23 20:06	09/08/23 19:44	1
trans-Nonachlor	<0.049		0.049	ug/L		09/07/23 20:06	09/08/23 19:44	1
Trifluralin	<0.097		0.097	ug/L		09/07/23 20:06	09/08/23 19:44	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	09/07/23 20:06	09/08/23 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	09/07/23 20:06	09/08/23 19:44	1
Perylene-d12	100		70 - 130	09/07/23 20:06	09/08/23 19:44	1
Triphenylphosphate	108		70 - 130	09/07/23 20:06	09/08/23 19:44	1

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

**Lab Sample ID: 380-61968-3**

Date Collected: 09/05/23 11:13

Matrix: Drinking Water

Date Received: 09/07/23 10:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1

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# Client Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61968-3**

**Date Collected: 09/05/23 11:13**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

**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		09/21/23 14:26	09/24/23 14:09	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C6 PFDA	98		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C5 PFHxA	93		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C4 PFHpA	91		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C8 PFOA	98		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C9 PFNA	100		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C7 PFUnA	96		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C2 PFDoA	97		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C4 PFBA	99		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C5 PFPeA	101		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C3 PFBS	98		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C3 PFHxS	125		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C8 PFOS	101		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C2-4:2-FTS	121		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C2-6:2-FTS	113		50 - 200	09/21/23 14:26	09/24/23 14:09	1
13C2-8:2-FTS	112		50 - 200	09/21/23 14:26	09/24/23 14:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1

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# Client Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61968-3**

**Date Collected: 09/05/23 11:13**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 02:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEFOSAA	88		70 - 130			09/14/23 09:11	09/15/23 02:53	1
13C2 PFHxA	116		70 - 130			09/14/23 09:11	09/15/23 02:53	1
13C2 PFDA	95		70 - 130			09/14/23 09:11	09/15/23 02:53	1
13C3-GenX	115		70 - 130			09/14/23 09:11	09/15/23 02:53	1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-4**

**Date Collected: 09/05/23 10:27**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-61968-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-4**

**Date Collected: 09/05/23 10:27**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		09/21/23 14:26	09/24/23 14:19	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	74		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C6 PFDA	93		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C5 PFHxA	88		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C4 PFHpA	93		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C8 PFOA	99		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C9 PFNA	95		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C7 PFUnA	92		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C2 PFDoA	93		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C4 PFBA	96		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C5 PFPeA	101		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C3 PFBS	96		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C3 PFHxS	123		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C8 PFOS	96		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C2-4:2-FTS	119		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C2-6:2-FTS	113		50 - 200			09/21/23 14:26	09/24/23 14:19	1
13C2-8:2-FTS	109		50 - 200			09/21/23 14:26	09/24/23 14:19	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		09/14/23 09:11	09/15/23 03:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:02	1

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# Client Sample Results

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

Job ID: 380-61968-1

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-4**

Date Collected: 09/05/23 10:27

Matrix: Drinking Water

Date Received: 09/07/23 10:40

**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		09/14/23 09:11	09/15/23 03:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	93		70 - 130			09/14/23 09:11	09/15/23 03:02	1
13C2 PFHxA	116		70 - 130			09/14/23 09:11	09/15/23 03:02	1
13C2 PFDA	104		70 - 130			09/14/23 09:11	09/15/23 03:02	1
13C3-GenX	120		70 - 130			09/14/23 09:11	09/15/23 03:02	1

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

**Lab Sample ID: 380-61968-7**

Date Collected: 09/05/23 11:13

Matrix: Drinking Water

Date Received: 09/07/23 10:40

**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		09/14/23 09:11	09/15/23 03:12	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	97		70 - 130			09/14/23 09:11	09/15/23 03:12	1
13C2 PFHxA	116		70 - 130			09/14/23 09:11	09/15/23 03:12	1
13C2 PFDA	108		70 - 130			09/14/23 09:11	09/15/23 03:12	1
13C3-GenX	111		70 - 130			09/14/23 09:11	09/15/23 03:12	1



# Client Sample Results

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

Job ID: 380-61968-1

**Client Sample ID: FB: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-8**

**Date Collected: 09/05/23 10:27**

**Matrix: Drinking Water**

**Date Received: 09/07/23 10:40**

**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		09/14/23 09:11	09/15/23 03:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		09/14/23 09:11	09/15/23 03:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	82		70 - 130			09/14/23 09:11	09/15/23 03:22	1
13C2 PFHxA	113		70 - 130			09/14/23 09:11	09/15/23 03:22	1
13C2 PFDA	96		70 - 130			09/14/23 09:11	09/15/23 03:22	1
13C3-GenX	103		70 - 130			09/14/23 09:11	09/15/23 03:22	1

# Action Limit Summary

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61968-1**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2		0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6		0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58	^3+	ug/L	400		0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2		0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4		0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		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	<0.097		ug/L	40		0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

**Client Sample ID: AIEA GULCH WELLS PUMP 2**

**Lab Sample ID: 380-61968-2**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.019		ug/L	0.2		0.019	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.58		ug/L	6		0.58	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.58	^3+	ug/L	400		0.58	525.2	Total/NA
Endrin	<0.097		ug/L	2		0.097	525.2	Total/NA
Heptachlor	<0.039		ug/L	0.4		0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		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	<0.097		ug/L	40		0.097	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA



# Surrogate Summary

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

Job ID: 380-61968-1

## 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)
380-61968-1	AIEA WELLS PUMPS 1&2 (260)	99	101	108
380-61968-2	AIEA GULCH WELLS PUMP 2	98	100	108

**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)
380-61749-AG-4-A MS	Matrix Spike	101	97	107
380-61758-AN-4-A DU	Duplicate	99	98	104
LCS 380-54881/23-A	Lab Control Sample	100	97	108
LCS 380-54881/24-A	Lab Control Sample Dup	101	97	106
MB 380-54881/21-A	Method Blank	102	83	107
MRL 380-54881/22-A	Lab Control Sample	102	91	100

**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)
380-61968-3	AIEA WELLS PUMPS 1&2 (260)	88	116	95	115
380-61968-4	AIEA GULCH WELLS PUMP 2	93	116	104	120
380-61968-7	FB: AIEA WELLS PUMPS 1&2 (260)	97	116	108	111
380-61968-8	FB: AIEA GULCH WELLS PUMF 2	82	113	96	103

**Surrogate Legend**  
 d5NEFOS = d5-NEtFOSAA  
 PFHxA = 13C2 PFHxA  
 PFDA = 13C2 PFDA  
 GenX = 13C3-GenX

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-62122-BE-4-A MS	Matrix Spike	82	110	97	125
380-62122-BF-4-A MSD	Matrix Spike Duplicate	75	109	93	121

Eurofins Eaton Analytical Pomona

# Surrogate Summary

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

Job ID: 380-61968-1

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

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
LCS 380-55621/23-A	Lab Control Sample	89	113	105	112
LCSD 380-55621/24-A	Lab Control Sample Dup	91	112	110	103
MBL 380-55621/21-A	Method Blank	96	116	110	109
MRL 380-55621/22-A	Lab Control Sample	93	116	104	115

### 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: 380-61968-1

## 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)
380-61968-3	AIEA WELLS PUMPS 1&2 (260)	75	98	93	91	98	100	96	97
380-61968-4	AIEA GULCH WELLS PUMP 2	74	93	88	93	99	95	92	93

