

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

RED-HILL  
RUSH Weekly Red Hill

## JOB NUMBER

380-71238-1

# 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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# Definitions/Glossary

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

Job ID: 380-71238-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) 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.

### GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

### 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)

# Definitions/Glossary

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

Job ID: 380-71238-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 10
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# Case Narrative

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

Job ID: 380-71238-1

**Job ID: 380-71238-1**

**Eurofins Eaton Analytical Pomona**

## Job Narrative 380-71238-1

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 11/15/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.5°C, 2.6°C and 2.6°C

### Receipt Exceptions

One out of the four received 8015 vials arrived broken from sites MONALUA WELLS & HALAWA WELLS UNITS 1&2 P1.

One out of the two received Trip Blank 8015 vials from site AIEA GULCH WELLS PUMP2 arrived broken.

### Subcontract Work

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

### GC/MS Semi VOA

Method 525.2\_PREC: The continuing calibration verification (CCV) associated with batch 380-64639 recovered above the upper control limit for Acetochlor. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: AIEA GULCH WELLS PUMP 2 (380-71238-2).

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

### Gasoline Range Organics

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

### GC Semi VOA

Method 8015B\_DRO\_LL\_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-384933. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8015B\_DRO\_LL\_CS: A portion of the following sample(s) was used for analysis, rather than testing the entire sample amount in the original container, due to the sample containers not being the appropriate size. As such, the required solvent rinse of the original container could not be performed.

Method 8015B\_DRO\_LL\_CS: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-384933 and analytical batch 570-390550 recovered outside control limits for the following analytes: C10-C28. Laboratory control sample / laboratory control sample duplicate (LCS/LCSD) percent recovery is in control for affected analytes.

Method 8015B\_DAI: The Hexafluoro-2-propanol (Surr) surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: MOANALUA WELLS (380-71238-1). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

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

### PFAS

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# Case Narrative

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

Job ID: 380-71238-1

**Job ID: 380-71238-1 (Continued)**

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

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# Detection Summary

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

Job ID: 380-71238-1

**Client Sample ID: MOANALUA WELLS**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-71238-1**

No Detections.

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

**Lab Sample ID: 380-71238-2**

No Detections.

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

**Lab Sample ID: 380-71238-3**

No Detections.

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

**Lab Sample ID: 380-71238-4**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	2.6		2.0	ng/L	1		533	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		2.0	ng/L	1		533	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.0	ng/L	1		533	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanoic acid (PFHxA)	2.2		2.0	ng/L	1		537.1	Total/NA
Perfluorooctanoic acid (PFOA)	2.0		2.0	ng/L	1		537.1	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.7		2.0	ng/L	1		537.1	Total/NA

**Client Sample ID: TB MOANALUA WELLS**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-71238-5**

No Detections.

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

**Lab Sample ID: 380-71238-6**

No Detections.

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

**Lab Sample ID: 380-71238-7**

No Detections.

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

**Lab Sample ID: 380-71238-8**

No Detections.

**Client Sample ID: FB MOANALUA WELLS**  
**PWSID Number: HI0000331**

**Lab Sample ID: 380-71238-9**

No Detections.

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

**Lab Sample ID: 380-71238-10**

No Detections.

This Detection Summary does not include radiochemical test results.

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# Detection Summary

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-11**

No Detections.

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

**Lab Sample ID: 380-71238-12**

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-71238-1**

Date Collected: 11/13/23 09:50

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
2,4'-DDD	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
2,4'-DDE	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
2,4'-DDT	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
2-Methylnaphthalene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
4,4'-DDD	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
4,4'-DDE	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
4,4'-DDT	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Acenaphthene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Acenaphthylene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Acetochlor	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Alachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
alpha-BHC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
alpha-Chlordane	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Anthracene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 19:40	1
Atrazine	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Benz(a)anthracene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 19:40	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 19:40	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 19:40	1
beta-BHC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		11/16/23 16:10	11/17/23 19:40	1
Bromacil	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Butachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Butylbenzylphthalate	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 19:40	1
Chlorobenzilate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Chloroneb	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Chlorpyrifos	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Chrysene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 19:40	1
delta-BHC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/16/23 16:10	11/17/23 19:40	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Dieldrin	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 19:40	1
Diethylphthalate	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 19:40	1
Dimethylphthalate	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 19:40	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		11/16/23 16:10	11/17/23 19:40	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Endosulfan sulfate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Endrin	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Endrin aldehyde	<0.099	^3+	0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
EPTC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Fluoranthene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

## Client Sample ID: MOANALUA WELLS

## Lab Sample ID: 380-71238-1

Date Collected: 11/13/23 09:50

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
gamma-Chlordane	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Heptachlor	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 19:40	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Hexachlorobenzene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Isophorone	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 19:40	1
Lindane	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 19:40	1
Malathion	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Methoxychlor	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Metolachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Molinate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Naphthalene	<0.30		0.30	ug/L		11/16/23 16:10	11/17/23 19:40	1
Parathion	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Phenanthrene	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 19:40	1
Propachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Pyrene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Simazine	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Terbacil	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Terbutylazine	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1
Thiobencarb	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 19:40	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 19:40	1
trans-Nonachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 19:40	1
Trifluralin	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 19:40	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/16/23 16:10	11/17/23 19:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	11/16/23 16:10	11/17/23 19:40	1
Perylene-d12	104		70 - 130	11/16/23 16:10	11/17/23 19:40	1
Triphenylphosphate	111		70 - 130	11/16/23 16:10	11/17/23 19:40	1

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 15:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		38 - 134		11/20/23 15:04	1

### Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		11/17/23 15:13	12/08/23 14:12	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		11/17/23 15:13	12/08/23 14:12	1
C8-C18	<25		25	ug/L		11/17/23 15:13	12/08/23 14:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	108		60 - 130	11/17/23 15:13	12/08/23 14:12	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

## Client Sample ID: MOANALUA WELLS

## Lab Sample ID: 380-71238-1

Date Collected: 11/13/23 09:50

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

### Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			11/27/23 19:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	100	p	54 - 120				11/27/23 19:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:13	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200			11/29/23 12:29	12/01/23 10:13	1
13C6 PFDA	106		50 - 200			11/29/23 12:29	12/01/23 10:13	1
13C5 PFHxA	103		50 - 200			11/29/23 12:29	12/01/23 10:13	1
13C4 PFHpA	110		50 - 200			11/29/23 12:29	12/01/23 10:13	1
13C8 PFOA	101		50 - 200			11/29/23 12:29	12/01/23 10:13	1
13C9 PFNA	100		50 - 200			11/29/23 12:29	12/01/23 10:13	1
13C7 PFUnA	100		50 - 200			11/29/23 12:29	12/01/23 10:13	1

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# Client Sample Results

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

Job ID: 380-71238-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-71238-1**

Date Collected: 11/13/23 09:50

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	103		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C4 PFBA	105		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C5 PFPeA	109		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C3 PFBS	94		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C3 PFHxS	101		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C8 PFOS	102		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C2-4:2-FTS	118		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C2-6:2-FTS	106		50 - 200	11/29/23 12:29	12/01/23 10:13	1
13C2-8:2-FTS	151		50 - 200	11/29/23 12:29	12/01/23 10:13	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		11/21/23 13:23	11/22/23 14:02	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	95		70 - 130	11/21/23 13:23	11/22/23 14:02	1
13C2 PFHxA	107		70 - 130	11/21/23 13:23	11/22/23 14:02	1
13C2 PFDA	107		70 - 130	11/21/23 13:23	11/22/23 14:02	1
13C3-GenX	106		70 - 130	11/21/23 13:23	11/22/23 14:02	1

**Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics I**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Acenaphthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1

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# Client Sample Results

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

Job ID: 380-71238-1

## Client Sample ID: MOANALUA WELLS

## Lab Sample ID: 380-71238-1

Date Collected: 11/13/23 09:50

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

### Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Biphenyl	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Chrysene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/20/23 00:00	12/17/23 03:51	1
Fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Fluorene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Naphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Phenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1
Pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 03:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	50		27 - 133	11/20/23 00:00	12/17/23 03:51	1
(d10-Phenanthrene)	52		43 - 129	11/20/23 00:00	12/17/23 03:51	1
(d12-Chrysene)	78		52 - 144	11/20/23 00:00	12/17/23 03:51	1
(d12-Perylene)	81		36 - 161	11/20/23 00:00	12/17/23 03:51	1
(d8-Naphthalene)	47		25 - 125	11/20/23 00:00	12/17/23 03:51	1

## Client Sample ID: AIEA GULCH WELLS PUMP 2

## Lab Sample ID: 380-71238-2

Date Collected: 11/13/23 10:57

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
2,4'-DDD	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
2,4'-DDE	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
2,4'-DDT	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
2-Methylnaphthalene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
4,4'-DDD	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
4,4'-DDE	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
4,4'-DDT	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Acenaphthene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Acenaphthylene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Acetochlor	<0.099	^+	0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Alachlor	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
alpha-BHC	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
alpha-Chlordane	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-2**

Date Collected: 11/13/23 10:57

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.020		0.020	ug/L		11/19/23 18:50	11/20/23 23:34	1
Atrazine	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Benz(a)anthracene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/19/23 18:50	11/20/23 23:34	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/19/23 18:50	11/20/23 23:34	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/19/23 18:50	11/20/23 23:34	1
beta-BHC	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		11/19/23 18:50	11/20/23 23:34	1
Bromacil	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Butachlor	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Butylbenzylphthalate	<0.49		0.49	ug/L		11/19/23 18:50	11/20/23 23:34	1
Chlorobenzilate	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Chloroneb	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Chlorpyrifos	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Chrysene	<0.020		0.020	ug/L		11/19/23 18:50	11/20/23 23:34	1
delta-BHC	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/19/23 18:50	11/20/23 23:34	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Dieldrin	<0.20		0.20	ug/L		11/19/23 18:50	11/20/23 23:34	1
Diethylphthalate	<0.49		0.49	ug/L		11/19/23 18:50	11/20/23 23:34	1
Dimethylphthalate	<0.49		0.49	ug/L		11/19/23 18:50	11/20/23 23:34	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		11/19/23 18:50	11/20/23 23:34	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Endosulfan sulfate	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Endrin	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Endrin aldehyde	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
EPTC	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Fluoranthene	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Fluorene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
gamma-Chlordane	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Heptachlor	<0.040		0.040	ug/L		11/19/23 18:50	11/20/23 23:34	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Hexachlorobenzene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Isophorone	<0.49		0.49	ug/L		11/19/23 18:50	11/20/23 23:34	1
Lindane	<0.040		0.040	ug/L		11/19/23 18:50	11/20/23 23:34	1
Malathion	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Methoxychlor	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Metolachlor	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Molinate	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Naphthalene	<0.30		0.30	ug/L		11/19/23 18:50	11/20/23 23:34	1
Parathion	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-2**

Date Collected: 11/13/23 10:57

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Phenanthrene	<0.040		0.040	ug/L		11/19/23 18:50	11/20/23 23:34	1
Propachlor	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Pyrene	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Simazine	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Terbacil	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Terbutylazine	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1
Thiobencarb	<0.20		0.20	ug/L		11/19/23 18:50	11/20/23 23:34	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/19/23 18:50	11/20/23 23:34	1
trans-Nonachlor	<0.049		0.049	ug/L		11/19/23 18:50	11/20/23 23:34	1
Trifluralin	<0.099		0.099	ug/L		11/19/23 18:50	11/20/23 23:34	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/19/23 18:50	11/20/23 23:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	11/19/23 18:50	11/20/23 23:34	1
Perylene-d12	99		70 - 130	11/19/23 18:50	11/20/23 23:34	1
Triphenylphosphate	89		70 - 130	11/19/23 18:50	11/20/23 23:34	1

## Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		38 - 134		11/20/23 15:30	1

## Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		11/17/23 15:13	12/08/23 14:33	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		11/17/23 15:13	12/08/23 14:33	1
C8-C18	<25		25	ug/L		11/17/23 15:13	12/08/23 14:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	99		60 - 130	11/17/23 15:13	12/08/23 14:33	1

## Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			11/27/23 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	102		54 - 120		11/27/23 19:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-2**

Date Collected: 11/13/23 10:57

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:23	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	93		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C6 PFDA	111		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C5 PFHxA	100		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C4 PFHpA	108		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C8 PFOA	102		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C9 PFNA	100		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C7 PFUnA	97		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C2 PFDoA	103		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C4 PFBA	100		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C5 PFPeA	107		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C3 PFBS	97		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C3 PFHxS	104		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C8 PFOS	105		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C2-4:2-FTS	119		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C2-6:2-FTS	106		50 - 200	11/29/23 12:29	12/01/23 10:23	1
13C2-8:2-FTS	148		50 - 200	11/29/23 12:29	12/01/23 10:23	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		11/21/23 13:23	11/22/23 14:11	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-2**

**Date Collected: 11/13/23 10:57**

**Matrix: Drinking Water**

**Date Received: 11/15/23 10:00**

**PWSID Number: HI0000331**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	99		70 - 130	11/21/23 13:23	11/22/23 14:11	1
13C2 PFHxA	107		70 - 130	11/21/23 13:23	11/22/23 14:11	1
13C2 PFDA	105		70 - 130	11/21/23 13:23	11/22/23 14:11	1
13C3-GenX	104		70 - 130	11/21/23 13:23	11/22/23 14:11	1

**Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics I**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Acenaphthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Biphenyl	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Chrysene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/20/23 00:00	12/17/23 05:35	1
Fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-2**

Date Collected: 11/13/23 10:57

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

**Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Naphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Phenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1
Pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 05:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	37		27 - 133	11/20/23 00:00	12/17/23 05:35	1
(d10-Phenanthrene)	43		43 - 129	11/20/23 00:00	12/17/23 05:35	1
(d12-Chrysene)	71		52 - 144	11/20/23 00:00	12/17/23 05:35	1
(d12-Perylene)	74		36 - 161	11/20/23 00:00	12/17/23 05:35	1
(d8-Naphthalene)	35		25 - 125	11/20/23 00:00	12/17/23 05:35	1

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

**Lab Sample ID: 380-71238-3**

Date Collected: 11/13/23 11:26

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
2,4'-DDD	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
2,4'-DDE	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
2,4'-DDT	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
2-Methylnaphthalene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
4,4'-DDD	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
4,4'-DDE	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
4,4'-DDT	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Acenaphthene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Acenaphthylene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Acetochlor	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Alachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
alpha-BHC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
alpha-Chlordane	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Anthracene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:20	1
Atrazine	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Benz(a)anthracene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:20	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:20	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:20	1
beta-BHC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Bis(2-ethylhexyl) phtalate	<0.59		0.59	ug/L		11/16/23 16:10	11/17/23 20:20	1
Bromacil	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Butachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Butylbenzylphthalate	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 20:20	1
Chlorobenzilate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Chloroneb	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-3**

Date Collected: 11/13/23 11:26

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Chlorpyrifos	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Chrysene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:20	1
delta-BHC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/16/23 16:10	11/17/23 20:20	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Dieldrin	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 20:20	1
Diethylphthalate	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 20:20	1
Dimethylphthalate	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 20:20	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		11/16/23 16:10	11/17/23 20:20	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Endosulfan sulfate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Endrin	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Endrin aldehyde	<0.099	^3+	0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
EPTC	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Fluoranthene	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Fluorene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
gamma-Chlordane	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Heptachlor	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 20:20	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Hexachlorobenzene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Isophorone	<0.49		0.49	ug/L		11/16/23 16:10	11/17/23 20:20	1
Lindane	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 20:20	1
Malathion	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Methoxychlor	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Metolachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Molinate	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Naphthalene	<0.30		0.30	ug/L		11/16/23 16:10	11/17/23 20:20	1
Parathion	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Phenanthrene	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 20:20	1
Propachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Pyrene	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Simazine	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Terbacil	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Terbutylazine	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1
Thiobencarb	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 20:20	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 20:20	1
trans-Nonachlor	<0.049		0.049	ug/L		11/16/23 16:10	11/17/23 20:20	1
Trifluralin	<0.099		0.099	ug/L		11/16/23 16:10	11/17/23 20:20	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/16/23 16:10	11/17/23 20:20	1

# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-3**

**Date Collected: 11/13/23 11:26**

**Matrix: Drinking Water**

**Date Received: 11/15/23 10:00**

**PWSID Number: HI0000331**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	11/16/23 16:10	11/17/23 20:20	1
Perylene-d12	105		70 - 130	11/16/23 16:10	11/17/23 20:20	1
Triphenylphosphate	117		70 - 130	11/16/23 16:10	11/17/23 20:20	1

**Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 15:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		38 - 134		11/20/23 15:57	1

**Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		11/17/23 15:13	12/08/23 14:53	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		11/17/23 15:13	12/08/23 14:53	1
C8-C18	<25		25	ug/L		11/17/23 15:13	12/08/23 14:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	109		60 - 130	11/17/23 15:13	12/08/23 14:53	1

**Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			11/27/23 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	97		54 - 120		11/27/23 20:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-3**

Date Collected: 11/13/23 11:26

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:33	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C3 HFPO-DA	92		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C6 PFDA	108		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C5 PFHxA	99		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C4 PFHpA	106		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C8 PFOA	101		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C9 PFNA	100		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C7 PFUnA	95		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C2 PFDoA	100		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C4 PFBA	103		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C5 PFPeA	111		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C3 PFBS	93		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C3 PFHxS	100		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C8 PFOS	100		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C2-4:2-FTS	109		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C2-6:2-FTS	104		50 - 200			11/29/23 12:29	12/01/23 10:33	1
13C2-8:2-FTS	135		50 - 200			11/29/23 12:29	12/01/23 10:33	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		11/21/23 13:23	11/22/23 14:21	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-3**

Date Collected: 11/13/23 11:26

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/21/23 13:23	11/22/23 14:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	93		70 - 130	11/21/23 13:23	11/22/23 14:21	1
13C2 PFHxA	101		70 - 130	11/21/23 13:23	11/22/23 14:21	1
13C2 PFDA	106		70 - 130	11/21/23 13:23	11/22/23 14:21	1
13C3-GenX	102		70 - 130	11/21/23 13:23	11/22/23 14:21	1

**Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Acenaphthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Biphenyl	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Chrysene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/20/23 00:00	12/17/23 07:20	1
Fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Fluorene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Naphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Phenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1
Pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 07:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	49		27 - 133	11/20/23 00:00	12/17/23 07:20	1
(d10-Phenanthrene)	51		43 - 129	11/20/23 00:00	12/17/23 07:20	1
(d12-Chrysene)	81		52 - 144	11/20/23 00:00	12/17/23 07:20	1
(d12-Perylene)	84		36 - 161	11/20/23 00:00	12/17/23 07:20	1
(d8-Naphthalene)	48		25 - 125	11/20/23 00:00	12/17/23 07:20	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4**

Date Collected: 11/13/23 10:23

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
2,4'-DDD	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
2,4'-DDE	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
2,4'-DDT	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
2,4-Dinitrotoluene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
2,6-Dinitrotoluene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
2-Methylnaphthalene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
4,4'-DDD	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
4,4'-DDE	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
4,4'-DDT	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Acenaphthene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Acenaphthylene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Acetochlor	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Alachlor	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
alpha-BHC	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
alpha-Chlordane	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Anthracene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:40	1
Atrazine	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Benz(a)anthracene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:40	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:40	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:40	1
beta-BHC	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		11/16/23 16:10	11/17/23 20:40	1
Bromacil	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Butachlor	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Butylbenzylphthalate	<0.50		0.50	ug/L		11/16/23 16:10	11/17/23 20:40	1
Chlorobenzilate	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Chloroneb	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Chlorothalonil (Draconil, Bravo)	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Chlorpyrifos	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Chrysene	<0.020		0.020	ug/L		11/16/23 16:10	11/17/23 20:40	1
delta-BHC	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		11/16/23 16:10	11/17/23 20:40	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Dieldrin	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 20:40	1
Diethylphthalate	<0.50		0.50	ug/L		11/16/23 16:10	11/17/23 20:40	1
Dimethylphthalate	<0.50		0.50	ug/L		11/16/23 16:10	11/17/23 20:40	1
Di-n-butyl phthalate	<1.0		1.0	ug/L		11/16/23 16:10	11/17/23 20:40	1
Di-n-octyl phthalate	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Endosulfan I (Alpha)	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Endosulfan II (Beta)	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Endosulfan sulfate	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Endrin	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Endrin aldehyde	<0.10	^3+	0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
EPTC	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Fluoranthene	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4**

Date Collected: 11/13/23 10:23

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
gamma-Chlordane	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Heptachlor	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 20:40	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Hexachlorobenzene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Isophorone	<0.50		0.50	ug/L		11/16/23 16:10	11/17/23 20:40	1
Lindane	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 20:40	1
Malathion	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Methoxychlor	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Metolachlor	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Molinate	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Naphthalene	<0.30		0.30	ug/L		11/16/23 16:10	11/17/23 20:40	1
Parathion	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Pendimethalin (Penoxaline)	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Phenanthrene	<0.040		0.040	ug/L		11/16/23 16:10	11/17/23 20:40	1
Propachlor	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Pyrene	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Simazine	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Terbacil	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Terbutylazine	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1
Thiobencarb	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 20:40	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/16/23 16:10	11/17/23 20:40	1
trans-Nonachlor	<0.050		0.050	ug/L		11/16/23 16:10	11/17/23 20:40	1
Trifluralin	<0.10		0.10	ug/L		11/16/23 16:10	11/17/23 20:40	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	11/16/23 16:10	11/17/23 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	11/16/23 16:10	11/17/23 20:40	1
Perylene-d12	107		70 - 130	11/16/23 16:10	11/17/23 20:40	1
Triphenylphosphate	112		70 - 130	11/16/23 16:10	11/17/23 20:40	1

## Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		38 - 134		11/20/23 16:23	1

## Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		11/17/23 15:13	12/08/23 15:14	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		11/17/23 15:13	12/08/23 15:14	1
C8-C18	<25		25	ug/L		11/17/23 15:13	12/08/23 15:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	105		60 - 130	11/17/23 15:13	12/08/23 15:14	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4**

Date Collected: 11/13/23 10:23

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

**Method: SW846 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			11/27/23 20:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Hexafluoro-2-propanol (Surr)	106		54 - 120				11/27/23 20:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.6</b>		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.0</b>		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.4</b>		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.1</b>		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>2.4</b>		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:42	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	94		50 - 200			11/29/23 12:29	12/01/23 10:42	1
13C6 PFDA	106		50 - 200			11/29/23 12:29	12/01/23 10:42	1
13C5 PFHxA	98		50 - 200			11/29/23 12:29	12/01/23 10:42	1
13C4 PFHpA	103		50 - 200			11/29/23 12:29	12/01/23 10:42	1
13C8 PFOA	97		50 - 200			11/29/23 12:29	12/01/23 10:42	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4**

Date Collected: 11/13/23 10:23

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C9 PFNA	96		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C7 PFUnA	94		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C2 PFDoA	98		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C4 PFBA	99		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C5 PFPeA	109		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C3 PFBS	93		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C3 PFHxS	102		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C8 PFOS	104		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C2-4:2-FTS	125		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C2-6:2-FTS	109		50 - 200	11/29/23 12:29	12/01/23 10:42	1
13C2-8:2-FTS	143		50 - 200	11/29/23 12:29	12/01/23 10:42	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		11/22/23 08:34	11/27/23 17:53	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>2.2</b>		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>2.2</b>		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.0</b>		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.7</b>		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 17:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	102		70 - 130	11/22/23 08:34	11/27/23 17:53	1
13C2 PFHxA	119		70 - 130	11/22/23 08:34	11/27/23 17:53	1
13C2 PFDA	114		70 - 130	11/22/23 08:34	11/27/23 17:53	1
13C3-GenX	118		70 - 130	11/22/23 08:34	11/27/23 17:53	1

**Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1

Eurofins Eaton Analytical Pomona

# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4**

Date Collected: 11/13/23 10:23

Matrix: Drinking Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

**Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Acenaphthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Biphenyl	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Chrysene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/20/23 00:00	12/17/23 09:05	1
Fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Fluorene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Naphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Phenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/17/23 09:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	37		27 - 133				11/20/23 00:00	12/17/23 09:05	1
(d10-Phenanthrene)	44		43 - 129				11/20/23 00:00	12/17/23 09:05	1
(d12-Chrysene)	74		52 - 144				11/20/23 00:00	12/17/23 09:05	1
(d12-Perylene)	79		36 - 161				11/20/23 00:00	12/17/23 09:05	1
(d8-Naphthalene)	36		25 - 125				11/20/23 00:00	12/17/23 09:05	1

**Client Sample ID: TB MOANALUA WELLS**

**Lab Sample ID: 380-71238-5**

Date Collected: 11/13/23 09:50

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

**Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
GRO (C6-C10)	<10		10	ug/L			11/20/23 13:20	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	61		38 - 134				11/20/23 13:20	1	

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

**Lab Sample ID: 380-71238-6**

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

**Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 13:46	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

Lab Sample ID: 380-71238-6

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		38 - 134		11/20/23 13:46	1

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

Lab Sample ID: 380-71238-7

Date Collected: 11/13/23 11:26

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 14:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		38 - 134		11/20/23 14:12	1

## Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-71238-8

Date Collected: 11/13/23 10:23

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

### Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			11/20/23 14:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		38 - 134		11/20/23 14:38	1

## Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-71238-9

Date Collected: 11/13/23 09:50

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

### 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		11/29/23 12:29	12/01/23 10:52	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1

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# Client Sample Results

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

Job ID: 380-71238-1

**Client Sample ID: FB MOANALUA WELLS**

**Lab Sample ID: 380-71238-9**

Date Collected: 11/13/23 09:50

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 10:52	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	75		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C6 PFDA	113		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C5 PFHxA	96		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C4 PFHpA	104		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C8 PFOA	104		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C9 PFNA	101		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C7 PFUnA	100		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C2 PFDoA	103		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C4 PFBA	92		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C5 PFPeA	97		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C3 PFBS	99		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C3 PFHxS	108		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C8 PFOS	107		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C2-4:2-FTS	121		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C2-6:2-FTS	115		50 - 200			11/29/23 12:29	12/01/23 10:52	1
13C2-8:2-FTS	148		50 - 200			11/29/23 12:29	12/01/23 10:52	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		11/22/23 08:34	11/27/23 18:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1

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# Client Sample Results

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

Job ID: 380-71238-1

## Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-71238-9

Date Collected: 11/13/23 09:50

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	104		70 - 130			11/22/23 08:34	11/27/23 18:22	1
13C2 PFHxA	119		70 - 130			11/22/23 08:34	11/27/23 18:22	1
13C2 PFDA	116		70 - 130			11/22/23 08:34	11/27/23 18:22	1
13C3-GenX	121		70 - 130			11/22/23 08:34	11/27/23 18:22	1

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

Lab Sample ID: 380-71238-10

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

### 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		11/29/23 12:29	12/01/23 11:01	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-10**

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:01	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	79		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C6 PFDA	113		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C5 PFHxA	103		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C4 PFHpA	110		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C8 PFOA	105		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C9 PFNA	101		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C7 PFUnA	104		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C2 PFDoA	101		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C4 PFBA	98		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C5 PFPeA	101		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C3 PFBS	98		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C3 PFHxS	105		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C8 PFOS	105		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C2-4:2-FTS	119		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C2-6:2-FTS	114		50 - 200			11/29/23 12:29	12/01/23 11:01	1
13C2-8:2-FTS	150		50 - 200			11/29/23 12:29	12/01/23 11:01	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		11/22/23 08:34	11/27/23 18:32	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	101		70 - 130			11/22/23 08:34	11/27/23 18:32	1
13C2 PFHxA	118		70 - 130			11/22/23 08:34	11/27/23 18:32	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

Lab Sample ID: 380-71238-10

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C2 PFDA	114		70 - 130	11/22/23 08:34	11/27/23 18:32	1
<sup>13</sup> C3-GenX	122		70 - 130	11/22/23 08:34	11/27/23 18:32	1

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

Lab Sample ID: 380-71238-11

Date Collected: 11/13/23 11:26

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafuoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:11	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
<sup>13</sup> C3 HFPO-DA	74		50 - 200	11/29/23 12:29	12/01/23 11:11	1		
<sup>13</sup> C6 PFDA	102		50 - 200	11/29/23 12:29	12/01/23 11:11	1		
<sup>13</sup> C5 PFHxA	97		50 - 200	11/29/23 12:29	12/01/23 11:11	1		
<sup>13</sup> C4 PFHpA	98		50 - 200	11/29/23 12:29	12/01/23 11:11	1		

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-11**

Date Collected: 11/13/23 11:26

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 PFOA	94		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C9 PFNA	93		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C7 PFUnA	93		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C2 PFDoA	97		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C4 PFBA	96		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C5 PFPeA	103		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C3 PFBS	86		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C3 PFHxS	99		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C8 PFOS	99		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C2-4:2-FTS	117		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C2-6:2-FTS	109		50 - 200	11/29/23 12:29	12/01/23 11:11	1
13C2-8:2-FTS	141		50 - 200	11/29/23 12:29	12/01/23 11:11	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		11/22/23 08:34	11/27/23 18:42	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
N-methylperfluorooctanesulfonamide acetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
N-ethylperfluorooctanesulfonamide acetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	100		70 - 130	11/22/23 08:34	11/27/23 18:42	1
13C2 PFHxA	116		70 - 130	11/22/23 08:34	11/27/23 18:42	1
13C2 PFDA	118		70 - 130	11/22/23 08:34	11/27/23 18:42	1
13C3-GenX	118		70 - 130	11/22/23 08:34	11/27/23 18:42	1

# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-12**

**Date Collected: 11/13/23 10:23**

**Matrix: Water**

**Date Received: 11/15/23 10:00**

**PWSID Number: HI0000331**

**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		11/29/23 12:29	12/01/23 11:30	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluorobutanoic acid (PFBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	ng/L		11/29/23 12:29	12/01/23 11:30	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	87		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C6 PFDA	103		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C5 PFHxA	97		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C4 PFHpA	102		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C8 PFOA	104		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C9 PFNA	99		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C7 PFUnA	91		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C2 PFDoA	97		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C4 PFBA	99		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C5 PFPeA	102		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C3 PFBS	96		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C3 PFHxS	104		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C8 PFOS	104		50 - 200	11/29/23 12:29	12/01/23 11:30	1

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# Client Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-12**

Date Collected: 11/13/23 10:23

Matrix: Water

Date Received: 11/15/23 10:00

PWSID Number: HI0000331

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-4:2-FTS	123		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C2-6:2-FTS	113		50 - 200	11/29/23 12:29	12/01/23 11:30	1
13C2-8:2-FTS	149		50 - 200	11/29/23 12:29	12/01/23 11:30	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		11/22/23 08:34	11/27/23 18:51	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
N-methylperfluorooctanesulfonamideacetic acid (NMeFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
N-ethylperfluorooctanesulfonamideacetic acid (NEtFOSAA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorotetradecanoic acid (PFTA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
Perfluorotridecanoic acid (PFTrDA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	ng/L		11/22/23 08:34	11/27/23 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	92		70 - 130	11/22/23 08:34	11/27/23 18:51	1
13C2 PFHxA	105		70 - 130	11/22/23 08:34	11/27/23 18:51	1
13C2 PFDA	104		70 - 130	11/22/23 08:34	11/27/23 18:51	1
13C3-GenX	105		70 - 130	11/22/23 08:34	11/27/23 18:51	1

# Action Limit Summary

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

Job ID: 380-71238-1

**Client Sample ID: MOANALUA WELLS**

**Lab Sample ID: 380-71238-1**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6		0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400		0.59	525.2	Total/NA
Endrin	<0.099		ug/L	2		0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4		0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1		0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50		0.049	525.2	Total/NA
Lindane	<0.040		ug/L	0.2		0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40		0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

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

**Lab Sample ID: 380-71238-2**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL		RL	Method	Prep Type
				Limit				
Alachlor	<0.049		ug/L	2		0.049	525.2	Total/NA
Atrazine	<0.049		ug/L	3		0.049	525.2	Total/NA
Benzo[a]pyrene	<0.020		ug/L	0.2		0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6		0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400		0.59	525.2	Total/NA
Endrin	<0.099		ug/L	2		0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4		0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2		0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1		0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50		0.049	525.2	Total/NA
Lindane	<0.040		ug/L	0.2		0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40		0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4		0.049	525.2	Total/NA

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

**Lab Sample ID: 380-71238-3**

**PWSID Number: HI0000331**

## Compliance Check

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

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

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# Action Limit Summary

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-3**

**(Continued)**

**PWSID Number: HI0000331**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Benzo[a]pyrene	<0.020		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	<0.59		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	<0.59		ug/L	400	0.59	525.2	Total/NA
Endrin	<0.099		ug/L	2	0.099	525.2	Total/NA
Heptachlor	<0.040		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	<0.049		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	<0.049		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	<0.049		ug/L	50	0.049	525.2	Total/NA
Lindane	<0.040		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	<0.099		ug/L	40	0.099	525.2	Total/NA
Simazine	<0.049		ug/L	4	0.049	525.2	Total/NA

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

**Lab Sample ID: 380-71238-4**

**PWSID Number: HI0000331**

## Compliance Check

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

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

# Surrogate Summary

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

Job ID: 380-71238-1

## 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)
380-71238-1	MOANALUA WELLS	98	104	111
380-71238-1 DU	MOANALUA WELLS	98	104	110
380-71238-2	AIEA GULCH WELLS PUMP 2	96	99	89
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	98	105	117
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	99	107	112

**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)
380-71755-B-1-B DU	Duplicate	99	100	103
380-70928-AI-1-A MS	Matrix Spike	98	106	115
380-71418-CB-1-B MS	Matrix Spike	99	95	106
LCS 380-64090/21-A	Lab Control Sample	96	104	111
LCS 380-64471/23-A	Lab Control Sample	97	96	101
MB 380-64090/19-A	Method Blank	98	99	111
MB 380-64471/21-A	Method Blank	99	91	101
MRL 380-64090/20-A	Lab Control Sample	98	102	110
MRL 380-64471/22-A	Lab Control Sample	99	97	100

**Surrogate Legend**

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

## Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB1 (38-134)
380-71238-1	MOANALUA WELLS	98
380-71238-1 MS	MOANALUA WELLS	80
380-71238-1 MSD	MOANALUA WELLS	102
380-71238-2	AIEA GULCH WELLS PUMP 2	74
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	97
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	92

**Surrogate Legend**

BFB = 4-Bromofluorobenzene (Surr)

# Surrogate Summary

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

Job ID: 380-71238-1

## Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-71238-5	TB MOANALUA WELLS	61
380-71238-6	TB AIEA GULCH WELLS PUMP 2	93
380-71238-7	TB AIEA WELLS PUMPS 1&2 (260)	94
380-71238-8	TB HALAWA WELLS UNITS 1 & 2 P1	94
LCS 570-385386/4	Lab Control Sample	77
LCSD 570-385386/5	Lab Control Sample Dup	98
MB 570-385386/6	Method Blank	86
MRL 570-385386/3	Lab Control Sample	84

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
380-71238-1	MOANALUA WELLS	108
380-71238-2	AIEA GULCH WELLS PUMP 2	99
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	109
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	105

#### Surrogate Legend

OTCSN = n-Octacosane (Surr)

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
LCS 570-384933/2-A	Lab Control Sample	70
LCSD 570-384933/3-A	Lab Control Sample Dup	107
MB 570-384933/1-A	Method Blank	104
MRL 570-384933/4-A	Lab Control Sample	107

#### Surrogate Legend

OTCSN = n-Octacosane (Surr)

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HF2PP2 (54-120)
380-71238-1	MOANALUA WELLS	100 p
380-71238-1 MS	MOANALUA WELLS	91
380-71238-1 MSD	MOANALUA WELLS	94 p



# Surrogate Summary

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

Job ID: 380-71238-1

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Matrix: Drinking Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HF2PP2 (54-120)
380-71238-2	AIEA GULCH WELLS PUMP 2	102
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	97
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	106

**Surrogate Legend**

HF2PP2 = Hexafluoro-2-propanol (Surr)

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HF2PP2 (54-120)
LCS 570-386980/4	Lab Control Sample	98
LCS 570-386980/5	Lab Control Sample Dup	95
MB 570-386980/3	Method Blank	94
MRL 570-386980/6	Lab Control Sample	106

**Surrogate Legend**

HF2PP2 = Hexafluoro-2-propanol (Surr)

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

Matrix: Drinking 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)
380-71238-1	MOANALUA WELLS	95	107	107	106
380-71238-2	AIEA GULCH WELLS PUMP 2	99	107	105	104
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	93	101	106	102
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	102	119	114	118
380-71238-4 MS	HALAWA WELLS UNITS 1 & 2 P1	104	120	121	119
380-71238-4 MSD	HALAWA WELLS UNITS 1 & 2 P1	106	109	114	111

**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

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	d5NEFOS (70-130)	PFHxA (70-130)	PFDA (70-130)	GenX (70-130)
380-70935-E-1-A MS	Matrix Spike	84	109	99	113
380-70935-F-1-A MSD	Matrix Spike Duplicate	90	106	101	108

# Surrogate Summary

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

Job ID: 380-71238-1

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

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)
380-71238-9	FB MOANALUA WELLS	104	119	116	121
380-71238-10	FB AIEA GULCH WELLS PUMP 2	101	118	114	122
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	100	116	118	118
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	92	105	104	105
LCS 380-64812/25-A	Lab Control Sample	99	118	115	119
LCS 380-64928/25-A	Lab Control Sample	96	119	115	126
LCS 380-64812/26-A	Lab Control Sample Dup	93	112	109	110
LCS 380-64928/26-A	Lab Control Sample Dup	97	116	113	118
MBL 380-64812/23-A	Method Blank	104	107	107	103
MBL 380-64928/23-A	Method Blank	102	112	108	113
MRL 380-64812/24-A	Lab Control Sample	100	110	107	105
MRL 380-64928/24-A	Lab Control Sample	99	119	117	116

### Surrogate Legend

d5NEFOS = d5-NEtFOSAA

PFHxA = 13C2 PFHxA

PFDA = 13C2 PFDA

GenX = 13C3-GenX

## Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
112871-B1	Method Blank	94	97	89	89	91
112871-BS1	Lab Control Sample	101	98	95	98	88
112871-BS2	Lab Control Sample Dup	100	98	95	95	89

### Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

## Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-71238-1	MOANALUA WELLS	50	52	78	47	81
380-71238-2	AIEA GULCH WELLS PUMP 2	37	43	71	35	74
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	49	51	81	48	84
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	37	44	74	36	79

### Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

Eurofins Eaton Analytical Pomona

# Surrogate Summary

Client: City & County of Honolulu

Project/Site: RED-HILL

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

Job ID: 380-71238-1

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# Isotope Dilution Summary

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

Job ID: 380-71238-1

## 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)
380-71238-1	MOANALUA WELLS	93	106	103	110	101	100	100	103
380-71238-2	AIEA GULCH WELLS PUMP 2	93	111	100	108	102	100	97	103
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	92	108	99	106	101	100	95	100
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	94	106	98	103	97	96	94	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)
380-71238-1	MOANALUA WELLS	105	109	94	101	102	118	106	151
380-71238-2	AIEA GULCH WELLS PUMP 2	100	107	97	104	105	119	106	148
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	103	111	93	100	100	109	104	135
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	99	109	93	102	104	125	109	143

### 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)
380-71238-9	FB MOANALUA WELLS	75	113	96	104	104	101	100	103
380-71238-10	FB AIEA GULCH WELLS PUMP 2	79	113	103	110	105	101	104	101
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	74	102	97	98	94	93	93	97
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	87	103	97	102	104	99	91	97
380-71249-B-1-A LMS	Matrix Spike	57	77	70	71	71	67	66	71
380-71249-C-1-A LMSD	Matrix Spike Duplicate	98	110	106	109	106	103	97	104
LCS 380-65757/23-A	Lab Control Sample	91	110	103	108	104	104	98	109
LCS 380-65757/24-A	Lab Control Sample Dup	98	114	103	109	107	105	100	107
MBL 380-65757/21-A	Method Blank	96	102	98	104	98	96	90	95

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# Isotope Dilution Summary

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

Job ID: 380-71238-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
MRL 380-65757/22-A	Lab Control Sample	82	109	95	102	98	100	98	106

		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)
380-71238-9	FB MOANALUA WELLS	92	97	99	108	107	121	115	148
380-71238-10	FB AIEA GULCH WELLS PUMP 2	98	101	98	105	105	119	114	150
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	96	103	86	99	99	117	109	141
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	99	102	96	104	104	123	113	149
380-71249-B-1-A LMS	Matrix Spike	70	72	71	78	73	82	81	113
380-71249-C-1-A LMSD	Matrix Spike Duplicate	103	109	97	100	100	111	102	134
LCS 380-65757/23-A	Lab Control Sample	108	117	95	101	106	101	97	133
LCSD 380-65757/24-A	Lab Control Sample Dup	105	112	99	104	106	106	110	133
MBL 380-65757/21-A	Method Blank	104	107	94	103	103	111	120	145
MRL 380-65757/22-A	Lab Control Sample	96	100	100	104	105	108	101	135

**Surrogate Legend**

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

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MB 380-64090/19-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
2,4'-DDD	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
2,4'-DDE	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
2,4'-DDT	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
2,4-Dinitrotoluene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
2,6-Dinitrotoluene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
2-Methylnaphthalene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
4,4'-DDD	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
4,4'-DDE	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
4,4'-DDT	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Acenaphthene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Acenaphthylene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Acetochlor	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Alachlor	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
alpha-BHC	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
alpha-Chlordane	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Anthracene	<0.020		0.020	ug/L		11/16/23 14:58	11/17/23 16:42	1
Atrazine	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Benz(a)anthracene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/16/23 14:58	11/17/23 16:42	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/16/23 14:58	11/17/23 16:42	1
Benzo[g,h,i]perylene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/16/23 14:58	11/17/23 16:42	1
beta-BHC	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Bis(2-ethylhexyl) phthalate	<0.60		0.60	ug/L		11/16/23 14:58	11/17/23 16:42	1
Bromacil	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Butachlor	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Butylbenzylphthalate	<0.50		0.50	ug/L		11/16/23 14:58	11/17/23 16:42	1
Chlorobenzilate	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Chloroneb	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Chlorothalonil (Draconil, Bravo)	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Chlorpyrifos	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Chrysene	<0.020		0.020	ug/L		11/16/23 14:58	11/17/23 16:42	1
delta-BHC	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Di(2-ethylhexyl)adipate	<0.60		0.60	ug/L		11/16/23 14:58	11/17/23 16:42	1
Dibenz(a,h)anthracene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Diclorvos (DDVP)	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Dieldrin	<0.20		0.20	ug/L		11/16/23 14:58	11/17/23 16:42	1
Diethylphthalate	<0.50		0.50	ug/L		11/16/23 14:58	11/17/23 16:42	1
Dimethylphthalate	<0.50		0.50	ug/L		11/16/23 14:58	11/17/23 16:42	1
Di-n-butyl phthalate	<0.99		0.99	ug/L		11/16/23 14:58	11/17/23 16:42	1
Di-n-octyl phthalate	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Endosulfan I (Alpha)	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Endosulfan II (Beta)	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Endosulfan sulfate	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Endrin	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Endrin aldehyde	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
EPTC	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MB 380-64090/19-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Fluorene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
gamma-Chlordane	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Heptachlor	<0.040		0.040	ug/L		11/16/23 14:58	11/17/23 16:42	1
Heptachlor epoxide (isomer B)	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Hexachlorobenzene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Hexachlorocyclopentadiene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Indeno[1,2,3-cd]pyrene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Isophorone	<0.50		0.50	ug/L		11/16/23 14:58	11/17/23 16:42	1
Lindane	<0.040		0.040	ug/L		11/16/23 14:58	11/17/23 16:42	1
Malathion	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Methoxychlor	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Metolachlor	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Molinate	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Naphthalene	<0.30		0.30	ug/L		11/16/23 14:58	11/17/23 16:42	1
Parathion	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Pendimethalin (Penoxaline)	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Phenanthrene	<0.040		0.040	ug/L		11/16/23 14:58	11/17/23 16:42	1
Propachlor	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Pyrene	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Simazine	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Terbacil	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Terbutylazine	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1
Thiobencarb	<0.20		0.20	ug/L		11/16/23 14:58	11/17/23 16:42	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/16/23 14:58	11/17/23 16:42	1
trans-Nonachlor	<0.050		0.050	ug/L		11/16/23 14:58	11/17/23 16:42	1
Trifluralin	<0.099		0.099	ug/L		11/16/23 14:58	11/17/23 16:42	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane	2.51	T J N	ug/L		2.39	124-18-5	11/16/23 14:58	11/17/23 16:42	1
Unknown	0.635	T J	ug/L		9.39	N/A	11/16/23 14:58	11/17/23 16:42	1
Unknown	0.678	T J	ug/L		10.13	N/A	11/16/23 14:58	11/17/23 16:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	11/16/23 14:58	11/17/23 16:42	1
Perylene-d12	99		70 - 130	11/16/23 14:58	11/17/23 16:42	1
Triphenylphosphate	111		70 - 130	11/16/23 14:58	11/17/23 16:42	1

**Lab Sample ID: LCS 380-64090/21-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.99	1.97		ug/L		99	70 - 130
2,4'-DDD	1.99	2.03		ug/L		102	70 - 130
2,4'-DDE	1.99	2.04		ug/L		103	70 - 130
2,4'-DDT	1.99	1.92		ug/L		97	70 - 130
2,4-Dinitrotoluene	1.99	2.14		ug/L		108	70 - 130

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-64090/21-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.99	2.10		ug/L		106	70 - 130
2-Methylnaphthalene	1.99	2.07		ug/L		104	70 - 130
4,4'-DDD	1.99	2.00		ug/L		101	70 - 130
4,4'-DDE	1.99	1.97		ug/L		99	70 - 130
4,4'-DDT	1.99	1.81		ug/L		91	70 - 130
Acenaphthene	1.99	1.89		ug/L		95	70 - 130
Acenaphthylene	1.99	1.91		ug/L		96	70 - 130
Acetochlor	1.99	1.84		ug/L		93	70 - 130
Alachlor	1.99	2.19		ug/L		110	70 - 130
alpha-BHC	1.99	2.00		ug/L		101	70 - 130
alpha-Chlordane	1.99	2.24		ug/L		113	70 - 130
Anthracene	1.99	2.08		ug/L		105	70 - 130
Atrazine	1.99	2.22		ug/L		112	70 - 130
Benz(a)anthracene	1.99	2.01		ug/L		101	70 - 130
Benzo[a]pyrene	1.99	2.09		ug/L		105	70 - 130
Benzo[b]fluoranthene	1.99	2.11		ug/L		106	70 - 130
Benzo[g,h,i]perylene	1.99	2.07		ug/L		104	70 - 130
Benzo[k]fluoranthene	1.99	2.01		ug/L		101	70 - 130
beta-BHC	1.99	1.97		ug/L		99	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	1.68		ug/L		85	70 - 130
Bromacil	1.99	2.44		ug/L		123	70 - 130
Butachlor	1.99	2.31		ug/L		116	70 - 130
Butylbenzylphthalate	1.99	2.21		ug/L		111	70 - 130
Chlorobenzilate	1.99	2.27		ug/L		114	70 - 130
Chloroneb	1.99	2.10		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	2.21		ug/L		111	70 - 130
Chlorpyrifos	1.99	2.21		ug/L		111	70 - 130
Chrysene	1.99	1.96		ug/L		99	70 - 130
delta-BHC	1.99	2.00		ug/L		101	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.02		ug/L		101	70 - 130
Dibenz(a,h)anthracene	1.99	2.10		ug/L		106	70 - 130
Diclorvos (DDVP)	1.99	1.82		ug/L		92	70 - 130
Dieldrin	1.99	2.06		ug/L		104	70 - 130
Diethylphthalate	1.99	2.07		ug/L		104	70 - 130
Dimethylphthalate	1.99	2.14		ug/L		108	70 - 130
Di-n-butyl phthalate	3.97	4.22		ug/L		106	70 - 130
Di-n-octyl phthalate	1.99	1.43		ug/L		72	70 - 130
Endosulfan I (Alpha)	1.99	2.03		ug/L		102	70 - 130
Endosulfan II (Beta)	1.99	2.13		ug/L		107	70 - 130
Endosulfan sulfate	1.99	2.39		ug/L		120	70 - 130
Endrin	1.99	2.14		ug/L		108	70 - 130
Endrin aldehyde	1.99	2.10		ug/L		106	70 - 130
EPTC	1.99	2.26		ug/L		114	70 - 130
Fluoranthene	1.99	2.10		ug/L		106	70 - 130
Fluorene	1.99	2.09		ug/L		105	70 - 130
gamma-Chlordane	1.99	2.21		ug/L		111	70 - 130
Heptachlor	1.99	2.00		ug/L		101	70 - 130
Heptachlor epoxide (isomer B)	1.99	2.51		ug/L		126	70 - 130
Hexachlorobenzene	1.99	2.13		ug/L		107	70 - 130

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-64090/21-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorocyclopentadiene	1.99	2.04		ug/L		103	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.12		ug/L		107	70 - 130
Isophorone	1.99	1.70		ug/L		86	70 - 130
Lindane	1.99	2.08		ug/L		105	70 - 130
Malathion	1.99	2.33		ug/L		117	70 - 130
Methoxychlor	1.99	1.95		ug/L		98	70 - 130
Metolachlor	1.99	2.12		ug/L		107	70 - 130
Molinate	1.99	2.10		ug/L		106	70 - 130
Naphthalene	1.99	1.88		ug/L		95	70 - 130
Parathion	1.99	1.96		ug/L		99	70 - 130
Pendimethalin (Penoxaline)	1.99	2.06		ug/L		104	70 - 130
Phenanthrene	1.99	2.03		ug/L		102	70 - 130
Propachlor	1.99	2.08		ug/L		104	70 - 130
Pyrene	1.99	2.08		ug/L		104	70 - 130
Simazine	1.99	2.31		ug/L		116	70 - 130
Terbacil	1.99	2.12		ug/L		107	70 - 130
Terbutylazine	1.99	2.14		ug/L		108	70 - 130
Thiobencarb	1.99	1.95		ug/L		98	70 - 130
trans-Nonachlor	1.99	2.05		ug/L		103	70 - 130
Trifluralin	1.99	2.51		ug/L		126	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	96		70 - 130
Perylene-d12	104		70 - 130
Triphenylphosphate	111		70 - 130

**Lab Sample ID: MRL 380-64090/20-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0992	0.116		ug/L		117	50 - 150
2,4'-DDD	0.0992	0.126		ug/L		127	50 - 150
2,4'-DDE	0.0992	0.0950	J	ug/L		96	50 - 150
2,4'-DDT	0.0992	0.0786	J	ug/L		79	50 - 150
2,4-Dinitrotoluene	0.0992	0.0880	J	ug/L		89	50 - 150
2,6-Dinitrotoluene	0.0992	0.0941	J	ug/L		95	50 - 150
2-Methylnaphthalene	0.0992	0.114		ug/L		115	50 - 150
4,4'-DDD	0.0992	0.0906	J	ug/L		91	50 - 150
4,4'-DDE	0.0992	0.130		ug/L		131	50 - 150
4,4'-DDT	0.0992	0.106		ug/L		107	50 - 150
Acenaphthene	0.0992	0.0987	J	ug/L		99	50 - 150
Acenaphthylene	0.0992	0.0867	J	ug/L		87	50 - 150
Acetochlor	0.0496	0.0426	J	ug/L		86	50 - 150
Alachlor	0.0496	0.0516		ug/L		104	50 - 150
alpha-BHC	0.0992	0.0987	J	ug/L		99	50 - 150
alpha-Chlordane	0.0248	0.0303	J	ug/L		122	50 - 150
Anthracene	0.0198	0.0192	J	ug/L		97	50 - 150

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-64090/20-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Atrazine	0.0496	0.0537		ug/L		108	50 - 150
Benz(a)anthracene	0.0496	0.0381	J	ug/L		77	50 - 150
Benzo[a]pyrene	0.0198	0.0152	J	ug/L		77	50 - 150
Benzo[b]fluoranthene	0.0198	0.0170	J	ug/L		86	50 - 150
Benzo[g,h,i]perylene	0.0496	0.0431	J	ug/L		87	50 - 150
Benzo[k]fluoranthene	0.0198	<0.017		ug/L		84	50 - 150
beta-BHC	0.0992	0.0985	J	ug/L		99	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.588	J	ug/L		99	50 - 150
Bromacil	0.0992	0.108		ug/L		108	50 - 150
Butachlor	0.0496	0.0545		ug/L		110	50 - 150
Butylbenzylphthalate	0.149	0.156	J	ug/L		105	50 - 150
Chlorobenzilate	0.0992	0.110		ug/L		110	50 - 150
Chloroneb	0.0992	0.125		ug/L		126	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0992	0.149		ug/L		150	50 - 150
Chlorpyrifos	0.0496	0.0536		ug/L		108	50 - 150
Chrysene	0.0198	0.0183	J	ug/L		92	50 - 150
delta-BHC	0.0992	0.106		ug/L		107	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.347	J	ug/L		117	50 - 150
Dibenz(a,h)anthracene	0.0496	0.0398	J	ug/L		80	50 - 150
Diclorvos (DDVP)	0.0496	0.0653		ug/L		132	50 - 150
Dieldrin	0.0992	0.0922	J	ug/L		93	50 - 150
Diethylphthalate	0.149	0.166	J	ug/L		112	50 - 150
Dimethylphthalate	0.298	0.311	J	ug/L		104	50 - 150
Di-n-butyl phthalate	0.298	0.387	J	ug/L		130	49 - 243
Di-n-octyl phthalate	0.0992	0.113		ug/L		114	50 - 150
Endosulfan I (Alpha)	0.0992	0.100		ug/L		101	50 - 150
Endosulfan II (Beta)	0.0992	0.136		ug/L		137	50 - 150
Endosulfan sulfate	0.0992	0.0987	J	ug/L		100	50 - 150
Endrin	0.0992	0.0918	J	ug/L		93	50 - 150
Endrin aldehyde	0.0992	0.155	^3+	ug/L		157	50 - 150
EPTC	0.0992	0.111		ug/L		112	50 - 150
Fluoranthene	0.0496	0.0514	J	ug/L		104	50 - 150
Fluorene	0.0496	0.0502		ug/L		101	50 - 150
gamma-Chlordane	0.0248	0.0315	J	ug/L		127	50 - 150
Heptachlor	0.0397	0.0429		ug/L		108	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0659		ug/L		133	50 - 150
Hexachlorobenzene	0.0496	0.0496	J	ug/L		100	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0444	J	ug/L		89	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0415	J	ug/L		84	50 - 150
Isophorone	0.0992	0.0966	J	ug/L		97	50 - 150
Lindane	0.0397	0.0450		ug/L		113	50 - 150
Malathion	0.0992	0.0985	J	ug/L		99	50 - 150
Methoxychlor	0.0992	0.0918	J	ug/L		93	50 - 150
Metolachlor	0.0496	0.0530		ug/L		107	50 - 150
Molinate	0.0992	0.108		ug/L		109	50 - 150
Naphthalene	0.0992	0.118	J	ug/L		119	50 - 150
Parathion	0.0992	0.122		ug/L		123	50 - 150
Pendimethalin (Penoxaline)	0.0992	0.0914	J	ug/L		92	50 - 150
Phenanthrene	0.0198	0.0220	J	ug/L		111	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-64090/20-A**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	0.0496	0.0514		ug/L		104	50 - 150
Pyrene	0.0496	0.0495	J	ug/L		100	50 - 150
Simazine	0.0496	0.0510		ug/L		103	50 - 150
Terbacil	0.0992	0.0994		ug/L		100	50 - 150
Terbutylazine	0.0992	0.105		ug/L		106	50 - 150
Thiobencarb	0.0992	0.108	J	ug/L		109	50 - 150
trans-Nonachlor	0.0248	0.0262	J	ug/L		106	50 - 150
Trifluralin	0.0992	0.0809	J	ug/L		82	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	102		70 - 130
Triphenylphosphate	110		70 - 130