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-61968-3	AIEA WELLS PUMPS 1&2 (260)	99	101	98	125	101	121	113	112
380-61968-4	AIEA GULCH WELLS PUMP 2	96	101	96	123	96	119	113	109

#### 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)
380-61087-F-1-A DU	Duplicate	77	95	93	95	96	99	96	95
380-61561-C-1-A MS	Matrix Spike	86	94	98	100	97	97	100	98
LCS 380-56506/23-A	Lab Control Sample	92	100	101	100	98	100	99	100
LCSD 380-56506/24-A	Lab Control Sample Dup	90	97	95	98	94	96	91	92
MBL 380-56506/21-A	Method Blank	79	99	85	96	98	100	98	99
MRL 380-56506/22-A	Lab Control Sample	74	100	91	93	97	100	99	98

### 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)
380-61087-F-1-A DU	Duplicate	95	97	94	118	95	111	102	102
380-61561-C-1-A MS	Matrix Spike	95	107	92	121	95	115	102	102
LCS 380-56506/23-A	Lab Control Sample	97	101	95	122	98	106	96	99
LCSD 380-56506/24-A	Lab Control Sample Dup	95	96	95	116	92	100	95	96
MBL 380-56506/21-A	Method Blank	104	101	99	126	99	118	111	113
MRL 380-56506/22-A	Lab Control Sample	104	99	100	125	100	119	107	104

#### Surrogate Legend

- HFPODA = 13C3 HFPO-DA

# Isotope Dilution Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

Job ID: 380-61968-1

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

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MB 380-54881/21-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
2,4'-DDD	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
2,4'-DDE	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
2,4'-DDT	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
2-Methylnaphthalene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
4,4'-DDD	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
4,4'-DDE	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
4,4'-DDT	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Acenaphthene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Acenaphthylene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Acetochlor	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Alachlor	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
alpha-BHC	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
alpha-Chlordane	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Anthracene	<0.020		0.020	ug/L		09/07/23 18:51	09/08/23 13:44	1
Atrazine	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Benz(a)anthracene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Benzo[a]pyrene	<0.020		0.020	ug/L		09/07/23 18:51	09/08/23 13:44	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		09/07/23 18:51	09/08/23 13:44	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		09/07/23 18:51	09/08/23 13:44	1
beta-BHC	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		09/07/23 18:51	09/08/23 13:44	1
Bromacil	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Butachlor	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Butylbenzylphthalate	<0.49		0.49	ug/L		09/07/23 18:51	09/08/23 13:44	1
Chlorobenzilate	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Chloroneb	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Chlorpyrifos	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Chrysene	<0.020		0.020	ug/L		09/07/23 18:51	09/08/23 13:44	1
delta-BHC	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		09/07/23 18:51	09/08/23 13:44	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Dieldrin	<0.20		0.20	ug/L		09/07/23 18:51	09/08/23 13:44	1
Diethylphthalate	<0.49		0.49	ug/L		09/07/23 18:51	09/08/23 13:44	1
Dimethylphthalate	<0.49		0.49	ug/L		09/07/23 18:51	09/08/23 13:44	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		09/07/23 18:51	09/08/23 13:44	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Endosulfan sulfate	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Endrin	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Endrin aldehyde	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
EPTC	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MB 380-54881/21-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Fluorene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
gamma-Chlordane	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Heptachlor	<0.039		0.039	ug/L		09/07/23 18:51	09/08/23 13:44	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Hexachlorobenzene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Isophorone	<0.49		0.49	ug/L		09/07/23 18:51	09/08/23 13:44	1
Lindane	<0.039		0.039	ug/L		09/07/23 18:51	09/08/23 13:44	1
Malathion	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Methoxychlor	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Metolachlor	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Molinate	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Naphthalene	<0.29		0.29	ug/L		09/07/23 18:51	09/08/23 13:44	1
Parathion	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Phenanthrene	<0.039		0.039	ug/L		09/07/23 18:51	09/08/23 13:44	1
Propachlor	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Pyrene	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Simazine	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Terbacil	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Terbutylazine	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1
Thiobencarb	<0.20		0.20	ug/L		09/07/23 18:51	09/08/23 13:44	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		09/07/23 18:51	09/08/23 13:44	1
trans-Nonachlor	<0.049		0.049	ug/L		09/07/23 18:51	09/08/23 13:44	1
Trifluralin	<0.098		0.098	ug/L		09/07/23 18:51	09/08/23 13:44	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.927	T J	ug/L		2.28	N/A	09/07/23 18:51	09/08/23 13:44	1
Cyclohexane, 1-methyl-2-propyl-	0.856	T J N	ug/L		2.36	4291-79-6	09/07/23 18:51	09/08/23 13:44	1
Decane	2.34	T J N	ug/L		2.47	124-18-5	09/07/23 18:51	09/08/23 13:44	1
Ethyl 3-acetoxybutyrate	0.505	T J N	ug/L		2.82	27846-49-7	09/07/23 18:51	09/08/23 13:44	1
n-Hexadecanoic acid	4.19	T J N	ug/L		5.90	57-10-3	09/07/23 18:51	09/08/23 13:44	1
Octadecanoic acid	1.91	T J N	ug/L		6.59	57-11-4	09/07/23 18:51	09/08/23 13:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	102		70 - 130	09/07/23 18:51	09/08/23 13:44	1
Perylene-d12	83		70 - 130	09/07/23 18:51	09/08/23 13:44	1
Triphenylphosphate	107		70 - 130	09/07/23 18:51	09/08/23 13:44	1

**Lab Sample ID: LCS 380-54881/23-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.97	2.18		ug/L		111	70 - 130
2,4'-DDD	1.97	2.36		ug/L		120	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCS 380-54881/23-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDE	1.97	2.35		ug/L		120	70 - 130
2,4'-DDT	1.97	2.50		ug/L		127	70 - 130
2,4-Dinitrotoluene	1.97	2.27		ug/L		115	70 - 130
2,6-Dinitrotoluene	1.97	2.23		ug/L		113	70 - 130
2-Methylnaphthalene	1.97	2.24		ug/L		114	70 - 130
4,4'-DDD	1.97	2.49		ug/L		127	70 - 130
4,4'-DDE	1.97	2.19		ug/L		111	70 - 130
4,4'-DDT	1.97	2.37		ug/L		121	70 - 130
Acenaphthene	1.97	2.11		ug/L		107	70 - 130
Acenaphthylene	1.97	2.11		ug/L		107	70 - 130
Acetochlor	1.97	2.43		ug/L		123	70 - 130
Alachlor	1.97	2.26		ug/L		115	70 - 130
alpha-BHC	1.97	2.14		ug/L		109	70 - 130
alpha-Chlordane	1.97	2.01		ug/L		102	70 - 130
Anthracene	1.97	2.18		ug/L		111	70 - 130
Atrazine	1.97	2.42		ug/L		123	70 - 130
Benz(a)anthracene	1.97	2.39		ug/L		122	70 - 130
Benzo[a]pyrene	1.97	2.41		ug/L		122	70 - 130
Benzo[b]fluoranthene	1.97	2.50		ug/L		127	70 - 130
Benzo[g,h,i]perylene	1.97	2.22		ug/L		113	70 - 130
Benzo[k]fluoranthene	1.97	2.54		ug/L		129	70 - 130
beta-BHC	1.97	2.15		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.02		ug/L		103	70 - 130
Bromacil	1.97	2.33		ug/L		118	70 - 130
Butachlor	1.97	2.40		ug/L		122	70 - 130
Butylbenzylphthalate	1.97	2.44		ug/L		124	70 - 130
Chlorobenzilate	1.97	2.42		ug/L		123	70 - 130
Chloroneb	1.97	2.10		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	2.25		ug/L		114	70 - 130
Chlorpyrifos	1.97	2.41		ug/L		122	70 - 130
Chrysene	1.97	2.10		ug/L		107	70 - 130
delta-BHC	1.97	2.14		ug/L		108	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.28		ug/L		116	70 - 130
Dibenz(a,h)anthracene	1.97	2.24		ug/L		114	70 - 130
Diclorvos (DDVP)	1.97	2.39		ug/L		122	70 - 130
Dieldrin	1.97	2.34		ug/L		119	70 - 130
Diethylphthalate	1.97	2.23		ug/L		113	70 - 130
Dimethylphthalate	1.97	2.27		ug/L		115	70 - 130
Di-n-butyl phthalate	3.94	4.54		ug/L		115	70 - 130
Di-n-octyl phthalate	1.97	1.97		ug/L		100	70 - 130
Endosulfan I (Alpha)	1.97	2.01		ug/L		102	70 - 130
Endosulfan II (Beta)	1.97	2.23		ug/L		113	70 - 130
Endosulfan sulfate	1.97	2.38		ug/L		121	70 - 130
Endrin	1.97	2.47		ug/L		126	70 - 130
Endrin aldehyde	1.97	2.06		ug/L		104	70 - 130
EPTC	1.97	2.20		ug/L		112	70 - 130
Fluoranthene	1.97	2.23		ug/L		113	70 - 130
Fluorene	1.97	2.25		ug/L		114	70 - 130
gamma-Chlordane	1.97	1.99		ug/L		101	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCS 380-54881/23-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor	1.97	2.37		ug/L		121	70 - 130
Heptachlor epoxide (isomer B)	1.97	2.03		ug/L		103	70 - 130
Hexachlorobenzene	1.97	2.17		ug/L		110	70 - 130
Hexachlorocyclopentadiene	1.97	2.15		ug/L		109	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.21		ug/L		112	70 - 130
Isophorone	1.97	2.14		ug/L		109	70 - 130
Lindane	1.97	2.15		ug/L		109	70 - 130
Malathion	1.97	2.28		ug/L		116	70 - 130
Methoxychlor	1.97	2.32		ug/L		118	70 - 130
Metolachlor	1.97	2.36		ug/L		120	70 - 130
Molinate	1.97	2.30		ug/L		117	70 - 130
Naphthalene	1.97	2.14		ug/L		108	70 - 130
Parathion	1.97	2.55		ug/L		130	70 - 130
Pendimethalin (Penoxaline)	1.97	2.41		ug/L		123	70 - 130
Phenanthrene	1.97	2.03		ug/L		103	70 - 130
Propachlor	1.97	2.42		ug/L		123	70 - 130
Pyrene	1.97	2.31		ug/L		117	70 - 130
Simazine	1.97	2.48		ug/L		126	70 - 130
Terbacil	1.97	2.35		ug/L		119	70 - 130
Terbutylazine	1.97	2.38		ug/L		121	70 - 130
Thiobencarb	1.97	2.46		ug/L		125	70 - 130
trans-Nonachlor	1.97	2.10		ug/L		107	70 - 130
Trifluralin	1.97	2.17		ug/L		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	100		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	108		70 - 130

**Lab Sample ID: LCSD 380-54881/24-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.98	2.19		ug/L		110	70 - 130	0	20
2,4'-DDD	1.98	2.36		ug/L		119	70 - 130	0	20
2,4'-DDE	1.98	2.41		ug/L		122	70 - 130	2	20
2,4'-DDT	1.98	2.51		ug/L		126	70 - 130	0	20
2,4-Dinitrotoluene	1.98	2.29		ug/L		116	70 - 130	1	20
2,6-Dinitrotoluene	1.98	2.27		ug/L		114	70 - 130	2	20
2-Methylnaphthalene	1.98	2.26		ug/L		114	70 - 130	1	20
4,4'-DDD	1.98	2.47		ug/L		125	70 - 130	1	20
4,4'-DDE	1.98	2.16		ug/L		109	70 - 130	1	20
4,4'-DDT	1.98	2.36		ug/L		119	70 - 130	1	20
Acenaphthene	1.98	2.15		ug/L		108	70 - 130	2	20
Acenaphthylene	1.98	2.12		ug/L		107	70 - 130	0	20
Acetochlor	1.98	2.43		ug/L		123	70 - 130	0	20
Alachlor	1.98	2.25		ug/L		113	70 - 130	0	20

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCSD 380-54881/24-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
alpha-BHC	1.98	2.14		ug/L		108	70 - 130	0	20	
alpha-Chlordane	1.98	2.03		ug/L		102	70 - 130	1	20	
Anthracene	1.98	2.15		ug/L		108	70 - 130	1	20	
Atrazine	1.98	2.49		ug/L		126	70 - 130	3	20	
Benz(a)anthracene	1.98	2.38		ug/L		120	70 - 130	1	20	
Benzo[a]pyrene	1.98	2.45		ug/L		124	70 - 130	2	20	
Benzo[b]fluoranthene	1.98	2.50		ug/L		126	70 - 130	0	20	
Benzo[g,h,i]perylene	1.98	2.22		ug/L		112	70 - 130	0	20	
Benzo[k]fluoranthene	1.98	2.55		ug/L		129	70 - 130	1	20	
beta-BHC	1.98	2.16		ug/L		109	70 - 130	0	20	
Bis(2-ethylhexyl) phthalate	1.98	2.03		ug/L		103	70 - 130	1	20	
Bromacil	1.98	2.38		ug/L		120	70 - 130	2	20	
Butachlor	1.98	2.39		ug/L		120	70 - 130	1	20	
Butylbenzylphthalate	1.98	2.43		ug/L		123	70 - 130	0	20	
Chlorobenzilate	1.98	2.42		ug/L		122	70 - 130	0	20	
Chloroneb	1.98	2.11		ug/L		106	70 - 130	1	20	
Chlorothalonil (Draconil, Bravo)	1.98	2.26		ug/L		114	70 - 130	1	20	
Chlorpyrifos	1.98	2.39		ug/L		121	70 - 130	1	20	
Chrysene	1.98	2.14		ug/L		108	70 - 130	2	20	
delta-BHC	1.98	2.05		ug/L		103	70 - 130	4	20	
Di(2-ethylhexyl)adipate	1.98	2.25		ug/L		114	70 - 130	1	20	
Dibenz(a,h)anthracene	1.98	2.28		ug/L		115	70 - 130	1	20	
Diclorvos (DDVP)	1.98	2.46		ug/L		124	70 - 130	3	20	
Dieldrin	1.98	2.34		ug/L		118	70 - 130	0	20	
Diethylphthalate	1.98	2.30		ug/L		116	70 - 130	3	20	
Dimethylphthalate	1.98	2.34		ug/L		118	70 - 130	3	20	
Di-n-butyl phthalate	3.96	4.62		ug/L		117	70 - 130	2	20	
Di-n-octyl phthalate	1.98	1.94		ug/L		98	70 - 130	1	20	
Endosulfan I (Alpha)	1.98	1.99		ug/L		101	70 - 130	1	20	
Endosulfan II (Beta)	1.98	2.24		ug/L		113	70 - 130	0	20	
Endosulfan sulfate	1.98	2.38		ug/L		120	70 - 130	0	20	
Endrin	1.98	2.51		ug/L		127	70 - 130	2	20	
Endrin aldehyde	1.98	2.10		ug/L		106	70 - 130	2	20	
EPTC	1.98	2.23		ug/L		112	70 - 130	1	20	
Fluoranthene	1.98	2.22		ug/L		112	70 - 130	0	20	
Fluorene	1.98	2.27		ug/L		114	70 - 130	1	20	
gamma-Chlordane	1.98	2.00		ug/L		101	70 - 130	1	20	
Heptachlor	1.98	2.42		ug/L		122	70 - 130	2	20	
Heptachlor epoxide (isomer B)	1.98	2.04		ug/L		103	70 - 130	1	20	
Hexachlorobenzene	1.98	2.19		ug/L		111	70 - 130	1	20	
Hexachlorocyclopentadiene	1.98	2.19		ug/L		111	70 - 130	2	20	
Indeno[1,2,3-cd]pyrene	1.98	2.27		ug/L		114	70 - 130	2	20	
Isophorone	1.98	2.15		ug/L		109	70 - 130	1	20	
Lindane	1.98	2.10		ug/L		106	70 - 130	2	20	
Malathion	1.98	2.29		ug/L		115	70 - 130	0	20	
Methoxychlor	1.98	2.28		ug/L		115	70 - 130	1	20	
Metolachlor	1.98	2.45		ug/L		124	70 - 130	4	20	
Molinate	1.98	2.32		ug/L		117	70 - 130	1	20	
Naphthalene	1.98	2.14		ug/L		108	70 - 130	0	20	