**Lab Sample ID: 380-70928-AI-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.098		1.96	1.98		ug/L		101	70 - 130
2,4'-DDD	<0.098		1.96	2.03		ug/L		104	70 - 130
2,4'-DDE	<0.098		1.96	2.05		ug/L		105	70 - 130
2,4'-DDT	<0.098		1.96	1.92		ug/L		98	70 - 130
2,4-Dinitrotoluene	<0.098		1.96	2.30		ug/L		118	70 - 130
2,6-Dinitrotoluene	<0.098		1.96	2.16		ug/L		110	70 - 130
2-Methylnaphthalene	<0.098		1.96	2.11		ug/L		108	70 - 130
4,4'-DDD	<0.098		1.96	1.99		ug/L		102	70 - 130
4,4'-DDE	<0.098		1.96	1.96		ug/L		100	70 - 130
4,4'-DDT	<0.098		1.96	1.79		ug/L		91	70 - 130
Acenaphthene	<0.098		1.96	1.87		ug/L		96	70 - 130
Acenaphthylene	<0.098		1.96	1.94		ug/L		99	70 - 130
Acetochlor	<0.098		1.96	1.79		ug/L		92	70 - 130
Alachlor	<0.049		1.96	2.19		ug/L		112	70 - 130
alpha-BHC	<0.098		1.96	2.00		ug/L		102	70 - 130
alpha-Chlordane	<0.049		1.96	2.29		ug/L		117	70 - 130
Anthracene	<0.020		1.96	2.06		ug/L		105	70 - 130
Atrazine	<0.049		1.96	2.33		ug/L		119	70 - 130
Benz(a)anthracene	<0.049		1.96	1.98		ug/L		101	70 - 130
Benzo[a]pyrene	<0.020		1.96	2.03		ug/L		104	70 - 130
Benzo[b]fluoranthene	<0.020		1.96	2.05		ug/L		105	70 - 130
Benzo[g,h,i]perylene	<0.049		1.96	1.92		ug/L		98	70 - 130
Benzo[k]fluoranthene	<0.020		1.96	2.11		ug/L		108	70 - 130
beta-BHC	<0.098		1.96	1.98		ug/L		101	70 - 130
Bis(2-ethylhexyl) phthalate	<0.59		1.96	1.83		ug/L		94	70 - 130
Bromacil	<0.098		1.96	2.43		ug/L		124	70 - 130
Butachlor	<0.049	F1	1.96	2.67	F1	ug/L		137	70 - 130
Butylbenzylphthalate	<0.49		1.96	2.24		ug/L		115	70 - 130
Chlorobenzilate	<0.098		1.96	2.34		ug/L		120	70 - 130

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-70928-AI-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Chloroneb	<0.098		1.96	2.05		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	<0.098		1.96	2.21		ug/L		113	70 - 130
Chlorpyrifos	<0.049		1.96	2.21		ug/L		113	70 - 130
Chrysene	<0.020		1.96	1.97		ug/L		101	70 - 130
delta-BHC	<0.098		1.96	2.00		ug/L		102	70 - 130
Di(2-ethylhexyl)adipate	<0.59		1.96	2.02		ug/L		103	70 - 130
Dibenz(a,h)anthracene	<0.049		1.96	2.06		ug/L		105	70 - 130
Diclorvos (DDVP)	<0.049		1.96	1.84		ug/L		94	70 - 130
Dieldrin	<0.20		1.96	2.09		ug/L		107	70 - 130
Diethylphthalate	<0.49		1.96	2.06		ug/L		105	70 - 130
Dimethylphthalate	<0.49		1.96	2.10		ug/L		107	70 - 130
Di-n-butyl phthalate	<0.98		3.91	4.32		ug/L		108	70 - 130
Di-n-octyl phthalate	<0.098		1.96	1.76		ug/L		90	70 - 130
Endosulfan I (Alpha)	<0.098		1.96	2.03		ug/L		104	70 - 130
Endosulfan II (Beta)	<0.098		1.96	2.15		ug/L		110	70 - 130
Endosulfan sulfate	<0.098		1.96	2.37		ug/L		121	70 - 130
Endrin	<0.098		1.96	2.13		ug/L		109	70 - 130
Endrin aldehyde	<0.098	^3+	1.96	1.95		ug/L		99	70 - 130
EPTC	<0.098		1.96	2.29		ug/L		117	70 - 130
Fluoranthene	<0.098		1.96	2.12		ug/L		108	70 - 130
Fluorene	<0.049		1.96	2.09		ug/L		107	70 - 130
gamma-Chlordane	<0.049		1.96	2.22		ug/L		114	70 - 130
Heptachlor	<0.039		1.96	2.05		ug/L		105	70 - 130
Heptachlor epoxide (isomer B)	<0.049		1.96	2.48		ug/L		127	70 - 130
Hexachlorobenzene	<0.049		1.96	2.15		ug/L		110	70 - 130
Hexachlorocyclopentadiene	<0.049		1.96	2.17		ug/L		111	70 - 130
Indeno[1,2,3-cd]pyrene	<0.049		1.96	1.99		ug/L		102	70 - 130
Isophorone	<0.49		1.96	1.73		ug/L		88	70 - 130
Lindane	<0.039		1.96	2.07		ug/L		106	70 - 130
Malathion	<0.098		1.96	2.38		ug/L		122	70 - 130
Methoxychlor	<0.098		1.96	2.06		ug/L		105	70 - 130
Metolachlor	<0.049		1.96	2.10		ug/L		107	70 - 130
Molinate	<0.098		1.96	2.12		ug/L		108	70 - 130
Naphthalene	<0.29		1.96	1.89		ug/L		97	70 - 130
Parathion	<0.098		1.96	2.03		ug/L		104	70 - 130
Pendimethalin (Penoxaline)	<0.098		1.96	2.32		ug/L		119	70 - 130
Phenanthrene	<0.039		1.96	2.02		ug/L		103	70 - 130
Propachlor	<0.049		1.96	2.07		ug/L		106	70 - 130
Pyrene	<0.049		1.96	2.13		ug/L		109	70 - 130
Simazine	<0.049		1.96	2.35		ug/L		120	70 - 130
Terbacil	<0.098		1.96	2.06		ug/L		105	70 - 130
Terbutylazine	<0.098		1.96	2.17		ug/L		111	70 - 130
Thiobencarb	<0.20		1.96	2.00		ug/L		102	70 - 130
trans-Nonachlor	<0.049		1.96	2.06		ug/L		105	70 - 130
Trifluralin	<0.098	F1	1.96	2.66	F1	ug/L		136	70 - 130

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	98		70 - 130

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-70928-AI-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 64322**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Perylene-d12</i>	106		70 - 130
<i>Triphenylphosphate</i>	115		70 - 130

**Lab Sample ID: 380-71238-1 DU**  
**Matrix: Drinking Water**  
**Analysis Batch: 64322**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>DU Result</b>	<b>DU Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>RPD</b>	<b>Limit</b>
1-Methylnaphthalene	<0.099		<0.099		ug/L		NC	20
2,4'-DDD	<0.099		<0.099		ug/L		NC	20
2,4'-DDE	<0.099		<0.099		ug/L		NC	20
2,4'-DDT	<0.099		<0.099		ug/L		NC	20
2,4-Dinitrotoluene	<0.099		<0.099		ug/L		NC	20
2,6-Dinitrotoluene	<0.099		<0.099		ug/L		NC	20
2-Methylnaphthalene	<0.099		<0.099		ug/L		NC	20
4,4'-DDD	<0.099		<0.099		ug/L		NC	20
4,4'-DDE	<0.099		<0.099		ug/L		NC	20
4,4'-DDT	<0.099		<0.099		ug/L		NC	20
Acenaphthene	<0.099		<0.099		ug/L		NC	20
Acenaphthylene	<0.099		<0.099		ug/L		NC	20
Acetochlor	<0.099		<0.099		ug/L		NC	20
Alachlor	<0.049		<0.049		ug/L		NC	20
alpha-BHC	<0.099		<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	<0.099		<0.099		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	<0.59		<0.59		ug/L		NC	20
Bromacil	<0.099		<0.099		ug/L		NC	20
Butachlor	<0.049		<0.049		ug/L		NC	20
Butylbenzylphthalate	<0.49		<0.49		ug/L		NC	20
Chlorobenzilate	<0.099		<0.099		ug/L		NC	20
Chloroneb	<0.099		<0.099		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	<0.099		<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	<0.099		<0.099		ug/L		NC	20
Di(2-ethylhexyl)adipate	<0.59		<0.59		ug/L		NC	20
Dibenz(a,h)anthracene	<0.049		<0.049		ug/L		NC	20
Diclorvos (DDVP)	<0.049		<0.049		ug/L		NC	20
Dieldrin	<0.20		<0.20		ug/L		NC	20
Diethylphthalate	<0.49		<0.49		ug/L		NC	20
Dimethylphthalate	<0.49		<0.49		ug/L		NC	20

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-1 DU**  
**Matrix: Drinking Water**  
**Analysis Batch: 64322**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**  
**Prep Batch: 64090**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Di-n-butyl phthalate	<0.99		<0.99		ug/L		NC	20
Di-n-octyl phthalate	<0.099		<0.099		ug/L		NC	20
Endosulfan I (Alpha)	<0.099		<0.099		ug/L		NC	20
Endosulfan II (Beta)	<0.099		<0.099		ug/L		NC	20
Endosulfan sulfate	<0.099		<0.099		ug/L		NC	20
Endrin	<0.099		<0.099		ug/L		NC	20
Endrin aldehyde	<0.099	^3+	<0.099		ug/L		NC	20
EPTC	<0.099		<0.099		ug/L		NC	20
Fluoranthene	<0.099		<0.099		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.040		<0.040		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	<0.040		<0.040		ug/L		NC	20
Malathion	<0.099		<0.099		ug/L		NC	20
Methoxychlor	<0.099		<0.099		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.099		<0.099		ug/L		NC	20
Naphthalene	<0.30		<0.30		ug/L		NC	20
Parathion	<0.099		<0.099		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.099		<0.099		ug/L		NC	20
Phenanthrene	<0.040		<0.040		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.099		<0.099		ug/L		NC	20
Terbutylazine	<0.099		<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	<0.099		<0.099		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	104		70 - 130
Triphenylphosphate	110		70 - 130

**Lab Sample ID: MB 380-64471/21-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1-Methylnaphthalene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
2,4'-DDD	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MB 380-64471/21-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDE	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
2,4'-DDT	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
2,4-Dinitrotoluene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
2,6-Dinitrotoluene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
2-Methylnaphthalene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
4,4'-DDD	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
4,4'-DDE	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
4,4'-DDT	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Acenaphthene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Acenaphthylene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Acetochlor	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Alachlor	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
alpha-BHC	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
alpha-Chlordane	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Anthracene	<0.020		0.020	ug/L		11/19/23 16:48	11/20/23 16:56	1
Atrazine	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Benz(a)anthracene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Benzo[a]pyrene	<0.020		0.020	ug/L		11/19/23 16:48	11/20/23 16:56	1
Benzo[b]fluoranthene	<0.020		0.020	ug/L		11/19/23 16:48	11/20/23 16:56	1
Benzo[g,h,i]perylene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Benzo[k]fluoranthene	<0.020		0.020	ug/L		11/19/23 16:48	11/20/23 16:56	1
beta-BHC	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Bis(2-ethylhexyl) phthalate	<0.59		0.59	ug/L		11/19/23 16:48	11/20/23 16:56	1
Bromacil	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Butachlor	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Butylbenzylphthalate	<0.49		0.49	ug/L		11/19/23 16:48	11/20/23 16:56	1
Chlorobenzilate	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Chloroneb	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Chlorothalonil (Draconil, Bravo)	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Chlorpyrifos	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Chrysene	<0.020		0.020	ug/L		11/19/23 16:48	11/20/23 16:56	1
delta-BHC	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Di(2-ethylhexyl)adipate	<0.59		0.59	ug/L		11/19/23 16:48	11/20/23 16:56	1
Dibenz(a,h)anthracene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Diclorvos (DDVP)	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Dieldrin	<0.20		0.20	ug/L		11/19/23 16:48	11/20/23 16:56	1
Diethylphthalate	<0.49		0.49	ug/L		11/19/23 16:48	11/20/23 16:56	1
Dimethylphthalate	<0.49		0.49	ug/L		11/19/23 16:48	11/20/23 16:56	1
Di-n-butyl phthalate	<0.98		0.98	ug/L		11/19/23 16:48	11/20/23 16:56	1
Di-n-octyl phthalate	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Endosulfan I (Alpha)	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Endosulfan II (Beta)	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Endosulfan sulfate	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Endrin	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Endrin aldehyde	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
EPTC	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Fluoranthene	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Fluorene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
gamma-Chlordane	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MB 380-64471/21-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.039		0.039	ug/L		11/19/23 16:48	11/20/23 16:56	1
Heptachlor epoxide (isomer B)	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Hexachlorobenzene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Hexachlorocyclopentadiene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Indeno[1,2,3-cd]pyrene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Isophorone	<0.49		0.49	ug/L		11/19/23 16:48	11/20/23 16:56	1
Lindane	<0.039		0.039	ug/L		11/19/23 16:48	11/20/23 16:56	1
Malathion	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Methoxychlor	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Metolachlor	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Molinate	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Naphthalene	<0.29		0.29	ug/L		11/19/23 16:48	11/20/23 16:56	1
Parathion	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Pendimethalin (Penoxaline)	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Phenanthrene	<0.039		0.039	ug/L		11/19/23 16:48	11/20/23 16:56	1
Propachlor	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Pyrene	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Simazine	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Terbacil	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Terbutylazine	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1
Thiobencarb	<0.20		0.20	ug/L		11/19/23 16:48	11/20/23 16:56	1
Total Permethrin (mixed isomers)	<0.20		0.20	ug/L		11/19/23 16:48	11/20/23 16:56	1
trans-Nonachlor	<0.049		0.049	ug/L		11/19/23 16:48	11/20/23 16:56	1
Trifluralin	<0.098		0.098	ug/L		11/19/23 16:48	11/20/23 16:56	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Decane	0.614	T J N	ug/L		2.31	124-18-5	11/19/23 16:48	11/20/23 16:56	1
Decane	2.36	T J N	ug/L		2.39	124-18-5	11/19/23 16:48	11/20/23 16:56	1
Unknown	0.584	T J	ug/L		2.52	N/A	11/19/23 16:48	11/20/23 16:56	1
9-Octadecenamide, (Z)-	0.991	T J N	ug/L		7.45	301-02-0	11/19/23 16:48	11/20/23 16:56	1
13-Docosenamide, (Z)-	0.695	T J N	ug/L		10.04	112-84-5	11/19/23 16:48	11/20/23 16:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	11/19/23 16:48	11/20/23 16:56	1
Perylene-d12	91		70 - 130	11/19/23 16:48	11/20/23 16:56	1
Triphenylphosphate	101		70 - 130	11/19/23 16:48	11/20/23 16:56	1

**Lab Sample ID: LCS 380-64471/23-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	1.96	2.03		ug/L		103	70 - 130
2,4'-DDD	1.96	2.01		ug/L		102	70 - 130
2,4'-DDE	1.96	1.95		ug/L		99	70 - 130
2,4'-DDT	1.96	1.98		ug/L		101	70 - 130
2,4-Dinitrotoluene	1.96	1.79		ug/L		91	70 - 130
2,6-Dinitrotoluene	1.96	1.79		ug/L		91	70 - 130

Eurofins Eaton Analytical Pomona



# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-64471/23-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Methylnaphthalene	1.96	2.08		ug/L		106	70 - 130
4,4'-DDD	1.96	1.95		ug/L		99	70 - 130
4,4'-DDE	1.96	1.89		ug/L		96	70 - 130
4,4'-DDT	1.96	1.95		ug/L		99	70 - 130
Acenaphthene	1.96	1.96		ug/L		100	70 - 130
Acenaphthylene	1.96	2.05		ug/L		105	70 - 130
Acetochlor	1.96	2.22		ug/L		113	70 - 130
Alachlor	1.96	2.17		ug/L		111	70 - 130
alpha-BHC	1.96	1.99		ug/L		102	70 - 130
alpha-Chlordane	1.96	1.91		ug/L		97	70 - 130
Anthracene	1.96	1.98		ug/L		101	70 - 130
Atrazine	1.96	2.09		ug/L		106	70 - 130
Benz(a)anthracene	1.96	2.06		ug/L		105	70 - 130
Benzo[a]pyrene	1.96	2.24		ug/L		114	70 - 130
Benzo[b]fluoranthene	1.96	2.20		ug/L		112	70 - 130
Benzo[g,h,i]perylene	1.96	2.35		ug/L		120	70 - 130
Benzo[k]fluoranthene	1.96	2.18		ug/L		111	70 - 130
beta-BHC	1.96	2.04		ug/L		104	70 - 130
Bis(2-ethylhexyl) phthalate	1.96	2.05		ug/L		105	70 - 130
Bromacil	1.96	1.92		ug/L		98	70 - 130
Butachlor	1.96	2.15		ug/L		109	70 - 130
Butylbenzylphthalate	1.96	2.12		ug/L		108	70 - 130
Chlorobenzilate	1.96	2.16		ug/L		110	70 - 130
Chloroneb	1.96	1.96		ug/L		100	70 - 130
Chlorothalonil (Draconil, Bravo)	1.96	1.96		ug/L		100	70 - 130
Chlorpyrifos	1.96	1.91		ug/L		97	70 - 130
Chrysene	1.96	2.08		ug/L		106	70 - 130
delta-BHC	1.96	1.93		ug/L		98	70 - 130
Di(2-ethylhexyl)adipate	1.96	2.25		ug/L		115	70 - 130
Dibenz(a,h)anthracene	1.96	2.47		ug/L		126	70 - 130
Diclorvos (DDVP)	1.96	1.83		ug/L		93	70 - 130
Dieldrin	1.96	1.88		ug/L		96	70 - 130
Diethylphthalate	1.96	2.16		ug/L		110	70 - 130
Dimethylphthalate	1.96	2.11		ug/L		107	70 - 130
Di-n-butyl phthalate	3.93	4.22		ug/L		107	70 - 130
Di-n-octyl phthalate	1.96	1.83		ug/L		93	70 - 130
Endosulfan I (Alpha)	1.96	2.07		ug/L		105	70 - 130
Endosulfan II (Beta)	1.96	2.29		ug/L		117	70 - 130
Endosulfan sulfate	1.96	1.82		ug/L		93	70 - 130
Endrin	1.96	1.92		ug/L		98	70 - 130
Endrin aldehyde	1.96	1.73		ug/L		88	70 - 130
EPTC	1.96	1.99		ug/L		101	70 - 130
Fluoranthene	1.96	2.10		ug/L		107	70 - 130
Fluorene	1.96	2.04		ug/L		104	70 - 130
gamma-Chlordane	1.96	1.87		ug/L		95	70 - 130
Heptachlor	1.96	1.98		ug/L		101	70 - 130
Heptachlor epoxide (isomer B)	1.96	1.99		ug/L		101	70 - 130
Hexachlorobenzene	1.96	1.81		ug/L		92	70 - 130
Hexachlorocyclopentadiene	1.96	1.91		ug/L		97	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-64471/23-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Indeno[1,2,3-cd]pyrene	1.96	2.47		ug/L		126	70 - 130
Isophorone	1.96	2.01		ug/L		103	70 - 130
Lindane	1.96	2.01		ug/L		102	70 - 130
Malathion	1.96	2.01		ug/L		102	70 - 130
Methoxychlor	1.96	2.10		ug/L		107	70 - 130
Metolachlor	1.96	2.07		ug/L		106	70 - 130
Molinate	1.96	1.92		ug/L		98	70 - 130
Naphthalene	1.96	1.90		ug/L		97	70 - 130
Parathion	1.96	2.12		ug/L		108	70 - 130
Pendimethalin (Penoxaline)	1.96	1.83		ug/L		93	70 - 130
Phenanthrene	1.96	1.94		ug/L		99	70 - 130
Propachlor	1.96	2.02		ug/L		103	70 - 130
Pyrene	1.96	2.12		ug/L		108	70 - 130
Simazine	1.96	2.18		ug/L		111	70 - 130
Terbacil	1.96	1.98		ug/L		101	70 - 130
Terbutylazine	1.96	2.19		ug/L		112	70 - 130
Thiobencarb	1.96	2.02		ug/L		103	70 - 130
trans-Nonachlor	1.96	1.76		ug/L		90	70 - 130
Trifluralin	1.96	1.73		ug/L		88	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	96		70 - 130
Triphenylphosphate	101		70 - 130