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCSD 380-54881/24-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Parathion	1.98	2.60	*+	ug/L		131	70 - 130	2	20	
Pendimethalin (Penoxaline)	1.98	2.42		ug/L		122	70 - 130	0	20	
Phenanthrene	1.98	2.08		ug/L		105	70 - 130	2	20	
Propachlor	1.98	2.47		ug/L		125	70 - 130	2	20	
Pyrene	1.98	2.28		ug/L		115	70 - 130	1	20	
Simazine	1.98	2.50		ug/L		126	70 - 130	1	20	
Terbacil	1.98	2.34		ug/L		118	70 - 130	0	20	
Terbutylazine	1.98	2.43		ug/L		122	70 - 130	2	20	
Thiobencarb	1.98	2.44		ug/L		123	70 - 130	1	20	
trans-Nonachlor	1.98	2.08		ug/L		105	70 - 130	1	20	
Trifluralin	1.98	2.20		ug/L		111	70 - 130	2	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	101		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	106		70 - 130

**Lab Sample ID: MRL 380-54881/22-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
1-Methylnaphthalene	0.0984	0.121		ug/L		123	50 - 150	
2,4'-DDD	0.0984	0.139		ug/L		141	50 - 150	
2,4'-DDE	0.0984	0.110		ug/L		111	50 - 150	
2,4'-DDT	0.0984	0.0927	J	ug/L		94	50 - 150	
2,4-Dinitrotoluene	0.0984	0.104		ug/L		106	50 - 150	
2,6-Dinitrotoluene	0.0984	0.117		ug/L		118	50 - 150	
2-Methylnaphthalene	0.0984	0.118		ug/L		120	50 - 150	
4,4'-DDD	0.0984	0.102		ug/L		104	50 - 150	
4,4'-DDE	0.0984	0.100		ug/L		102	50 - 150	
4,4'-DDT	0.0984	0.0920	J	ug/L		93	50 - 150	
Acenaphthene	0.0984	0.107		ug/L		108	50 - 150	
Acenaphthylene	0.0984	0.0916	J	ug/L		93	50 - 150	
Acetochlor	0.0492	0.0501	J	ug/L		102	50 - 150	
Alachlor	0.0492	0.0578		ug/L		117	50 - 150	
alpha-BHC	0.0984	0.108		ug/L		110	50 - 150	
alpha-Chlordane	0.0246	<0.029		ug/L		95	50 - 150	
Anthracene	0.0197	0.0208		ug/L		106	50 - 150	
Atrazine	0.0492	0.0503		ug/L		102	50 - 150	
Benz(a)anthracene	0.0492	0.0488	J	ug/L		99	50 - 150	
Benzo[a]pyrene	0.0197	0.0180	J	ug/L		91	50 - 150	
Benzo[b]fluoranthene	0.0197	0.0199	J	ug/L		101	50 - 150	
Benzo[g,h,i]perylene	0.0492	0.0431	J	ug/L		87	50 - 150	
Benzo[k]fluoranthene	0.0197	0.0191	J	ug/L		97	50 - 150	
beta-BHC	0.0984	0.110		ug/L		112	50 - 150	
Bis(2-ethylhexyl) phthalate	0.591	0.713		ug/L		121	50 - 150	
Bromacil	0.0984	0.147		ug/L		149	50 - 150	

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MRL 380-54881/22-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butachlor	0.0492	0.0822	^3+	ug/L		167	50 - 150
Butylbenzylphthalate	0.148	0.190	J	ug/L		129	50 - 150
Chlorobenzilate	0.0984	0.132		ug/L		134	50 - 150
Chloroneb	0.0984	0.111		ug/L		113	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0984	0.151	^3+	ug/L		154	50 - 150
Chlorpyrifos	0.0492	0.0562		ug/L		114	50 - 150
Chrysene	0.0197	0.0196	J	ug/L		100	50 - 150
delta-BHC	0.0984	0.118		ug/L		120	50 - 150
Di(2-ethylhexyl)adipate	0.295	0.823	^3+	ug/L		279	50 - 150
Dibenz(a,h)anthracene	0.0492	0.0422	J	ug/L		86	50 - 150
Diclorvos (DDVP)	0.0492	0.0670		ug/L		136	50 - 150
Dieldrin	0.0984	0.117	J	ug/L		119	50 - 150
Diethylphthalate	0.148	0.193	J	ug/L		130	50 - 150
Dimethylphthalate	0.295	0.331	J	ug/L		112	50 - 150
Di-n-butyl phthalate	0.295	0.601	J	ug/L		203	49 - 243
Di-n-octyl phthalate	0.0984	0.108		ug/L		109	50 - 150
Endosulfan I (Alpha)	0.0984	0.0990		ug/L		101	50 - 150
Endosulfan II (Beta)	0.0984	0.138		ug/L		140	50 - 150
Endosulfan sulfate	0.0984	0.120		ug/L		122	50 - 150
Endrin	0.0984	0.142		ug/L		144	50 - 150
Endrin aldehyde	0.0984	0.101		ug/L		103	50 - 150
EPTC	0.0984	0.142		ug/L		145	50 - 150
Fluoranthene	0.0492	0.0548	J	ug/L		111	50 - 150
Fluorene	0.0492	0.0556		ug/L		113	50 - 150
gamma-Chlordane	0.0246	0.0245	J	ug/L		100	50 - 150
Heptachlor	0.0394	0.0546		ug/L		139	50 - 150
Heptachlor epoxide (isomer B)	0.0492	0.0505		ug/L		103	50 - 150
Hexachlorobenzene	0.0492	0.0522		ug/L		106	50 - 150
Hexachlorocyclopentadiene	0.0492	0.0408	J	ug/L		83	50 - 150
Indeno[1,2,3-cd]pyrene	0.0492	0.0398	J	ug/L		81	50 - 150
Isophorone	0.0984	0.116	J	ug/L		118	50 - 150
Lindane	0.0394	0.0419		ug/L		106	50 - 150
Malathion	0.0984	0.133		ug/L		135	50 - 150
Methoxychlor	0.0984	0.0838	J	ug/L		85	50 - 150
Metolachlor	0.0492	0.0642		ug/L		130	50 - 150
Molinate	0.0984	0.139		ug/L		141	50 - 150
Naphthalene	0.0984	0.117	J	ug/L		119	50 - 150
Parathion	0.0984	0.132		ug/L		134	50 - 150
Pendimethalin (Penoxaline)	0.0984	0.116		ug/L		118	50 - 150
Phenanthrene	0.0197	0.0241	J	ug/L		122	50 - 150
Propachlor	0.0492	0.0565		ug/L		115	50 - 150
Pyrene	0.0492	0.0564		ug/L		115	50 - 150
Simazine	0.0492	0.0637		ug/L		129	50 - 150
Terbacil	0.0984	0.155	^3+	ug/L		157	50 - 150
Terbutylazine	0.0984	0.105		ug/L		107	50 - 150
Thiobencarb	0.0984	0.127	J	ug/L		129	50 - 150
trans-Nonachlor	0.0246	<0.026		ug/L		99	50 - 150
Trifluralin	0.0984	0.113		ug/L		115	50 - 150

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MRL 380-54881/22-A**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

<i>Surrogate</i>	<i>MRL %Recovery</i>	<i>MRL Qualifier</i>	<i>Limits</i>
2-Nitro-m-xylene	102		70 - 130
Perylene-d12	91		70 - 130
Triphenylphosphate	100		70 - 130

**Lab Sample ID: 380-61749-AG-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>Spike Added</b>	<b>MS Result</b>	<b>MS Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>
1-Methylnaphthalene	<0.098		1.97	2.17		ug/L		110	70 - 130
2,4'-DDD	<0.098		1.97	2.23		ug/L		113	70 - 130
2,4'-DDE	<0.098		1.97	2.36		ug/L		120	70 - 130
2,4'-DDT	<0.098		1.97	2.49		ug/L		126	70 - 130
2,4-Dinitrotoluene	<0.098		1.97	2.43		ug/L		123	70 - 130
2,6-Dinitrotoluene	<0.098		1.97	2.33		ug/L		118	70 - 130
2-Methylnaphthalene	<0.098		1.97	2.21		ug/L		112	70 - 130
4,4'-DDD	<0.098		1.97	2.48		ug/L		126	70 - 130
4,4'-DDE	<0.098		1.97	2.12		ug/L		107	70 - 130
4,4'-DDT	<0.098		1.97	2.32		ug/L		118	70 - 130
Acenaphthene	<0.098		1.97	2.16		ug/L		109	70 - 130
Acenaphthylene	<0.098		1.97	2.19		ug/L		111	70 - 130
Acetochlor	<0.098		1.97	2.41		ug/L		122	70 - 130
Alachlor	<0.049		1.97	2.25		ug/L		114	70 - 130
alpha-BHC	<0.098		1.97	2.15		ug/L		109	70 - 130
alpha-Chlordane	<0.049		1.97	1.99		ug/L		101	70 - 130
Anthracene	<0.020		1.97	1.92		ug/L		97	70 - 130
Atrazine	<0.049		1.97	2.50		ug/L		127	70 - 130
Benz(a)anthracene	<0.049		1.97	2.35		ug/L		119	70 - 130
Benzo[a]pyrene	<0.020		1.97	2.21		ug/L		112	70 - 130
Benzo[b]fluoranthene	<0.020		1.97	2.48		ug/L		126	70 - 130
Benzo[g,h,i]perylene	<0.049		1.97	1.97		ug/L		100	70 - 130
Benzo[k]fluoranthene	<0.020		1.97	2.48		ug/L		126	70 - 130
beta-BHC	<0.098		1.97	2.16		ug/L		109	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.97	2.08		ug/L		96	70 - 130
Bromacil	<0.098		1.97	2.39		ug/L		121	70 - 130
Butachlor	<0.049	^3+	1.97	2.36		ug/L		120	70 - 130
Butylbenzylphthalate	<0.49		1.97	2.40		ug/L		122	70 - 130
Chlorobenzilate	<0.098		1.97	2.42		ug/L		123	70 - 130
Chloroneb	<0.098		1.97	2.09		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098	^3+	1.97	2.30		ug/L		117	70 - 130
Chlorpyrifos	<0.049		1.97	2.41		ug/L		122	70 - 130
Chrysene	<0.020		1.97	2.15		ug/L		109	70 - 130
delta-BHC	<0.098		1.97	2.08		ug/L		105	70 - 130
Di(2-ethylhexyl)adipate	<0.59	^3+	1.97	2.15		ug/L		100	70 - 130
Dibenz(a,h)anthracene	<0.049		1.97	2.04		ug/L		103	70 - 130
Diclorvos (DDVP)	<0.049		1.97	2.41		ug/L		123	70 - 130
Dieldrin	<0.20		1.97	2.33		ug/L		118	70 - 130
Diethylphthalate	<0.49		1.97	2.27		ug/L		112	70 - 130

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61758-AN-4-A DU**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

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

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61758-AN-4-A DU**  
**Matrix: Water**  
**Analysis Batch: 54979**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 54881**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049		<0.049		ug/L		NC	20
Isophorone	<0.49		<0.49		ug/L		NC	20
Lindane	<0.039		<0.039		ug/L		NC	20
Malathion	<0.098		<0.099		ug/L		NC	20
Methoxychlor	<0.098		<0.099		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.098		<0.099		ug/L		NC	20
Naphthalene	<0.29		<0.30		ug/L		NC	20
Parathion	<0.098	*+	<0.099	*+	ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.099		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.098	^3+	<0.099		ug/L		NC	20
Terbutylazine	<0.098		<0.099		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.098		<0.099		ug/L		NC	20
		<b>DU</b>	<b>DU</b>					
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
2-Nitro-m-xylene	99		70 - 130					
Perylene-d12	98		70 - 130					
Triphenylphosphate	104		70 - 130					

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

**Lab Sample ID: MBL 380-56506/21-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MBL 380-56506/21-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		09/21/23 14:26	09/24/23 10:41	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C6 PFDA	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C5 PFHxA	85		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C4 PFHpA	96		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C8 PFOA	98		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C9 PFNA	100		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C7 PFUnA	98		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2 PFDoA	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C4 PFBA	104		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C5 PFPeA	101		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C3 PFBS	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C3 PFHxS	126		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C8 PFOS	99		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2-4:2-FTS	118		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2-6:2-FTS	111		50 - 200	09/21/23 14:26	09/24/23 10:41	1
13C2-8:2-FTS	113		50 - 200	09/21/23 14:26	09/24/23 10:41	1