**Lab Sample ID: MRL 380-64471/22-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.0987	0.0949	J	ug/L		96	50 - 150
2,4'-DDD	0.0987	0.106		ug/L		108	50 - 150
2,4'-DDE	0.0987	0.102		ug/L		103	50 - 150
2,4'-DDT	0.0987	0.0961	J	ug/L		97	50 - 150
2,4-Dinitrotoluene	0.0987	0.0934	J	ug/L		95	50 - 150
2,6-Dinitrotoluene	0.0987	0.0864	J	ug/L		88	50 - 150
2-Methylnaphthalene	0.0987	0.0906	J	ug/L		92	50 - 150
4,4'-DDD	0.0987	0.0970	J	ug/L		98	50 - 150
4,4'-DDE	0.0987	0.0889	J	ug/L		90	50 - 150
4,4'-DDT	0.0987	0.103		ug/L		104	50 - 150
Acenaphthene	0.0987	0.0877	J	ug/L		89	50 - 150
Acenaphthylene	0.0987	0.0822	J	ug/L		83	50 - 150
Acetochlor	0.0493	0.0465	J	ug/L		94	50 - 150
Alachlor	0.0493	0.0492		ug/L		100	50 - 150
alpha-BHC	0.0987	0.0969	J	ug/L		98	50 - 150
alpha-Chlordane	0.0247	0.0306	J	ug/L		124	50 - 150
Anthracene	0.0197	<0.019		ug/L		95	50 - 150
Atrazine	0.0493	<0.047		ug/L		82	50 - 150

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-64471/22-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Benz(a)anthracene	0.0493	0.0415	J	ug/L		84	50 - 150
Benzo[a]pyrene	0.0197	0.0189	J	ug/L		96	50 - 150
Benzo[b]fluoranthene	0.0197	0.0211		ug/L		107	50 - 150
Benzo[g,h,i]perylene	0.0493	0.0517		ug/L		105	50 - 150
Benzo[k]fluoranthene	0.0197	0.0197	J	ug/L		100	50 - 150
beta-BHC	0.0987	0.0916	J	ug/L		93	50 - 150
Bis(2-ethylhexyl) phthalate	0.592	0.660		ug/L		111	50 - 150
Bromacil	0.0987	0.114		ug/L		115	50 - 150
Butachlor	0.0493	0.0549		ug/L		111	50 - 150
Butylbenzylphthalate	0.148	0.153	J	ug/L		103	50 - 150
Chlorobenzilate	0.0987	0.105		ug/L		107	50 - 150
Chloroneb	0.0987	0.111		ug/L		112	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0987	0.0942	J	ug/L		95	50 - 150
Chlorpyrifos	0.0493	0.0540		ug/L		109	50 - 150
Chrysene	0.0197	0.0192	J	ug/L		97	50 - 150
delta-BHC	0.0987	0.102		ug/L		104	50 - 150
Di(2-ethylhexyl)adipate	0.296	0.348	J	ug/L		117	50 - 150
Dibenz(a,h)anthracene	0.0493	0.0519		ug/L		105	50 - 150
Diclorvos (DDVP)	0.0493	0.0663		ug/L		134	50 - 150
Dieldrin	0.0987	0.100	J	ug/L		102	50 - 150
Diethylphthalate	0.148	0.149	J	ug/L		101	50 - 150
Dimethylphthalate	0.296	0.288	J	ug/L		97	50 - 150
Di-n-butyl phthalate	0.296	0.376	J	ug/L		127	49 - 243
Di-n-octyl phthalate	0.0987	0.109		ug/L		110	50 - 150
Endosulfan I (Alpha)	0.0987	0.0923	J	ug/L		94	50 - 150
Endosulfan II (Beta)	0.0987	0.129		ug/L		131	50 - 150
Endosulfan sulfate	0.0987	0.110		ug/L		112	50 - 150
Endrin	0.0987	0.103		ug/L		105	50 - 150
Endrin aldehyde	0.0987	0.107		ug/L		108	50 - 150
EPTC	0.0987	0.0923	J	ug/L		94	50 - 150
Fluoranthene	0.0493	0.0466	J	ug/L		94	50 - 150
Fluorene	0.0493	<0.049		ug/L		90	50 - 150
gamma-Chlordane	0.0247	0.0303	J	ug/L		123	50 - 150
Heptachlor	0.0395	0.0496		ug/L		126	50 - 150
Heptachlor epoxide (isomer B)	0.0493	0.0508		ug/L		103	50 - 150
Hexachlorobenzene	0.0493	0.0430	J	ug/L		87	50 - 150
Hexachlorocyclopentadiene	0.0493	0.0437	J	ug/L		89	50 - 150
Indeno[1,2,3-cd]pyrene	0.0493	0.0467	J	ug/L		95	50 - 150
Isophorone	0.0987	0.109	J	ug/L		110	50 - 150
Lindane	0.0395	0.0355	J	ug/L		90	50 - 150
Malathion	0.0987	0.106		ug/L		107	50 - 150
Methoxychlor	0.0987	0.108		ug/L		109	50 - 150
Metolachlor	0.0493	0.0624		ug/L		126	50 - 150
Molinate	0.0987	0.0951	J	ug/L		96	50 - 150
Naphthalene	0.0987	0.0980	J	ug/L		99	50 - 150
Parathion	0.0987	0.112		ug/L		113	50 - 150
Pendimethalin (Penoxaline)	0.0987	0.0985	J	ug/L		100	50 - 150
Phenanthrene	0.0197	0.0212	J	ug/L		107	50 - 150
Propachlor	0.0493	0.0519		ug/L		105	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-64471/22-A**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Pyrene	0.0493	0.0471	J	ug/L		96	50 - 150
Simazine	0.0493	0.0470	J	ug/L		95	50 - 150
Terbacil	0.0987	0.0944	J	ug/L		96	50 - 150
Terbutylazine	0.0987	0.0885	J	ug/L		90	50 - 150
Thiobencarb	0.0987	0.115	J	ug/L		116	50 - 150
trans-Nonachlor	0.0247	0.0308	J	ug/L		125	50 - 150
Trifluralin	0.0987	0.101		ug/L		102	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	97		70 - 130
Triphenylphosphate	100		70 - 130

**Lab Sample ID: 380-71418-CB-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	<0.099		1.99	2.06		ug/L		104	70 - 130
2,4'-DDD	<0.099		1.99	2.06		ug/L		104	70 - 130
2,4'-DDE	<0.099		1.99	1.93		ug/L		97	70 - 130
2,4'-DDT	<0.099		1.99	2.01		ug/L		101	70 - 130
2,4-Dinitrotoluene	<0.099		1.99	1.89		ug/L		95	70 - 130
2,6-Dinitrotoluene	<0.099		1.99	1.84		ug/L		93	70 - 130
2-Methylnaphthalene	<0.099		1.99	2.10		ug/L		106	70 - 130
4,4'-DDD	<0.099		1.99	2.00		ug/L		101	70 - 130
4,4'-DDE	<0.099		1.99	1.94		ug/L		98	70 - 130
4,4'-DDT	<0.099		1.99	2.03		ug/L		102	70 - 130
Acenaphthene	<0.099		1.99	1.98		ug/L		100	70 - 130
Acenaphthylene	<0.099		1.99	2.12		ug/L		107	70 - 130
Acetochlor	<0.099	^+	1.99	2.32		ug/L		117	70 - 130
Alachlor	<0.050		1.99	2.35		ug/L		118	70 - 130
alpha-BHC	<0.099		1.99	2.01		ug/L		101	70 - 130
alpha-Chlordane	<0.050		1.99	2.01		ug/L		101	70 - 130
Anthracene	<0.020		1.99	2.03		ug/L		102	70 - 130
Atrazine	<0.050		1.99	2.08		ug/L		105	70 - 130
Benz(a)anthracene	<0.050		1.99	2.10		ug/L		106	70 - 130
Benzo[a]pyrene	<0.020		1.99	2.22		ug/L		112	70 - 130
Benzo[b]fluoranthene	<0.020		1.99	2.21		ug/L		111	70 - 130
Benzo[g,h,i]perylene	<0.050		1.99	2.29		ug/L		115	70 - 130
Benzo[k]fluoranthene	<0.020		1.99	2.15		ug/L		108	70 - 130
beta-BHC	<0.099		1.99	2.04		ug/L		103	70 - 130
Bis(2-ethylhexyl) phthalate	<0.60		1.99	2.14		ug/L		108	70 - 130
Bromacil	<0.099		1.99	2.20		ug/L		111	70 - 130
Butachlor	<0.050		1.99	2.25		ug/L		113	70 - 130
Butylbenzylphthalate	<0.50		1.99	2.29		ug/L		115	70 - 130
Chlorobenzilate	<0.099		1.99	2.47		ug/L		124	70 - 130
Chloroneb	<0.099		1.99	2.03		ug/L		102	70 - 130

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71418-CB-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Chlorothalonil (Draconil, Bravo)	<0.099		1.99	1.99		ug/L		100	70 - 130
Chlorpyrifos	<0.050		1.99	1.93		ug/L		97	70 - 130
Chrysene	<0.020		1.99	2.10		ug/L		106	70 - 130
delta-BHC	<0.099		1.99	2.04		ug/L		103	70 - 130
Di(2-ethylhexyl)adipate	<0.60		1.99	2.34		ug/L		118	70 - 130
Dibenz(a,h)anthracene	<0.050		1.99	2.45		ug/L		123	70 - 130
Diclorvos (DDVP)	<0.050		1.99	1.83		ug/L		92	70 - 130
Dieldrin	<0.20		1.99	1.94		ug/L		97	70 - 130
Diethylphthalate	<0.50		1.99	2.24		ug/L		113	70 - 130
Dimethylphthalate	<0.50		1.99	2.17		ug/L		109	70 - 130
Di-n-butyl phthalate	<0.99		3.97	4.42		ug/L		109	70 - 130
Di-n-octyl phthalate	<0.099		1.99	1.98		ug/L		100	70 - 130
Endosulfan I (Alpha)	<0.099		1.99	2.14		ug/L		108	70 - 130
Endosulfan II (Beta)	<0.099		1.99	2.29		ug/L		115	70 - 130
Endosulfan sulfate	<0.099		1.99	1.87		ug/L		94	70 - 130
Endrin	<0.099		1.99	1.85		ug/L		93	70 - 130
Endrin aldehyde	<0.099		1.99	1.73		ug/L		87	70 - 130
EPTC	<0.099		1.99	2.11		ug/L		106	70 - 130
Fluoranthene	<0.099		1.99	2.16		ug/L		109	70 - 130
Fluorene	<0.050		1.99	2.07		ug/L		104	70 - 130
gamma-Chlordane	<0.050		1.99	2.04		ug/L		103	70 - 130
Heptachlor	<0.040		1.99	2.03		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	<0.050		1.99	2.19		ug/L		110	70 - 130
Hexachlorobenzene	<0.050		1.99	1.77		ug/L		89	70 - 130
Hexachlorocyclopentadiene	<0.050		1.99	1.88		ug/L		95	70 - 130
Indeno[1,2,3-cd]pyrene	<0.050		1.99	2.46		ug/L		124	70 - 130
Isophorone	<0.50		1.99	2.08		ug/L		105	70 - 130
Lindane	<0.040		1.99	2.02		ug/L		102	70 - 130
Malathion	<0.099		1.99	2.17		ug/L		109	70 - 130
Methoxychlor	<0.099		1.99	2.21		ug/L		111	70 - 130
Metolachlor	<0.050		1.99	2.21		ug/L		111	70 - 130
Molinate	<0.099		1.99	2.09		ug/L		105	70 - 130
Naphthalene	<0.30		1.99	1.94		ug/L		98	70 - 130
Parathion	<0.099		1.99	2.34		ug/L		118	70 - 130
Pendimethalin (Penoxaline)	<0.099		1.99	1.97		ug/L		99	70 - 130
Phenanthrene	<0.040		1.99	2.01		ug/L		101	70 - 130
Propachlor	<0.050		1.99	2.18		ug/L		110	70 - 130
Pyrene	<0.050		1.99	2.21		ug/L		111	70 - 130
Simazine	<0.050		1.99	2.18		ug/L		110	70 - 130
Terbacil	<0.099		1.99	2.16		ug/L		109	70 - 130
Terbutylazine	<0.099		1.99	2.21		ug/L		111	70 - 130
Thiobencarb	<0.20		1.99	2.10		ug/L		106	70 - 130
trans-Nonachlor	<0.050		1.99	1.75		ug/L		88	70 - 130
Trifluralin	<0.099		1.99	1.81		ug/L		91	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	99		70 - 130
Perylene-d12	95		70 - 130

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71418-CB-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Surrogate	%Recovery	MS MS Qualifier	Limits
Triphenylphosphate	106		70 - 130

**Lab Sample ID: 380-71755-B-1-B DU**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

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

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71755-B-1-B DU**  
**Matrix: Water**  
**Analysis Batch: 64639**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 64471**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Di-n-octyl phthalate	<0.098	*3	<0.098		ug/L		NC	20
Endosulfan I (Alpha)	<0.098		<0.098		ug/L		NC	20
Endosulfan II (Beta)	<0.098		<0.098		ug/L		NC	20
Endosulfan sulfate	<0.098		<0.098		ug/L		NC	20
Endrin	<0.098		<0.098		ug/L		NC	20
Endrin aldehyde	<0.098		<0.098		ug/L		NC	20
EPTC	<0.098		<0.098		ug/L		NC	20
Fluoranthene	<0.098		<0.098		ug/L		NC	20
Fluorene	<0.049		<0.049		ug/L		NC	20
gamma-Chlordane	<0.049		<0.049		ug/L		NC	20
Heptachlor	<0.039		<0.039		ug/L		NC	20
Heptachlor epoxide (isomer B)	<0.049		<0.049		ug/L		NC	20
Hexachlorobenzene	<0.049		<0.049		ug/L		NC	20
Hexachlorocyclopentadiene	<0.049		<0.049		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	<0.049	*3	<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		<0.098		ug/L		NC	20
Methoxychlor	<0.098	*3	<0.098		ug/L		NC	20
Metolachlor	<0.049		<0.049		ug/L		NC	20
Molinate	<0.098		<0.098		ug/L		NC	20
Naphthalene	<0.29		<0.29		ug/L		NC	20
Parathion	<0.098		<0.098		ug/L		NC	20
Pendimethalin (Penoxaline)	<0.098		<0.098		ug/L		NC	20
Phenanthrene	<0.039		<0.039		ug/L		NC	20
Propachlor	<0.049		<0.049		ug/L		NC	20
Pyrene	<0.049		<0.049		ug/L		NC	20
Simazine	<0.049		<0.049		ug/L		NC	20
Terbacil	<0.098		<0.098		ug/L		NC	20
Terbutylazine	<0.098		<0.098		ug/L		NC	20
Thiobencarb	<0.20		<0.20		ug/L		NC	20
Total Permethrin (mixed isomers)	<0.20		<0.20		ug/L		NC	20
trans-Nonachlor	<0.049		<0.049		ug/L		NC	20
Trifluralin	<0.098		<0.098		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	100		70 - 130					
Triphenylphosphate	103		70 - 130					

## Method: 8015B GRO LL - Gasoline Range Organics - (GC)

**Lab Sample ID: MB 570-385386/6**  
**Matrix: Water**  
**Analysis Batch: 385386**

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
GRO (C6-C10)	<10		10	ug/L			11/20/23 12:22	1

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# QC Sample Results

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

Job ID: 380-71238-1

## Method: 8015B GRO LL - Gasoline Range Organics - (GC) (Continued)

**Lab Sample ID: MB 570-385386/6**  
**Matrix: Water**  
**Analysis Batch: 385386**

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		38 - 134		11/20/23 12:22	1

**Lab Sample ID: LCS 570-385386/4**  
**Matrix: Water**  
**Analysis Batch: 385386**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	389	411		ug/L		106	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	77		38 - 134

**Lab Sample ID: LCSD 570-385386/5**  
**Matrix: Water**  
**Analysis Batch: 385386**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	389	418		ug/L		107	78 - 120	2	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		38 - 134

**Lab Sample ID: MRL 570-385386/3**  
**Matrix: Water**  
**Analysis Batch: 385386**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	10.0	11.7		ug/L		117	

Surrogate	MRL %Recovery	MRL Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		38 - 134

**Lab Sample ID: 380-71238-1 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 385386**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	<10		389	425		ug/L		109	68 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	80		38 - 134



# QC Sample Results

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

Job ID: 380-71238-1

## Method: 8015B GRO LL - Gasoline Range Organics - (GC) (Continued)

**Lab Sample ID: 380-71238-1 MSD**  
**Matrix: Drinking Water**  
**Analysis Batch: 385386**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	<10		389	415		ug/L		107	68 - 122	2	18
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
4-Bromofluorobenzene (Surr)	102		38 - 134								

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

**Lab Sample ID: MB 570-384933/1-A**  
**Matrix: Water**  
**Analysis Batch: 390550**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 384933**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		11/17/23 15:07	12/08/23 13:10	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		11/17/23 15:07	12/08/23 13:10	1
C8-C18	<25		25	ug/L		11/17/23 15:07	12/08/23 13:10	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>MB Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>		
n-Octacosane (Surr)	104		60 - 130	11/17/23 15:07	12/08/23 13:10	1		

**Lab Sample ID: LCS 570-384933/2-A**  
**Matrix: Water**  
**Analysis Batch: 390550**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 384933**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	1600	1140		ug/L		71	56 - 127		
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>LCS Limits</b>						
n-Octacosane (Surr)	70		60 - 130						

**Lab Sample ID: LCSD 570-384933/3-A**  
**Matrix: Water**  
**Analysis Batch: 390550**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 384933**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	1600	1750	*1	ug/L		110	56 - 127	43	23
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCSD Qualifier</b>	<b>LCSD Limits</b>						
n-Octacosane (Surr)	107		60 - 130						

**Lab Sample ID: MRL 570-384933/4-A**  
**Matrix: Water**  
**Analysis Batch: 390550**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 384933**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	0.0200	<0.020		mg/L		62	50 - 150		

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# QC Sample Results

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

Job ID: 380-71238-1

## Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

**Lab Sample ID: MRL 570-384933/4-A**  
**Matrix: Water**  
**Analysis Batch: 390550**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 384933**

Surrogate	%Recovery	MRL MRL Qualifier	Limits
<i>n</i> -Octacosane (Surr)	107		60 - 130

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC)

**Lab Sample ID: MB 570-386980/3**  
**Matrix: Water**  
**Analysis Batch: 386980**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	<0.10		0.10	mg/L			11/27/23 16:42	1
Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac		
Hexafluoro-2-propanol (Surr)	94		54 - 120		11/27/23 16:42	1		

**Lab Sample ID: LCS 570-386980/4**  
**Matrix: Water**  
**Analysis Batch: 386980**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethanol	2.00	1.94		mg/L		97	78 - 131
Surrogate	%Recovery	LCS LCS Qualifier	Limits				
Hexafluoro-2-propanol (Surr)	98		54 - 120				