**Lab Sample ID: LCS 380-56506/23-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	120	115		ng/L		96	70 - 130

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCS 380-56506/23-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid(9Cl-PF3ONS)	120	122		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	120		ng/L		100	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	106		ng/L		88	70 - 130
Perfluorobutanesulfonic acid (PFBS)	120	122		ng/L		102	70 - 130
Perfluorodecanoic acid (PFDA)	120	121		ng/L		100	70 - 130
Perfluorododecanoic acid (PFDoA)	120	119		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	120	117		ng/L		97	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	120	117		ng/L		97	70 - 130
Perfluorohexanoic acid (PFHxA)	120	121		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	120	119		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	120	117		ng/L		97	70 - 130
Perfluorooctanoic acid (PFOA)	120	118		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	120	118		ng/L		98	70 - 130
Perfluorobutanoic acid (PFBA)	120	118		ng/L		98	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	126		ng/L		105	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	121		ng/L		100	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	129		ng/L		107	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	116		ng/L		96	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	124		ng/L		103	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	119		ng/L		99	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	121		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	120	120		ng/L		100	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	120	119		ng/L		99	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	120	100		ng/L		84	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C3 HFPO-DA	92		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	101		50 - 200
13C4 PFHpA	100		50 - 200
13C8 PFOA	98		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	100		50 - 200
13C4 PFBA	97		50 - 200

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCS 380-56506/23-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

<i>Isotope Dilution</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
13C5 PFPeA	101		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	122		50 - 200
13C8 PFOS	98		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	96		50 - 200
13C2-8:2-FTS	99		50 - 200

**Lab Sample ID: LCSD 380-56506/24-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

<i>Analyte</i>	<i>Spike Added</i>	<i>LCSD Result</i>	<i>LCSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	120	119		ng/L		99	70 - 130	3	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	120	128		ng/L		106	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	120	118		ng/L		98	70 - 130	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	120	110		ng/L		91	70 - 130	3	30
Perfluorobutanesulfonic acid (PFBS)	120	120		ng/L		100	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	120	121		ng/L		101	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	120	122		ng/L		102	70 - 130	3	30
Perfluoroheptanoic acid (PFHpA)	120	118		ng/L		98	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	120	122		ng/L		102	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	120	126		ng/L		105	70 - 130	4	30
Perfluorononanoic acid (PFNA)	120	121		ng/L		100	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	120	122		ng/L		101	70 - 130	4	30
Perfluorooctanoic acid (PFOA)	120	121		ng/L		100	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	120	126		ng/L		105	70 - 130	7	30
Perfluorobutanoic acid (PFBA)	120	121		ng/L		101	70 - 130	2	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	120	127		ng/L		105	70 - 130	0	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	120	119		ng/L		99	70 - 130	1	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	120	129		ng/L		107	70 - 130	0	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	120	120		ng/L		100	70 - 130	4	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	120	116		ng/L		96	70 - 130	7	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	120	122		ng/L		102	70 - 130	3	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	120	120		ng/L		100	70 - 130	1	30

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCSD 380-56506/24-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	120	121		ng/L		100	70 - 130	1	30
Perfluoroheptanesulfonic acid (PFHpS)	120	124		ng/L		103	70 - 130	4	30
Perfluoropentanesulfonic acid (PFPeS)	120	105		ng/L		88	70 - 130	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C3 HFPO-DA	90		50 - 200
13C6 PFDA	97		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	98		50 - 200
13C8 PFOA	94		50 - 200
13C9 PFNA	96		50 - 200
13C7 PFUnA	91		50 - 200
13C2 PFDoA	92		50 - 200
13C4 PFBA	95		50 - 200
13C5 PFPeA	96		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	116		50 - 200
13C8 PFOS	92		50 - 200
13C2-4:2-FTS	100		50 - 200
13C2-6:2-FTS	95		50 - 200
13C2-8:2-FTS	96		50 - 200

**Lab Sample ID: MRL 380-56506/22-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.65	J	ng/L		82	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	1.72	J	ng/L		86	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.88	J	ng/L		94	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.58	J	ng/L		79	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.78	J	ng/L		89	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.83	J	ng/L		92	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.77	J	ng/L		88	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.85	J	ng/L		93	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.07	J	ng/L		103	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.77	J	ng/L		88	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	1.76	J	ng/L		88	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.84	J	ng/L		92	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MRL 380-56506/22-A**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.73	J	ng/L		86	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.29	J	ng/L		114	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.00	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	1.80	J	ng/L		90	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.18	J	ng/L		109	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	2.00	1.57	J	ng/L		78	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.53	J	ng/L		76	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.93	J	ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	1.87	J	ng/L		93	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.22	J	ng/L		61	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	Limits
13C3 HFPO-DA	74		50 - 200
13C6 PFDA	100		50 - 200
13C5 PFHxA	91		50 - 200
13C4 PFHpA	93		50 - 200
13C8 PFOA	97		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	99		50 - 200
13C2 PFDoA	98		50 - 200
13C4 PFBA	104		50 - 200
13C5 PFPeA	99		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	125		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	119		50 - 200
13C2-6:2-FTS	107		50 - 200
13C2-8:2-FTS	104		50 - 200

**Lab Sample ID: 380-61561-C-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		121	121		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		121	127		ng/L		105	70 - 130

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61561-C-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C8 PFOS	95		50 - 200
13C2-4:2-FTS	115		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	102		50 - 200

**Lab Sample ID: 380-61087-F-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

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

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-61087-F-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 56715**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 56506**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Perfluoropentanesulfonic acid (PFPeS)	<2.0		<2.0		ng/L		NC	30
<b>DU DU</b>								
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
13C3 HFPO-DA	77		50 - 200					
13C6 PFDA	95		50 - 200					
13C5 PFHxA	93		50 - 200					
13C4 PFHpA	95		50 - 200					
13C8 PFOA	96		50 - 200					
13C9 PFNA	99		50 - 200					
13C7 PFUnA	96		50 - 200					
13C2 PFDoA	95		50 - 200					
13C4 PFBA	95		50 - 200					
13C5 PFPeA	97		50 - 200					
13C3 PFBS	94		50 - 200					
13C3 PFHxS	118		50 - 200					
13C8 PFOS	95		50 - 200					
13C2-4:2-FTS	111		50 - 200					
13C2-6:2-FTS	102		50 - 200					
13C2-8:2-FTS	102		50 - 200					

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

**Lab Sample ID: MBL 380-55621/21-A**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
N-methylperfluorooctanesulfonamide acid (NMeFOSAA)	<0.58		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
N-ethylperfluorooctanesulfonamide acid (NEtFOSAA)	<0.42		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1

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# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MBL 380-55621/21-A**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		09/14/23 09:11	09/15/23 01:27	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	96		70 - 130	09/14/23 09:11	09/15/23 01:27	1
13C2 PFHxA	116		70 - 130	09/14/23 09:11	09/15/23 01:27	1
13C2 PFDA	110		70 - 130	09/14/23 09:11	09/15/23 01:27	1
13C3-GenX	109		70 - 130	09/14/23 09:11	09/15/23 01:27	1

**Lab Sample ID: LCS 380-55621/23-A**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	50.8		ng/L		101	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	48.8		ng/L		105	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	48.5		ng/L		97	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	48.8		ng/L		97	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	44.9		ng/L		90	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	54.9		ng/L		110	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	50.6		ng/L		101	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	52.9		ng/L		105	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	47.8		ng/L		95	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	46.0		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	43.9		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	50.0		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	50.1	54.7		ng/L		109	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	48.2		ng/L		96	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	50.1	50.1		ng/L		100	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	47.5		ng/L		101	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	44.0		ng/L		93	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	50.2		ng/L		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	89		70 - 130
13C2 PFHxA	113		70 - 130
13C2 PFDA	105		70 - 130

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: LCS 380-55621/23-A**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
13C3-GenX	112		70 - 130

**Lab Sample ID: LCSD 380-55621/24-A**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	50.3		ng/L		100	70 - 130	1	30	
Perfluorooctanesulfonic acid (PFOS)	46.4	48.7		ng/L		105	70 - 130	0	30	
Perfluoroundecanoic acid (PFUnA)	50.1	49.8		ng/L		99	70 - 130	3	30	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	47.8		ng/L		95	70 - 130	2	30	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	44.2		ng/L		88	70 - 130	2	30	
Perfluorohexanoic acid (PFHxA)	50.1	54.1		ng/L		108	70 - 130	2	30	
Perfluorododecanoic acid (PFDoA)	50.1	49.5		ng/L		99	70 - 130	2	30	
Perfluorooctanoic acid (PFOA)	50.1	53.4		ng/L		107	70 - 130	1	30	
Perfluorodecanoic acid (PFDA)	50.1	50.0		ng/L		100	70 - 130	4	30	
Perfluorohexanesulfonic acid (PFHxS)	45.7	46.2		ng/L		101	70 - 130	1	30	
Perfluorobutanesulfonic acid (PFBS)	44.3	45.7		ng/L		103	70 - 130	4	30	
Perfluoroheptanoic acid (PFHpA)	50.1	47.9		ng/L		96	70 - 130	4	30	
Perfluorononanoic acid (PFNA)	50.1	55.0		ng/L		110	70 - 130	1	30	
Perfluorotetradecanoic acid (PFTA)	50.1	49.8		ng/L		99	70 - 130	3	30	
Perfluorotridecanoic acid (PFTrDA)	50.1	51.8		ng/L		103	70 - 130	3	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	46.8	48.3		ng/L		103	70 - 130	2	30	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	44.6		ng/L		94	70 - 130	1	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	48.3		ng/L		102	70 - 130	4	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
d5-NEtFOSAA	91		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	110		70 - 130
13C3-GenX	103		70 - 130

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: MRL 380-55621/22-A**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.34	J	ng/L		117	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.08	J	ng/L		112	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.12	J	ng/L		106	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.36	J	ng/L		118	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.33	J	ng/L		116	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.35	J	ng/L		117	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.28	J	ng/L		114	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.40	J	ng/L		120	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.18	J	ng/L		109	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.96	J	ng/L		107	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	2.02	J	ng/L		114	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.47	J	ng/L		123	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.40	J	ng/L		120	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.27	J	ng/L		113	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.28	J	ng/L		114	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	2.11	J	ng/L		112	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.90	J	ng/L		100	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.32	J	ng/L		122	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	93		70 - 130
13C2 PFHxA	116		70 - 130
13C2 PFDA	104		70 - 130
13C3-GenX	115		70 - 130

**Lab Sample ID: 380-62122-BE-4-A MS**  
**Matrix: Water**  
**Analysis Batch: 55736**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 55621**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	52.9		ng/L		105	70 - 130
Perfluorooctanesulfonic acid (PFOS)	3.4		46.5	49.1		ng/L		98	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	46.8		ng/L		93	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	47.3		ng/L		94	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-61968-1

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

**Lab Sample ID: 380-62122-BE-4-A MS**

**Matrix: Water**

**Analysis Batch: 55736**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 55621**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	41.4		ng/L		83	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	54.8		ng/L		106	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	49.1		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	2.1		50.2	56.3		ng/L		108	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		50.2	47.3		ng/L		94	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		45.8	47.9		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		44.4	45.6		ng/L		101	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		50.2	49.7		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		50.2	54.2		ng/L		108	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		50.2	47.7		ng/L		95	70 - 130
Perfluorotridecanoic acid (PFTrDA)	<2.0		50.2	49.4		ng/L		98	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		46.9	44.1		ng/L		94	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		47.4	42.3		ng/L		89	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		47.4	47.9		ng/L		101	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
d5-NEtFOSAA	82		70 - 130
13C2 PFHxA	110		70 - 130
13C2 PFDA	97		70 - 130
13C3-GenX	125		70 - 130

**Lab Sample ID: 380-62122-BF-4-A MSD**

**Matrix: Water**

**Analysis Batch: 55736**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 55621**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		50.2	53.2		ng/L		106	70 - 130	1	30
Perfluorooctanesulfonic acid (PFOS)	3.4		46.5	47.5		ng/L		95	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		50.2	46.3		ng/L		92	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		50.2	45.3		ng/L		90	70 - 130	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		50.2	39.9		ng/L		79	70 - 130	4	30
Perfluorohexanoic acid (PFHxA)	<2.0		50.2	51.4		ng/L		99	70 - 130	6	30
Perfluorododecanoic acid (PFDoA)	<2.0		50.2	47.6		ng/L		95	70 - 130	3	30
Perfluorooctanoic acid (PFOA)	2.1		50.2	53.0		ng/L		101	70 - 130	6	30
Perfluorodecanoic acid (PFDA)	<2.0		50.2	46.5		ng/L		93	70 - 130	2	30

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# QC Association Summary

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

Job ID: 380-61968-1

## GC/MS Semi VOA

### Prep Batch: 54881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-61968-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
MB 380-54881/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-54881/23-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-54881/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-54881/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-61749-AG-4-A MS	Matrix Spike	Total/NA	Water	525.2	
380-61758-AN-4-A DU	Duplicate	Total/NA	Water	525.2	

### Analysis Batch: 54979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	54881
380-61968-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	54881
MB 380-54881/21-A	Method Blank	Total/NA	Water	525.2	54881
LCS 380-54881/23-A	Lab Control Sample	Total/NA	Water	525.2	54881
LCSD 380-54881/24-A	Lab Control Sample Dup	Total/NA	Water	525.2	54881
MRL 380-54881/22-A	Lab Control Sample	Total/NA	Water	525.2	54881
380-61749-AG-4-A MS	Matrix Spike	Total/NA	Water	525.2	54881
380-61758-AN-4-A DU	Duplicate	Total/NA	Water	525.2	54881

## LCMS

### Prep Batch: 55621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
380-61968-4	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-61968-7	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	537.1 DW	
380-61968-8	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
MBL 380-55621/21-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-55621/23-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-55621/24-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-55621/22-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-62122-BE-4-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-62122-BF-4-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Analysis Batch: 55736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	55621
380-61968-4	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	55621
380-61968-7	FB: AIEA WELLS PUMPS 1&2 (260)	Total/NA	Drinking Water	537.1	55621
380-61968-8	FB: AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	55621
MBL 380-55621/21-A	Method Blank	Total/NA	Water	537.1	55621
LCS 380-55621/23-A	Lab Control Sample	Total/NA	Water	537.1	55621
LCSD 380-55621/24-A	Lab Control Sample Dup	Total/NA	Water	537.1	55621
MRL 380-55621/22-A	Lab Control Sample	Total/NA	Water	537.1	55621
380-62122-BE-4-A MS	Matrix Spike	Total/NA	Water	537.1	55621
380-62122-BF-4-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	55621