**Lab Sample ID: LCSD 570-386980/5**  
**Matrix: Water**  
**Analysis Batch: 386980**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethanol	2.00	1.93		mg/L		97	78 - 131	1	25
Surrogate	%Recovery	LCSD LCSD Qualifier	Limits						
Hexafluoro-2-propanol (Surr)	95		54 - 120						

**Lab Sample ID: MRL 570-386980/6**  
**Matrix: Water**  
**Analysis Batch: 386980**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Ethanol	0.100	0.103		mg/L		103	
Surrogate	%Recovery	MRL MRL Qualifier	Limits				
Hexafluoro-2-propanol (Surr)	106		54 - 120				

# QC Sample Results

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

Job ID: 380-71238-1

## Method: 8015B - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

**Lab Sample ID: 380-71238-1 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 386980**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Ethanol	<0.10		2.00	1.90		mg/L		95	20 - 173	
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>MS Limits</b>							
Hexafluoro-2-propanol (Surr)	91		54 - 120							

**Lab Sample ID: 380-71238-1 MSD**  
**Matrix: Drinking Water**  
**Analysis Batch: 386980**

**Client Sample ID: MOANALUA WELLS**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethanol	<0.10		2.00	2.10		mg/L		105	20 - 173	10	21
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
Hexafluoro-2-propanol (Surr)	94	p	54 - 120								

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

**Lab Sample ID: MBL 380-65757/21-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluorobutanoic acid (PFBA)	<0.69		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.38		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.37		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.48		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.47		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MBL 380-65757/21-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<0.25		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.46		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.15		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoropentanoic acid (PFPeA)	<0.38		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.36		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1
Perfluoropentanesulfonic acid (PFPeS)	<0.39		2.0	ng/L		11/29/23 12:29	12/01/23 08:47	1

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 HFPO-DA	96		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C6 PFDA	102		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C5 PFHxA	98		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C4 PFHpA	104		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C8 PFOA	98		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C9 PFNA	96		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C7 PFUnA	90		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C2 PFDoA	95		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C4 PFBA	104		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C5 PFPeA	107		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C3 PFBS	94		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C3 PFHxS	103		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C8 PFOS	103		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C2-4:2-FTS	111		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C2-6:2-FTS	120		50 - 200	11/29/23 12:29	12/01/23 08:47	1
13C2-8:2-FTS	145		50 - 200	11/29/23 12:29	12/01/23 08:47	1

**Lab Sample ID: LCS 380-65757/23-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.1	54.9		ng/L		91	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	60.1	57.7		ng/L		96	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.1	57.7		ng/L		96	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.1	59.6		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	60.1	60.8		ng/L		101	70 - 130
Perfluorodecanoic acid (PFDA)	60.1	53.3		ng/L		89	70 - 130
Perfluorododecanoic acid (PFDoA)	60.1	57.9		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	60.1	54.7		ng/L		91	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-65757/23-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	60.1	56.2		ng/L		93	70 - 130
Perfluorohexanoic acid (PFHxA)	60.1	59.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	60.1	58.9		ng/L		98	70 - 130
Perfluorooctanesulfonic acid (PFOS)	60.1	55.7		ng/L		93	70 - 130
Perfluorooctanoic acid (PFOA)	60.1	57.8		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	60.1	60.0		ng/L		100	70 - 130
Perfluorobutanoic acid (PFBA)	60.1	57.3		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.1	62.0		ng/L		103	70 - 130
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.1	57.1		ng/L		95	70 - 130
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.1	62.7		ng/L		104	70 - 130
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.1	58.4		ng/L		97	70 - 130
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	60.1	59.9		ng/L		100	70 - 130
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.1	56.7		ng/L		94	70 - 130
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.1	52.8		ng/L		88	70 - 130
Perfluoropentanoic acid (PFPeA)	60.1	56.8		ng/L		95	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	60.1	58.0		ng/L		96	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	60.1	55.3		ng/L		92	70 - 130

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	91		50 - 200
13C6 PFDA	110		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	108		50 - 200
13C8 PFOA	104		50 - 200
13C9 PFNA	104		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	109		50 - 200
13C4 PFBA	108		50 - 200
13C5 PFPeA	117		50 - 200
13C3 PFBS	95		50 - 200
13C3 PFHxS	101		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	101		50 - 200
13C2-6:2-FTS	97		50 - 200
13C2-8:2-FTS	133		50 - 200

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCSD 380-65757/24-A**

**Matrix: Water**

**Analysis Batch: 66095**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 65757**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	60.0	57.5		ng/L		96	70 - 130	5	30	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	60.0	59.7		ng/L		100	70 - 130	3	30	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	60.0	57.5		ng/L		96	70 - 130	0	30	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	60.0	57.9		ng/L		97	70 - 130	3	30	
Perfluorobutanesulfonic acid (PFBS)	60.0	60.6		ng/L		101	70 - 130	0	30	
Perfluorodecanoic acid (PFDA)	60.0	55.3		ng/L		92	70 - 130	4	30	
Perfluorododecanoic acid (PFDoA)	60.0	57.3		ng/L		96	70 - 130	1	30	
Perfluoroheptanoic acid (PFHpA)	60.0	57.1		ng/L		95	70 - 130	4	30	
Perfluorohexanesulfonic acid (PFHxS)	60.0	57.9		ng/L		96	70 - 130	3	30	
Perfluorohexanoic acid (PFHxA)	60.0	58.8		ng/L		98	70 - 130	1	30	
Perfluorononanoic acid (PFNA)	60.0	59.8		ng/L		100	70 - 130	2	30	
Perfluorooctanesulfonic acid (PFOS)	60.0	58.5		ng/L		98	70 - 130	5	30	
Perfluorooctanoic acid (PFOA)	60.0	58.2		ng/L		97	70 - 130	1	30	
Perfluoroundecanoic acid (PFUnA)	60.0	59.6		ng/L		99	70 - 130	1	30	
Perfluorobutanoic acid (PFBA)	60.0	58.6		ng/L		98	70 - 130	2	30	
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	60.0	64.9		ng/L		108	70 - 130	5	30	
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	60.0	59.5		ng/L		99	70 - 130	4	30	
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	60.0	60.8		ng/L		101	70 - 130	3	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	60.0	53.9		ng/L		90	70 - 130	8	30	
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	60.0	58.8		ng/L		98	70 - 130	2	30	
Perfluoro-3-methoxypropanoic acid (PFMPA)	60.0	58.6		ng/L		98	70 - 130	3	30	
Perfluoro-4-methoxybutanoic acid (PFMBA)	60.0	54.4		ng/L		91	70 - 130	3	30	
Perfluoropentanoic acid (PFPeA)	60.0	56.6		ng/L		94	70 - 130	0	30	
Perfluoroheptanesulfonic acid (PFHpS)	60.0	61.1		ng/L		102	70 - 130	5	30	
Perfluoropentanesulfonic acid (PFPeS)	60.0	57.6		ng/L		96	70 - 130	4	30	

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	114		50 - 200
13C5 PFHxA	103		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	107		50 - 200
13C9 PFNA	105		50 - 200

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCSD 380-65757/24-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C7 PFUnA	100		50 - 200
13C2 PFDoA	107		50 - 200
13C4 PFBA	105		50 - 200
13C5 PFPeA	112		50 - 200
13C3 PFBS	99		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	106		50 - 200
13C2-4:2-FTS	106		50 - 200
13C2-6:2-FTS	110		50 - 200
13C2-8:2-FTS	133		50 - 200

**Lab Sample ID: MRL 380-65757/22-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec
							Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.92	J	ng/L		96	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.10	J	ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	1.90	J	ng/L		95	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	2.09	J	ng/L		105	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.87	J	ng/L		94	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.92	J	ng/L		96	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.02	J	ng/L		101	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.96	J	ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.11	J	ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.04	J	ng/L		102	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	1.77	J	ng/L		89	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.00	2.36	J	ng/L		118	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	2.00	2.11	J	ng/L		106	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.00	2.28	J	ng/L		114	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	1.68	J	ng/L		84	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	2.00	1.83	J	ng/L		92	50 - 150

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-65757/22-A**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.78	J	ng/L		89	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	2.23	J	ng/L		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.00	2.11	J	ng/L		106	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.00	1.92	J	ng/L		96	50 - 150

Isotope Dilution	MRL %Recovery	MRL Qualifier	MRL Limits
13C3 HFPO-DA	82		50 - 200
13C6 PFDA	109		50 - 200
13C5 PFHxA	95		50 - 200
13C4 PFHpA	102		50 - 200
13C8 PFOA	98		50 - 200
13C9 PFNA	100		50 - 200
13C7 PFUnA	98		50 - 200
13C2 PFDoA	106		50 - 200
13C4 PFBA	96		50 - 200
13C5 PFPeA	100		50 - 200
13C3 PFBS	100		50 - 200
13C3 PFHxS	104		50 - 200
13C8 PFOS	105		50 - 200
13C2-4:2-FTS	108		50 - 200
13C2-6:2-FTS	101		50 - 200
13C2-8:2-FTS	135		50 - 200

**Lab Sample ID: 380-71249-B-1-A LMS**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.01	2.10		ng/L		105	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.01	2.28		ng/L		114	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.01	1.97	J	ng/L		98	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.01	2.10		ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.01	2.21		ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.02		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.12		ng/L		106	50 - 150
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	2.01		ng/L		100	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.01	1.99	J	ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	<2.0		2.01	1.93	J	ng/L		96	50 - 150

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71249-B-1-A LMS**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.21		ng/L		110	50 - 150
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.01	2.30		ng/L		115	50 - 150
Perfluorooctanoic acid (PFOA)	<2.0		2.01	2.17		ng/L		108	50 - 150
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.01		ng/L		100	50 - 150
Perfluorobutanoic acid (PFBA)	<2.0		2.01	2.22		ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.01	2.23		ng/L		111	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.01	2.21		ng/L		110	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.01	2.17		ng/L		108	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.01	1.95	J	ng/L		97	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<2.0		2.01	1.94	J	ng/L		97	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.01	2.04		ng/L		102	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.01	1.95	J	ng/L		97	50 - 150
Perfluoropentanoic acid (PFPeA)	<2.0		2.01	2.28		ng/L		113	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.01	2.09		ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.01	1.82	J	ng/L		91	50 - 150
		<b>LMS</b>	<b>LMS</b>						
<b>Isotope Dilution</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
13C3 HFPO-DA		57		50 - 200					
13C6 PFDA		77		50 - 200					
13C5 PFHxA		70		50 - 200					
13C4 PFHpA		71		50 - 200					
13C8 PFOA		71		50 - 200					
13C9 PFNA		67		50 - 200					
13C7 PFUnA		66		50 - 200					
13C2 PFDoA		71		50 - 200					
13C4 PFBA		70		50 - 200					
13C5 PFPeA		72		50 - 200					
13C3 PFBS		71		50 - 200					
13C3 PFHxS		78		50 - 200					
13C8 PFOS		73		50 - 200					
13C2-4:2-FTS		82		50 - 200					
13C2-6:2-FTS		81		50 - 200					
13C2-8:2-FTS		113		50 - 200					

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71249-C-1-A LMSD**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Analyte	Sample Result	Sample Qualifier	Spike Added	LMSD Result	LMSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		2.00	2.05		ng/L		102	50 - 150	3	50
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		2.00	2.28		ng/L		114	50 - 150	0	50
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.00	2.03		ng/L		101	50 - 150	3	50
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		2.00	1.89	J	ng/L		95	50 - 150	11	50
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.00	2.21		ng/L		111	50 - 150	0	50
Perfluorodecanoic acid (PFDA)	<2.0		2.00	2.04		ng/L		102	50 - 150	1	50
Perfluorododecanoic acid (PFDoA)	<2.0		2.00	2.07		ng/L		103	50 - 150	3	50
Perfluoroheptanoic acid (PFHpA)	<2.0		2.00	2.12		ng/L		106	50 - 150	5	50
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.00	2.01		ng/L		100	50 - 150	1	50
Perfluorohexanoic acid (PFHxA)	<2.0		2.00	2.10		ng/L		105	50 - 150	8	50
Perfluorononanoic acid (PFNA)	<2.0		2.00	2.10		ng/L		105	50 - 150	5	50
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.00	2.25		ng/L		112	50 - 150	2	50
Perfluorooctanoic acid (PFOA)	<2.0		2.00	2.17		ng/L		108	50 - 150	0	50
Perfluoroundecanoic acid (PFUnA)	<2.0		2.00	2.03		ng/L		102	50 - 150	1	50
Perfluorobutanoic acid (PFBA)	<2.0		2.00	2.29		ng/L		115	50 - 150	3	50
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<2.0		2.00	2.26		ng/L		113	50 - 150	1	50
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<2.0		2.00	2.18		ng/L		109	50 - 150	2	50
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<2.0		2.00	2.18		ng/L		109	50 - 150	0	50
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<2.0		2.00	2.12		ng/L		106	50 - 150	8	50
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	<2.0		2.00	1.90	J	ng/L		95	50 - 150	3	50
Perfluoro-3-methoxypropanoic acid (PFMPA)	<2.0		2.00	1.96	J	ng/L		98	50 - 150	4	50
Perfluoro-4-methoxybutanoic acid (PFMBA)	<2.0		2.00	1.97	J	ng/L		98	50 - 150	1	50
Perfluoropentanoic acid (PFPeA)	<2.0		2.00	2.15		ng/L		108	50 - 150	6	50
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.00	2.12		ng/L		106	50 - 150	1	50
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.00	1.97	J	ng/L		98	50 - 150	8	50

Isotope Dilution	LMSD %Recovery	LMSD Qualifier	Limits
13C3 HFPO-DA	98		50 - 200
13C6 PFDA	110		50 - 200
13C5 PFHxA	106		50 - 200
13C4 PFHpA	109		50 - 200
13C8 PFOA	106		50 - 200
13C9 PFNA	103		50 - 200

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71249-C-1-A LMSD**  
**Matrix: Water**  
**Analysis Batch: 66095**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 65757**

Isotope Dilution	LMSD LMSD		Limits
	%Recovery	Qualifier	
13C7 PFUnA	97		50 - 200
13C2 PFDoA	104		50 - 200
13C4 PFBA	103		50 - 200
13C5 PFPeA	109		50 - 200
13C3 PFBS	97		50 - 200
13C3 PFHxS	100		50 - 200
13C8 PFOS	100		50 - 200
13C2-4:2-FTS	111		50 - 200
13C2-6:2-FTS	102		50 - 200
13C2-8:2-FTS	134		50 - 200

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

**Lab Sample ID: MBL 380-64812/23-A**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	MBL MBL		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<1.0		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<0.58		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<0.42		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
9-Chlorohexadecafluoro-3-oxanonan e-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/21/23 13:23	11/22/23 11:55	1
Surrogate	MBL MBL		Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
d5-NEtFOSAA	104		70 - 130			11/21/23 13:23	11/22/23 11:55	1
13C2 PFHxA	107		70 - 130			11/21/23 13:23	11/22/23 11:55	1
13C2 PFDA	107		70 - 130			11/21/23 13:23	11/22/23 11:55	1
13C3-GenX	103		70 - 130			11/21/23 13:23	11/22/23 11:55	1

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-64812/25-A**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	55.2		ng/L		110	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	48.0		ng/L		103	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	55.2		ng/L		110	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	49.2		ng/L		98	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	47.6		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	51.0		ng/L		102	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	49.2		ng/L		98	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	51.8		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	52.9		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	46.1		ng/L		101	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	46.4		ng/L		105	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	48.3		ng/L		96	70 - 130
Perfluorononanoic acid (PFNA)	50.1	54.7		ng/L		109	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	56.0		ng/L		112	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	50.9		ng/L		102	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	49.2		ng/L		105	70 - 130
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	47.2		ng/L		100	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	45.6		ng/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	118		70 - 130
13C2 PFDA	115		70 - 130
13C3-GenX	119		70 - 130

**Lab Sample ID: LCSD 380-64812/26-A**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	55.1		ng/L		110	70 - 130	0	30
Perfluorooctanesulfonic acid (PFOS)	46.4	47.5		ng/L		102	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	50.1	53.2		ng/L		106	70 - 130	4	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	46.7		ng/L		93	70 - 130	5	30

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCSD 380-64812/26-A**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	48.0		ng/L		96	70 - 130	1	30
Perfluorohexanoic acid (PFHxA)	50.1	50.4		ng/L		101	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	50.1	48.1		ng/L		96	70 - 130	2	30
Perfluorooctanoic acid (PFOA)	50.1	50.9		ng/L		102	70 - 130	2	30
Perfluorodecanoic acid (PFDA)	50.1	53.8		ng/L		107	70 - 130	2	30
Perfluorohexanesulfonic acid (PFHxS)	45.7	46.4		ng/L		101	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	44.3	47.0		ng/L		106	70 - 130	1	30
Perfluoroheptanoic acid (PFHpA)	50.1	48.6		ng/L		97	70 - 130	1	30
Perfluorononanoic acid (PFNA)	50.1	53.8		ng/L		107	70 - 130	2	30
Perfluorotetradecanoic acid (PFTA)	50.1	54.7		ng/L		109	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	50.1	50.0		ng/L		100	70 - 130	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	48.5		ng/L		104	70 - 130	1	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	49.3		ng/L		104	70 - 130	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	44.6		ng/L		94	70 - 130	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
d5-NEtFOSAA	93		70 - 130
13C2 PFHxA	112		70 - 130
13C2 PFDA	109		70 - 130
13C3-GenX	110		70 - 130

**Lab Sample ID: MRL 380-64812/24-A**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.83	J	ng/L		91	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.72	J	ng/L		93	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.81	J	ng/L		90	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.74	J	ng/L		87	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.72	J	ng/L		86	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.89	J	ng/L		94	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.62	J	ng/L		81	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.95	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.89	J	ng/L		94	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-64812/24-A**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.62	J	ng/L		89	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.69	J	ng/L		95	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.77	J	ng/L		88	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.08	J	ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.75	J	ng/L		87	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.76	J	ng/L		94	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.66	J	ng/L		88	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.61	J	ng/L		85	50 - 150
<b>Surrogate</b>	<b>%Recovery</b>	<b>MRL</b>	<b>MRL Qualifier</b>	<b>Limits</b>			
d5-NEtFOSAA	100			70 - 130			
13C2 PFHxA	110			70 - 130			
13C2 PFDA	107			70 - 130			
13C3-GenX	105			70 - 130			

**Lab Sample ID: 380-70935-E-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	<2.0		25.1	27.1		ng/L		108	70 - 130
Perfluorooctanesulfonic acid (PFOS)	<2.0		23.2	22.9		ng/L		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	25.1		ng/L		100	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	22.5		ng/L		90	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	23.7		ng/L		94	70 - 130
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	26.1		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	22.5		ng/L		90	70 - 130
Perfluorooctanoic acid (PFOA)	<2.0		25.1	26.5		ng/L		103	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		25.1	25.6		ng/L		102	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	<2.0		22.9	22.7		ng/L		99	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		22.2	23.4		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	25.3		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		25.1	26.9		ng/L		105	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	26.7		ng/L		106	70 - 130

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-70935-E-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	23.7		ng/L		95	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		23.4	22.3		ng/L		95	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		23.7	21.4		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	23.6		ng/L		100	70 - 130
<b>Surrogate</b>		<b>MS %Recovery</b>	<b>MS Qualifier</b>		<b>Limits</b>				
d5-NEtFOSAA		84			70 - 130				
13C2 PFHxA		109			70 - 130				
13C2 PFDA		99			70 - 130				
13C3-GenX		113			70 - 130				

**Lab Sample ID: 380-70935-F-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

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		25.1	24.8		ng/L		99	70 - 130	9	30
Perfluorooctanesulfonic acid (PFOS)	<2.0		23.2	22.2		ng/L		93	70 - 130	3	30
Perfluoroundecanoic acid (PFUnA)	<2.0		25.1	23.8		ng/L		95	70 - 130	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		25.1	21.7		ng/L		87	70 - 130	4	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		25.1	23.2		ng/L		92	70 - 130	2	30
Perfluorohexanoic acid (PFHxA)	<2.0		25.1	23.6		ng/L		91	70 - 130	10	30
Perfluorododecanoic acid (PFDoA)	<2.0		25.1	20.7		ng/L		82	70 - 130	8	30
Perfluorooctanoic acid (PFOA)	<2.0		25.1	24.5		ng/L		95	70 - 130	8	30
Perfluorodecanoic acid (PFDA)	<2.0		25.1	23.6		ng/L		94	70 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	<2.0		22.9	21.6		ng/L		94	70 - 130	5	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		22.2	23.0		ng/L		100	70 - 130	2	30
Perfluoroheptanoic acid (PFHpA)	<2.0		25.1	22.7		ng/L		89	70 - 130	11	30
Perfluorononanoic acid (PFNA)	<2.0		25.1	25.6		ng/L		100	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	<2.0		25.1	26.3		ng/L		105	70 - 130	1	30
Perfluorotridecanoic acid (PFTrDA)	<2.0		25.1	22.5		ng/L		90	70 - 130	6	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		23.4	22.3		ng/L		95	70 - 130	0	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		23.7	20.6		ng/L		87	70 - 130	4	30

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-70935-F-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 64962**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 64812**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		23.7	21.4		ng/L		90	70 - 130	10	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD</b>	<b>Limits</b>							
d5-NEtFOSAA	90			70 - 130							
13C2 PFHxA	106			70 - 130							
13C2 PFDA	101			70 - 130							
13C3-GenX	108			70 - 130							

**Lab Sample ID: MBL 380-64928/23-A**  
**Matrix: Water**  
**Analysis Batch: 65349**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

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		11/22/23 08:34	11/27/23 17:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.43		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluoroundecanoic acid (PFUnA)	<0.42		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
N-methylperfluorooctanesulfonamide cetic acid (NMeFOSAA)	<0.58		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
N-ethylperfluorooctanesulfonamide cetic acid (NEtFOSAA)	<0.42		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorohexanoic acid (PFHxA)	<0.46		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorooctanoic acid (PFOA)	<0.38		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.32		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.37		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluoroheptanoic acid (PFHpA)	<0.39		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorononanoic acid (PFNA)	<0.40		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorotetradecanoic acid (PFTA)	<0.54		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
Perfluorotridecanoic acid (PFTrDA)	<0.36		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<0.30		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.30		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.60		2.0	ng/L		11/22/23 08:34	11/27/23 17:13	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MBL Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
d5-NEtFOSAA	102		70 - 130			11/22/23 08:34	11/27/23 17:13	1
13C2 PFHxA	112		70 - 130			11/22/23 08:34	11/27/23 17:13	1
13C2 PFDA	108		70 - 130			11/22/23 08:34	11/27/23 17:13	1
13C3-GenX	113		70 - 130			11/22/23 08:34	11/27/23 17:13	1



# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCS 380-64928/25-A**  
**Matrix: Water**  
**Analysis Batch: 65349**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	57.2		ng/L		114	70 - 130
Perfluorooctanesulfonic acid (PFOS)	46.4	45.1		ng/L		97	70 - 130
Perfluoroundecanoic acid (PFUnA)	50.1	54.1		ng/L		108	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	45.5		ng/L		91	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	47.5		ng/L		95	70 - 130
Perfluorohexanoic acid (PFHxA)	50.1	50.5		ng/L		101	70 - 130
Perfluorododecanoic acid (PFDoA)	50.1	44.0		ng/L		88	70 - 130
Perfluorooctanoic acid (PFOA)	50.1	50.0		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	50.1	52.8		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	45.7	45.5		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	44.3	47.0		ng/L		106	70 - 130
Perfluoroheptanoic acid (PFHpA)	50.1	49.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	50.1	52.9		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTA)	50.1	53.0		ng/L		106	70 - 130
Perfluorotridecanoic acid (PFTrDA)	50.1	49.2		ng/L		98	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	46.5		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	46.4		ng/L		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
d5-NEtFOSAA	96		70 - 130
13C2 PFHxA	119		70 - 130
13C2 PFDA	115		70 - 130
13C3-GenX	126		70 - 130

**Lab Sample ID: LCSD 380-64928/26-A**  
**Matrix: Water**  
**Analysis Batch: 65349**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	50.1	58.4		ng/L		117	70 - 130	2	30
Perfluorooctanesulfonic acid (PFOS)	46.4	47.7		ng/L		103	70 - 130	6	30
Perfluoroundecanoic acid (PFUnA)	50.1	54.9		ng/L		109	70 - 130	1	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	50.1	50.9		ng/L		102	70 - 130	11	30

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# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: LCSD 380-64928/26-A**  
**Matrix: Water**  
**Analysis Batch: 65349**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	50.1	51.5		ng/L		103	70 - 130	8	30
Perfluorohexanoic acid (PFHxA)	50.1	53.1		ng/L		106	70 - 130	5	30
Perfluorododecanoic acid (PFDoA)	50.1	48.9		ng/L		98	70 - 130	10	30
Perfluorooctanoic acid (PFOA)	50.1	52.3		ng/L		104	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	50.1	57.0		ng/L		114	70 - 130	8	30
Perfluorohexanesulfonic acid (PFHxS)	45.7	48.5		ng/L		106	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	44.3	50.0		ng/L		113	70 - 130	6	30
Perfluoroheptanoic acid (PFHpA)	50.1	50.4		ng/L		101	70 - 130	2	30
Perfluorononanoic acid (PFNA)	50.1	55.4		ng/L		111	70 - 130	5	30
Perfluorotetradecanoic acid (PFTA)	50.1	57.1		ng/L		114	70 - 130	8	30
Perfluorotridecanoic acid (PFTrDA)	50.1	52.6		ng/L		105	70 - 130	7	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	46.8	51.0		ng/L		109	70 - 130	7	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	47.3	48.7		ng/L		103	70 - 130	5	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	47.3	46.6		ng/L		98	70 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
d5-NEtFOSAA	97		70 - 130
13C2 PFHxA	116		70 - 130
13C2 PFDA	113		70 - 130
13C3-GenX	118		70 - 130

**Lab Sample ID: MRL 380-64928/24-A**  
**Matrix: Water**  
**Analysis Batch: 65349**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	2.06	J	ng/L		103	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.79	J	ng/L		97	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.09	J	ng/L		104	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.95	J	ng/L		97	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.94	J	ng/L		97	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.03	J	ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.91	J	ng/L		95	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.93	J	ng/L		97	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.05	J	ng/L		102	50 - 150

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: MRL 380-64928/24-A**  
**Matrix: Water**  
**Analysis Batch: 65349**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.80	J	ng/L		99	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.77	1.82	J	ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.87	J	ng/L		93	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.16	J	ng/L		108	50 - 150
Perfluorotetradecanoic acid (PFTA)	2.00	2.25	J	ng/L		112	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	2.00	1.97	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.83	J	ng/L		98	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.77	J	ng/L		94	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.87	J	ng/L		99	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
d5-NEtFOSAA	99		70 - 130
13C2 PFHxA	119		70 - 130
13C2 PFDA	117		70 - 130
13C3-GenX	116		70 - 130

**Lab Sample ID: 380-71238-4 MS**  
**Matrix: Drinking Water**  
**Analysis Batch: 65349**

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

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		2.01	2.42		ng/L		120	70 - 130
Perfluorooctanesulfonic acid (PFOS)	2.2		1.86	4.23		ng/L		107	70 - 130
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.42		ng/L		121	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.15		ng/L		107	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.24		ng/L		112	70 - 130
Perfluorohexanoic acid (PFHxA)	2.2		2.01	4.39		ng/L		109	70 - 130
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.17		ng/L		108	70 - 130
Perfluorooctanoic acid (PFOA)	2.0		2.01	4.20		ng/L		110	70 - 130
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.37		ng/L		118	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	2.7		1.83	4.67		ng/L		107	70 - 130
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.78	3.42		ng/L		111	70 - 130
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.25		ng/L		108	70 - 130
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.52		ng/L		126	70 - 130
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.45		ng/L		122	70 - 130

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4 MS**

**Matrix: Drinking Water**

**Analysis Batch: 65349**

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

**Prep Type: Total/NA**

**Prep Batch: 64928**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.01	2.26		ng/L		113	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.88	2.03		ng/L		108	70 - 130
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.90	<2.0		ng/L		103	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.90	2.02		ng/L		106	70 - 130
<b>Surrogate</b>		<b>MS %Recovery</b>	<b>MS Qualifier</b>		<b>Limits</b>				
d5-NEtFOSAA		104			70 - 130				
13C2 PFHxA		120			70 - 130				
13C2 PFDA		121			70 - 130				
13C3-GenX		119			70 - 130				

**Lab Sample ID: 380-71238-4 MSD**

**Matrix: Drinking Water**

**Analysis Batch: 65349**

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

**Prep Type: Total/NA**

**Prep Batch: 64928**

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		2.01	2.31		ng/L		115	70 - 130	5	30
Perfluorooctanesulfonic acid (PFOS)	2.2		1.86	4.13		ng/L		102	70 - 130	2	30
Perfluoroundecanoic acid (PFUnA)	<2.0		2.01	2.38		ng/L		118	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.01	2.32		ng/L		115	70 - 130	8	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.01	2.41		ng/L		120	70 - 130	7	30
Perfluorohexanoic acid (PFHxA)	2.2		2.01	4.06		ng/L		93	70 - 130	8	30
Perfluorododecanoic acid (PFDoA)	<2.0		2.01	2.17		ng/L		108	70 - 130	0	30
Perfluorooctanoic acid (PFOA)	2.0		2.01	4.32		ng/L		116	70 - 130	3	30
Perfluorodecanoic acid (PFDA)	<2.0		2.01	2.35		ng/L		117	70 - 130	1	30
Perfluorohexanesulfonic acid (PFHxS)	2.7		1.84	4.63		ng/L		105	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	<2.0		1.78	3.42		ng/L		111	70 - 130	0	30
Perfluoroheptanoic acid (PFHpA)	<2.0		2.01	3.17		ng/L		104	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<2.0		2.01	2.49		ng/L		124	70 - 130	1	30
Perfluorotetradecanoic acid (PFTA)	<2.0		2.01	2.50		ng/L		124	70 - 130	2	30
Perfluorotridecanoic acid (PFTTrDA)	<2.0		2.01	2.28		ng/L		113	70 - 130	1	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	<2.0		1.88	2.12		ng/L		113	70 - 130	4	30
11-Chloroeicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<2.0		1.90	2.04		ng/L		107	70 - 130	4	30

Eurofins Eaton Analytical Pomona

# QC Sample Results

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-4 MSD**  
**Matrix: Drinking Water**  
**Analysis Batch: 65349**

**Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1**  
**Prep Type: Total/NA**  
**Prep Batch: 64928**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		1.90	2.11		ng/L		111	70 - 130	4	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
d5-NEtFOSAA	106		70 - 130								
13C2 PFHxA	109		70 - 130								
13C2 PFDA	114		70 - 130								
13C3-GenX	111		70 - 130								

## Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

**Lab Sample ID: 112871-B1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-44018**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: O-44018\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Acenaphthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Acenaphthylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Biphenyl	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Chrysene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Dibenzothiophene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		11/20/23 00:00	12/16/23 22:37	1
Fluoranthene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Fluorene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Naphthalene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Perylene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Phenanthrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
Pyrene	ND		0.005	0.001	µg/L		11/20/23 00:00	12/16/23 22:37	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Blank Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
(d10-Acenaphthene)	94		27 - 133				11/20/23 00:00	12/16/23 22:37	1
(d10-Phenanthrene)	97		43 - 129				11/20/23 00:00	12/16/23 22:37	1
(d12-Chrysene)	89		52 - 144				11/20/23 00:00	12/16/23 22:37	1

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# QC Sample Results

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

Job ID: 380-71238-1

## Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

**Lab Sample ID: 112871-B1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-44018**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: O-44018\_P**

Surrogate	Blank Blank		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
(d12-Perylene)	91		36 - 161	11/20/23 00:00	12/16/23 22:37	1
(d8-Naphthalene)	89		25 - 125	11/20/23 00:00	12/16/23 22:37	1

**Lab Sample ID: 112871-BS1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-44018**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: O-44018\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylphenanthrene	0.5	0.486		µg/L		97	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.477		µg/L		95	55 - 122
2,6-Dimethylnaphthalene	0.5	0.489		µg/L		98	48 - 120
2-Methylnaphthalene	0.5	0.487		µg/L		97	47 - 130
Acenaphthene	0.5	0.492		µg/L		98	53 - 131
Acenaphthylene	0.5	0.489		µg/L		98	43 - 140
Anthracene	0.5	0.486		µg/L		97	58 - 135
Benz[a]anthracene	0.5	0.411		µg/L		82	55 - 145
Benzo[a]pyrene	0.5	0.462		µg/L		92	51 - 143
Benzo[b]fluoranthene	0.5	0.428		µg/L		86	46 - 165
Benzo[e]pyrene	0.5	0.419		µg/L		84	42 - 152
Benzo[g,h,i]perylene	0.5	0.481		µg/L		96	63 - 133
Benzo[k]fluoranthene	0.5	0.417		µg/L		83	56 - 145
Biphenyl	0.5	0.48		µg/L		96	56 - 119
Chrysene	0.5	0.446		µg/L		89	56 - 141
Dibenz[a,h]anthracene	0.5	0.509		µg/L		102	55 - 150
Dibenzo[a,l]pyrene	0.5	0.524		µg/L		105	50 - 150
Dibenzothiophene	0.5	0.494		µg/L		99	46 - 126
Disalicylidenepropanediamine	50	46.8		µg/L		94	50 - 150
Fluoranthene	0.5	0.458		µg/L		92	60 - 146
Fluorene	0.5	0.488		µg/L		98	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.453		µg/L		91	50 - 151
Naphthalene	0.5	0.478		µg/L		96	41 - 126
Perylene	0.5	0.449		µg/L		90	48 - 141
Phenanthrene	0.5	0.479		µg/L		96	67 - 127
Pyrene	0.5	0.471		µg/L		94	54 - 156

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	101		27 - 133
(d10-Phenanthrene)	98		43 - 129
(d12-Chrysene)	95		52 - 144
(d12-Perylene)	88		36 - 161
(d8-Naphthalene)	98		25 - 125

# QC Sample Results

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

Job ID: 380-71238-1

## Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

**Lab Sample ID: 112871-BS2**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-44018**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: O-44018\_P**

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
1-Methylnaphthalene	0.5	0.466		µg/L		93	31 - 128	4	30	
1-Methylphenanthrene	0.5	0.49		µg/L		98	66 - 127	1	30	
2,3,5-Trimethylnaphthalene	0.5	0.481		µg/L		96	55 - 122	1	30	
2,6-Dimethylnaphthalene	0.5	0.476		µg/L		95	48 - 120	3	30	
2-Methylnaphthalene	0.5	0.473		µg/L		95	47 - 130	2	30	
Acenaphthene	0.5	0.483		µg/L		97	53 - 131	1	30	
Acenaphthylene	0.5	0.481		µg/L		96	43 - 140	2	30	
Anthracene	0.5	0.479		µg/L		96	58 - 135	1	30	
Benz[a]anthracene	0.5	0.41		µg/L		82	55 - 145	0	30	
Benzo[a]pyrene	0.5	0.456		µg/L		91	51 - 143	1	30	
Benzo[b]fluoranthene	0.5	0.423		µg/L		85	46 - 165	1	30	
Benzo[e]pyrene	0.5	0.421		µg/L		84	42 - 152	0	30	
Benzo[g,h,i]perylene	0.5	0.478		µg/L		96	63 - 133	0	30	
Benzo[k]fluoranthene	0.5	0.418		µg/L		84	56 - 145	1	30	
Biphenyl	0.5	0.476		µg/L		95	56 - 119	1	30	
Chrysene	0.5	0.44		µg/L		88	56 - 141	1	30	
Dibenz[a,h]anthracene	0.5	0.508		µg/L		102	55 - 150	0	30	
Dibenzo[a,l]pyrene	0.5	0.527		µg/L		105	50 - 150	0	30	
Dibenzothiophene	0.5	0.49		µg/L		98	46 - 126	1	30	
Disalicylideneprapanediamine	50	53		µg/L		106	50 - 150	12	30	
Fluoranthene	0.5	0.455		µg/L		91	60 - 146	1	30	
Fluorene	0.5	0.487		µg/L		97	58 - 131	1	30	
Indeno[1,2,3-cd]pyrene	0.5	0.451		µg/L		90	50 - 151	1	30	
Naphthalene	0.5	0.467		µg/L		93	41 - 126	3	30	
Perylene	0.5	0.439		µg/L		88	48 - 141	2	30	
Phenanthrene	0.5	0.477		µg/L		95	67 - 127	1	30	
Pyrene	0.5	0.469		µg/L		94	54 - 156	0	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	100		27 - 133
(d10-Phenanthrene)	98		43 - 129
(d12-Chrysene)	95		52 - 144
(d12-Perylene)	89		36 - 161
(d8-Naphthalene)	95		25 - 125

# QC Association Summary

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

Job ID: 380-71238-1

## GC/MS Semi VOA

### Prep Batch: 64090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	
MB 380-64090/19-A	Method Blank	Total/NA	Water	525.2	
LCS 380-64090/21-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-64090/20-A	Lab Control Sample	Total/NA	Water	525.2	
380-70928-AI-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-71238-1 DU	MOANALUA WELLS	Total/NA	Drinking Water	525.2	

### Analysis Batch: 64322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	64090
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	525.2	64090
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	525.2	64090
MB 380-64090/19-A	Method Blank	Total/NA	Water	525.2	64090
LCS 380-64090/21-A	Lab Control Sample	Total/NA	Water	525.2	64090
MRL 380-64090/20-A	Lab Control Sample	Total/NA	Water	525.2	64090
380-70928-AI-1-A MS	Matrix Spike	Total/NA	Water	525.2	64090
380-71238-1 DU	MOANALUA WELLS	Total/NA	Drinking Water	525.2	64090

### Prep Batch: 64471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
MB 380-64471/21-A	Method Blank	Total/NA	Water	525.2	
LCS 380-64471/23-A	Lab Control Sample	Total/NA	Water	525.2	
MRL 380-64471/22-A	Lab Control Sample	Total/NA	Water	525.2	
380-71418-CB-1-B MS	Matrix Spike	Total/NA	Water	525.2	
380-71755-B-1-B DU	Duplicate	Total/NA	Water	525.2	