### Prep Batch: 56506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	

Eurofins Eaton Analytical Pomona

# QC Association Summary

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

Job ID: 380-61968-1

## LCMS (Continued)

### Prep Batch: 56506 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-4	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
MBL 380-56506/21-A	Method Blank	Total/NA	Water	533	
LCS 380-56506/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-56506/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-56506/22-A	Lab Control Sample	Total/NA	Water	533	
380-61561-C-1-A MS	Matrix Spike	Total/NA	Water	533	
380-61087-F-1-A DU	Duplicate	Total/NA	Water	533	

### Analysis Batch: 56715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-61968-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	56506
380-61968-4	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	56506
MBL 380-56506/21-A	Method Blank	Total/NA	Water	533	56506
LCS 380-56506/23-A	Lab Control Sample	Total/NA	Water	533	56506
LCSD 380-56506/24-A	Lab Control Sample Dup	Total/NA	Water	533	56506
MRL 380-56506/22-A	Lab Control Sample	Total/NA	Water	533	56506
380-61561-C-1-A MS	Matrix Spike	Total/NA	Water	533	56506
380-61087-F-1-A DU	Duplicate	Total/NA	Water	533	56506



# Lab Chronicle

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

Job ID: 380-61968-1

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

Date Collected: 09/05/23 11:13

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61968-1

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			54881	N8NE	EA POM	09/07/23 20:06
Total/NA	Analysis	525.2		1	54979	Q8LA	EA POM	09/08/23 19:24

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 09/05/23 10:27

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61968-2

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			54881	N8NE	EA POM	09/07/23 20:06
Total/NA	Analysis	525.2		1	54979	Q8LA	EA POM	09/08/23 19:44

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

Date Collected: 09/05/23 11:13

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61968-3

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			56506	UMV1	EA POM	09/21/23 14:26
Total/NA	Analysis	533		1	56715	UKYM	EA POM	09/24/23 14:09
Total/NA	Prep	537.1 DW			55621	U7RS	EA POM	09/14/23 09:11
Total/NA	Analysis	537.1		1	55736	SZ9R	EA POM	09/15/23 02:53

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Date Collected: 09/05/23 10:27

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61968-4

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			56506	UMV1	EA POM	09/21/23 14:26
Total/NA	Analysis	533		1	56715	UKYM	EA POM	09/24/23 14:19
Total/NA	Prep	537.1 DW			55621	U7RS	EA POM	09/14/23 09:11
Total/NA	Analysis	537.1		1	55736	SZ9R	EA POM	09/15/23 03:02

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

Date Collected: 09/05/23 11:13

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61968-7

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			55621	U7RS	EA POM	09/14/23 09:11
Total/NA	Analysis	537.1		1	55736	SZ9R	EA POM	09/15/23 03:12

## Client Sample ID: FB: AIEA GULCH WELLS PUMP 2

Date Collected: 09/05/23 10:27

Date Received: 09/07/23 10:40

Lab Sample ID: 380-61968-8

Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537.1 DW			55621	U7RS	EA POM	09/14/23 09:11
Total/NA	Analysis	537.1		1	55736	SZ9R	EA POM	09/15/23 03:22

Eurofins Eaton Analytical Pomona

# Lab Chronicle

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

Job ID: 380-61968-1

**Laboratory References:**

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

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# Accreditation/Certification Summary

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

Job ID: 380-61968-1

## 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: 380-61968-1

## 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)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)

# Method Summary

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

Job ID: 380-61968-1

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

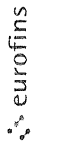
Job ID: 380-61968-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-61968-1	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	09/05/23 11:13	09/07/23 10:40	HI0000331
380-61968-2	AIEA GULCH WELLS PUMP 2	Drinking Water	09/05/23 10:27	09/07/23 10:40	HI0000331
380-61968-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	09/05/23 11:13	09/07/23 10:40	
380-61968-4	AIEA GULCH WELLS PUMP 2	Drinking Water	09/05/23 10:27	09/07/23 10:40	
380-61968-7	FB: AIEA WELLS PUMPS 1&2 (260)	Drinking Water	09/05/23 11:13	09/07/23 10:40	
380-61968-8	FB: AIEA GULCH WELLS PUMP 2	Drinking Water	09/05/23 10:27	09/07/23 10:40	

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

### Chain of Custody Record



<b>Client Information</b> Client Contact: Dr. Ron Fenstermacher Company: City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State, Zip: HI, 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill Site:		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@net.eurofins.com Camer Tracking No(s): 380-27941-2757 2 State of Origin:	
Due Date Requested: TAT Requested (days): Compliance Project: $\Delta$ No PO #: C20525101 exp 05312023 WO #:		Carrier Tracking No(s): State of Origin:	
Sample Date: 5-Sep-2023 Sample Time: 1113 G Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air): Water		Analysis Requested: SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) + TICs SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil SUBCONTRACT (MOD) 525plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 537 1 DW_PREC - 537 1 Full List 533 - All Analytes	
Sample Identification: AIEA WELLS PUMPS 1&2 (260)PZ AIEA GULCH WELLS PUMP2		Field Filtered Sample (Yes or No): Perform MS/MSD (Yes or No): SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil SUBCONTRACT (MOD) 525plus TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) SUBCONTRACT - 537 1 Full List 533 - All Analytes	
Possible Hazard Identification: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Special Instructions/Note: Total Number of Containers:	
Deliverable Requested I, II, III, IV, Other (specify): Empty Kit Relinquished by: BAILEY Relinquished by: BAILEY Relinquished by:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:	
Date/Time: 08/29/2023 1400 Date/Time:		Date/Time: 09/07/2023 10:40 Date/Time:	
Date: 08/29/2023 Date:		Date: 09/07/2023 Date:	
Relinquished by: BAILEY Relinquished by:		Relinquished by: A.C. RETNER Relinquished by:	
Custody Seals Intact: $\Delta$ Yes $\Delta$ No		Cooler Temperature(s) °C and Other Remarks: CEL: 11.1, 0.2, -0.9, -2.4 CEL: 11.1, 0.2, -0.9, -2.4	



**Bottle Order Information**

**Bottle Order:** RUSH RED-HILL WEEKLY  
**Bottle Order #:** 2757  
**Request From Client:** 7/20/2023 11:12:54AM  
**Date Order Posted:** 7/20/2023 11:12:54AM  
**Order Status:** Ready To Process  
**Prepared By:** Davis Healey  
**Deliver By Date:** 8/23/2023 11:59:00PM  
**Lab Project Number:** 38001111  
**PWSID:**

**Order Completion Information**

**Creator:** Michelle Do  
**Filled by:**  
**Sent Date:**  
**Sent Via:**  
**Tracking #:**

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

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





# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-61968-1

**Login Number: 61968**  
**List Number: 1**  
**Creator: Segura, Ryan**

**List Source: Eurofins Eaton Analytical Pomona**

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	