### Analysis Batch: 64639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	64471
MB 380-64471/21-A	Method Blank	Total/NA	Water	525.2	64471
LCS 380-64471/23-A	Lab Control Sample	Total/NA	Water	525.2	64471
MRL 380-64471/22-A	Lab Control Sample	Total/NA	Water	525.2	64471
380-71418-CB-1-B MS	Matrix Spike	Total/NA	Water	525.2	64471
380-71755-B-1-B DU	Duplicate	Total/NA	Water	525.2	64471

## GC VOA

### Analysis Batch: 385386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-71238-5	TB MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-71238-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015B GRO LL	
380-71238-7	TB AIEA WELLS PUMPS 1&2 (260)	Total/NA	Water	8015B GRO LL	
380-71238-8	TB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015B GRO LL	
MB 570-385386/6	Method Blank	Total/NA	Water	8015B GRO LL	

Eurofins Eaton Analytical Pomona



# QC Association Summary

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

Job ID: 380-71238-1

## GC VOA (Continued)

### Analysis Batch: 385386 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-385386/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-385386/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-385386/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-71238-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-71238-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	

## GC Semi VOA

### Prep Batch: 384933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	3510C	
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	3510C	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	3510C	
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	3510C	
MB 570-384933/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-384933/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-384933/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-384933/4-A	Lab Control Sample	Total/NA	Water	3510C	

### Analysis Batch: 386980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	
MB 570-386980/3	Method Blank	Total/NA	Water	8015B	
LCS 570-386980/4	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-386980/5	Lab Control Sample Dup	Total/NA	Water	8015B	
MRL 570-386980/6	Lab Control Sample	Total/NA	Water	8015B	
380-71238-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	8015B	
380-71238-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	8015B	

### Analysis Batch: 390550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	384933
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	384933
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	384933
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	384933
MB 570-384933/1-A	Method Blank	Total/NA	Water	8015B	384933
LCS 570-384933/2-A	Lab Control Sample	Total/NA	Water	8015B	384933
LCSD 570-384933/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	384933
MRL 570-384933/4-A	Lab Control Sample	Total/NA	Water	8015B	384933

## LCMS

### Prep Batch: 64812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1 DW	
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1 DW	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1 DW	
MBL 380-64812/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-64812/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	

Eurofins Eaton Analytical Pomona

# QC Association Summary

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

Job ID: 380-71238-1

## LCMS (Continued)

### Prep Batch: 64812 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 380-64812/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-64812/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-70935-E-1-A MS	Matrix Spike	Total/NA	Water	537.1 DW	
380-70935-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1 DW	

### Prep Batch: 64928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-71238-9	FB MOANALUA WELLS	Total/NA	Water	537.1 DW	
380-71238-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1 DW	
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1 DW	
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1 DW	
MBL 380-64928/23-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 380-64928/25-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LCSD 380-64928/26-A	Lab Control Sample Dup	Total/NA	Water	537.1 DW	
MRL 380-64928/24-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-71238-4 MS	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	
380-71238-4 MSD	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1 DW	

### Analysis Batch: 64962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	537.1	64812
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	537.1	64812
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	537.1	64812
MBL 380-64812/23-A	Method Blank	Total/NA	Water	537.1	64812
LCS 380-64812/25-A	Lab Control Sample	Total/NA	Water	537.1	64812
LCSD 380-64812/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	64812
MRL 380-64812/24-A	Lab Control Sample	Total/NA	Water	537.1	64812
380-70935-E-1-A MS	Matrix Spike	Total/NA	Water	537.1	64812
380-70935-F-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	537.1	64812

### Analysis Batch: 65349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	64928
380-71238-9	FB MOANALUA WELLS	Total/NA	Water	537.1	64928
380-71238-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	537.1	64928
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	537.1	64928
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	537.1	64928
MBL 380-64928/23-A	Method Blank	Total/NA	Water	537.1	64928
LCS 380-64928/25-A	Lab Control Sample	Total/NA	Water	537.1	64928
LCSD 380-64928/26-A	Lab Control Sample Dup	Total/NA	Water	537.1	64928
MRL 380-64928/24-A	Lab Control Sample	Total/NA	Water	537.1	64928
380-71238-4 MS	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	64928
380-71238-4 MSD	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	537.1	64928

### Prep Batch: 65757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	533	
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	

# QC Association Summary

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

Job ID: 380-71238-1

## LCMS (Continued)

### Prep Batch: 65757 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-9	FB MOANALUA WELLS	Total/NA	Water	533	
380-71238-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	
MBL 380-65757/21-A	Method Blank	Total/NA	Water	533	
LCS 380-65757/23-A	Lab Control Sample	Total/NA	Water	533	
LCSD 380-65757/24-A	Lab Control Sample Dup	Total/NA	Water	533	
MRL 380-65757/22-A	Lab Control Sample	Total/NA	Water	533	
380-71249-B-1-A LMS	Matrix Spike	Total/NA	Water	533	
380-71249-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	

### Analysis Batch: 66095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	533	65757
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	533	65757
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	533	65757
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	533	65757
380-71238-9	FB MOANALUA WELLS	Total/NA	Water	533	65757
380-71238-10	FB AIEA GULCH WELLS PUMP 2	Total/NA	Water	533	65757
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	533	65757
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	533	65757
MBL 380-65757/21-A	Method Blank	Total/NA	Water	533	65757
LCS 380-65757/23-A	Lab Control Sample	Total/NA	Water	533	65757
LCSD 380-65757/24-A	Lab Control Sample Dup	Total/NA	Water	533	65757
MRL 380-65757/22-A	Lab Control Sample	Total/NA	Water	533	65757
380-71249-B-1-A LMS	Matrix Spike	Total/NA	Water	533	65757
380-71249-C-1-A LMSD	Matrix Spike Duplicate	Total/NA	Water	533	65757

## Subcontract

### Analysis Batch: O-44018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44018_P
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44018_P
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44018_P
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44018_P
112871-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44018_P
112871-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44018_P
112871-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44018_P

### Prep Batch: O-44018\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-71238-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-71238-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	

Eurofins Eaton Analytical Pomona

# QC Association Summary

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

Job ID: 380-71238-1

## Subcontract (Continued)

### Prep Batch: O-44018\_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
112871-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
112871-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
112871-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18

# Lab Chronicle

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

Job ID: 380-71238-1

## Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-71238-1

Date Collected: 11/13/23 09:50

Matrix: Drinking Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			64090	N8NE	EA POM	11/16/23 16:10
Total/NA	Analysis	525.2		1	64322	Q8LA	EA POM	11/17/23 19:40
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 15:04
Total/NA	Prep	3510C			384933	USUL	EET CAL 4	11/17/23 15:13
Total/NA	Analysis	8015B		1	390550	SP9M	EET CAL 4	12/08/23 14:12
Total/NA	Analysis	8015B		1	386980	J7WE	EET CAL 4	11/27/23 19:21
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 10:13
Total/NA	Prep	537.1 DW			64812	SL5Q	EA POM	11/21/23 13:23
Total/NA	Analysis	537.1		1	64962	R6YA	EA POM	11/22/23 14:02
Total/NA	Prep	EPA_625		1	O-44018_P			11/20/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44018	YC		12/17/23 03:51

## Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-71238-2

Date Collected: 11/13/23 10:57

Matrix: Drinking Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			64471	N8NE	EA POM	11/19/23 18:50
Total/NA	Analysis	525.2		1	64639	UPAC	EA POM	11/20/23 23:34
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 15:30
Total/NA	Prep	3510C			384933	USUL	EET CAL 4	11/17/23 15:13
Total/NA	Analysis	8015B		1	390550	SP9M	EET CAL 4	12/08/23 14:33
Total/NA	Analysis	8015B		1	386980	J7WE	EET CAL 4	11/27/23 19:42
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 10:23
Total/NA	Prep	537.1 DW			64812	SL5Q	EA POM	11/21/23 13:23
Total/NA	Analysis	537.1		1	64962	R6YA	EA POM	11/22/23 14:11
Total/NA	Prep	EPA_625		1	O-44018_P			11/20/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44018	YC		12/17/23 05:35

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

Lab Sample ID: 380-71238-3

Date Collected: 11/13/23 11:26

Matrix: Drinking Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			64090	N8NE	EA POM	11/16/23 16:10
Total/NA	Analysis	525.2		1	64322	Q8LA	EA POM	11/17/23 20:20
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 15:57
Total/NA	Prep	3510C			384933	USUL	EET CAL 4	11/17/23 15:13
Total/NA	Analysis	8015B		1	390550	SP9M	EET CAL 4	12/08/23 14:53
Total/NA	Analysis	8015B		1	386980	J7WE	EET CAL 4	11/27/23 20:04

# Lab Chronicle

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

Job ID: 380-71238-1

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

Lab Sample ID: 380-71238-3

Date Collected: 11/13/23 11:26

Matrix: Drinking Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 10:33
Total/NA	Prep	537.1 DW			64812	SL5Q	EA POM	11/21/23 13:23
Total/NA	Analysis	537.1		1	64962	R6YA	EA POM	11/22/23 14:21
Total/NA	Prep	EPA_625		1	O-44018_P			11/20/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44018	YC		12/17/23 07:20

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

Lab Sample ID: 380-71238-4

Date Collected: 11/13/23 10:23

Matrix: Drinking Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			64090	N8NE	EA POM	11/16/23 16:10
Total/NA	Analysis	525.2		1	64322	Q8LA	EA POM	11/17/23 20:40
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 16:23
Total/NA	Prep	3510C			384933	USUL	EET CAL 4	11/17/23 15:13
Total/NA	Analysis	8015B		1	390550	SP9M	EET CAL 4	12/08/23 15:14
Total/NA	Analysis	8015B		1	386980	J7WE	EET CAL 4	11/27/23 20:26
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 10:42
Total/NA	Prep	537.1 DW			64928	SL5Q	EA POM	11/22/23 08:34
Total/NA	Analysis	537.1		1	65349	R6YA	EA POM	11/27/23 17:53
Total/NA	Prep	EPA_625		1	O-44018_P			11/20/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44018	YC		12/17/23 09:05

## Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-71238-5

Date Collected: 11/13/23 09:50

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 13:20

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

Lab Sample ID: 380-71238-6

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 13:46

# Lab Chronicle

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

Job ID: 380-71238-1

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

Lab Sample ID: 380-71238-7

Date Collected: 11/13/23 11:26

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 14:12

## Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-71238-8

Date Collected: 11/13/23 10:23

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	385386	A9VE	EET CAL 4	11/20/23 14:38

## Client Sample ID: FB MOANALUA WELLS

Lab Sample ID: 380-71238-9

Date Collected: 11/13/23 09:50

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 10:52
Total/NA	Prep	537.1 DW			64928	SL5Q	EA POM	11/22/23 08:34
Total/NA	Analysis	537.1		1	65349	R6YA	EA POM	11/27/23 18:22

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

Lab Sample ID: 380-71238-10

Date Collected: 11/13/23 10:57

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 11:01
Total/NA	Prep	537.1 DW			64928	SL5Q	EA POM	11/22/23 08:34
Total/NA	Analysis	537.1		1	65349	R6YA	EA POM	11/27/23 18:32

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

Lab Sample ID: 380-71238-11

Date Collected: 11/13/23 11:26

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 11:11
Total/NA	Prep	537.1 DW			64928	SL5Q	EA POM	11/22/23 08:34
Total/NA	Analysis	537.1		1	65349	R6YA	EA POM	11/27/23 18:42

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

Lab Sample ID: 380-71238-12

Date Collected: 11/13/23 10:23

Matrix: Water

Date Received: 11/15/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			65757	T2EP	EA POM	11/29/23 12:29
Total/NA	Analysis	533		1	66095	SZ9R	EA POM	12/01/23 11:30

# Lab Chronicle

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

Job ID: 380-71238-1

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

**Lab Sample ID: 380-71238-12**

**Date Collected: 11/13/23 10:23**

**Matrix: Water**

**Date Received: 11/15/23 10:00**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	537.1 DW			64928	SL5Q	EA POM	11/22/23 08:34
Total/NA	Analysis	537.1		1	65349	R6YA	EA POM	11/27/23 18:51

**Laboratory References:**

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

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

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494





# Accreditation/Certification Summary

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

Job ID: 380-71238-1

## 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: 380-71238-1

## Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

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

# Accreditation/Certification Summary

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

Job ID: 380-71238-1

## Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

## Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-24
California	Los Angeles County Sanitation Districts	10109	08-01-24
California	State	3082	07-31-24
Kansas	NELAP	E-10420	08-01-24
Nevada	State	CA00111	07-31-24
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	06-08-26
Washington	State	C916-18	10-11-24

# Method Summary

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

Job ID: 380-71238-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
8015B	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	EET CAL 4
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA POM
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA POM
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806

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

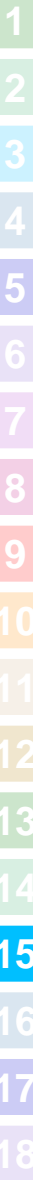
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

# Sample Summary

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

Job ID: 380-71238-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-71238-1	MOANALUA WELLS	Drinking Water	11/13/23 09:50	11/15/23 10:00	HI0000331
380-71238-2	AIEA GULCH WELLS PUMP 2	Drinking Water	11/13/23 10:57	11/15/23 10:00	HI0000331
380-71238-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	11/13/23 11:26	11/15/23 10:00	HI0000331
380-71238-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	11/13/23 10:23	11/15/23 10:00	HI0000331
380-71238-5	TB MOANALUA WELLS	Water	11/13/23 09:50	11/15/23 10:00	HI0000331
380-71238-6	TB AIEA GULCH WELLS PUMP 2	Water	11/13/23 10:57	11/15/23 10:00	HI0000331
380-71238-7	TB AIEA WELLS PUMPS 1&2 (260)	Water	11/13/23 11:26	11/15/23 10:00	HI0000331
380-71238-8	TB HALAWA WELLS UNITS 1 & 2 P1	Water	11/13/23 10:23	11/15/23 10:00	HI0000331
380-71238-9	FB MOANALUA WELLS	Water	11/13/23 09:50	11/15/23 10:00	HI0000331
380-71238-10	FB AIEA GULCH WELLS PUMP 2	Water	11/13/23 10:57	11/15/23 10:00	HI0000331
380-71238-11	FB AIEA WELLS PUMPS 1&2 (260) P2	Water	11/13/23 11:26	11/15/23 10:00	HI0000331
380-71238-12	FB HALAWA WELLS UNITS 1 & 2 P1	Water	11/13/23 10:23	11/15/23 10:00	HI0000331



December 18, 2023

Rachelle Arada  
 Eurofins Eaton Analytical  
 750 Royal Oaks Drive  
 Suite 100  
 Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-71238-1  
 Physis Project ID: 1407003-461

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 11/16/2023. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

Organics
Polynuclear Aromatic Hydrocarbons by EPA 625.1
Disalicylidenepropanediamine by EPA 625.1
Dibenzo [a,l] Pyrene w/ PAHs by EPA 625.1

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Rachel Hansen  
 714 602-5320  
 Extension 203  
 rachelhansen@physislabs.com



## PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-461

RED-HILL Project # 38001111 Job # 380-71238-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
112872	MOANALUA WELLS	380-71238-1	11/13/202	9:50	Samplewater	Not Specified
112873	AIEA GULCH WELLS PUMP 2	380-71238-2	11/13/202	10:57	Samplewater	Not Specified
112874	AIEA WELLS PUMPS 1&2 (260) P2	380-71238-3	11/13/202	11:26	Samplewater	Not Specified
112875	HALAWA WELLS UNITS 1 & 2 P1	380-71238-4	11/13/202	10:23	Samplewater	Not Specified

## ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight



## QUALITY ASSURANCE SUMMARY

**LABORATORY BATCH:** Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

**PROCEDURAL BLANK:** Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

**ACCURACY:** Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

**PRECISION:** Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS<sub>1</sub>/MS<sub>2</sub>, BS<sub>1</sub>/BS<sub>2</sub>, LCS<sub>1</sub>/LCS<sub>2</sub>, LCM<sub>1</sub>/LCM<sub>2</sub>, CRM<sub>1</sub>/CRM<sub>2</sub>, surrogate spikes and/or replicate project sample analysis (R<sub>1</sub>/R<sub>2</sub>) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

**BLANK SPIKES:** BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

**MATRIX SPIKES:** MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

**CERTIFIED REFERENCE MATERIALS:** CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

**LABORATORY CONTROL MATERIAL:** LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

**LABORATORY CONTROL SPIKES:** LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

**SURROGATES:** A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to

the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

**HOLDING TIME:** Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

**SAMPLE STORAGE/RETENTION:** In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

**TOTAL/DISSOLVED FRACTION:** In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

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## PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

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## CASE NARRATIVE

### QUALIFIER NOTES

In addition to the use of analyte specific Physis Qualifier Codes where applicable, the following were also noted.

#### **ND**

MDL is listed due to report format restrictions; it is not used in reporting. Analytical results reported are ND at the RL.

# ANALYTICAL REPOR

TERRA AURA  
ENVIRONMENTAL LABORATORIES, INC.

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### Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 112872-R1 MOANALUA WELLS 380-71238-1 Matrix: Samplewater</b>											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44018	20-Nov-23	17-Dec-23
<b>Sample ID: 112873-R1 AIEA GULCH WELLS PUMP 2 380-71 Matrix: Samplewater</b>											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44018	20-Nov-23	17-Dec-23
<b>Sample ID: 112874-R1 AIEA WELLS PUMPS 1&amp;2 (260) P2 3 Matrix: Samplewater</b>											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44018	20-Nov-23	17-Dec-23
<b>Sample ID: 112875-R1 HALAWA WELLS UNITS 1 &amp; 2 P1 38 Matrix: Samplewater</b>											
Disalicylideneopropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44018	20-Nov-23	17-Dec-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 112872-R1</b>	<b>MOANALUA WELLS 380-71238-1</b>	<b>Matrix: Samplewater</b>					<b>Sampled: 13-Nov-23 9:50</b>			<b>Received: 16-Nov-23</b>	
(d10-Acenaphthene)	EPA 625.1	% Recovery	50	1			Total		O-44018	20-Nov-23	17-Dec-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	52	1			Total		O-44018	20-Nov-23	17-Dec-23
(d12-Chrysene)	EPA 625.1	% Recovery	78	1			Total		O-44018	20-Nov-23	17-Dec-23
(d12-Perylene)	EPA 625.1	% Recovery	81	1			Total		O-44018	20-Nov-23	17-Dec-23
(d8-Naphthalene)	EPA 625.1	% Recovery	47	1			Total		O-44018	20-Nov-23	17-Dec-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23



## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
<b>Sample ID: 112873-R1</b>	<b>AIEA GULCH WELLS PUMP 2 380-71 Matrix: Samplewater</b>						<b>Sampled:</b>	<b>13-Nov-23 10:57</b>	<b>Received:</b>	<b>16-Nov-23</b>		
(d10-Acenaphthene)	EPA 625.1	% Recovery	37	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	43	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d12-Chrysene)	EPA 625.1	% Recovery	71	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d12-Perylene)	EPA 625.1	% Recovery	74	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	35	1			Total		O-44018	20-Nov-23	17-Dec-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	

### Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23



## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
<b>Sample ID: 112874-R1</b>	<b>AIEA WELLS PUMPS 1&amp;2 (260) P2 3 Matrix: Samplewater</b>						<b>Sampled:</b>	<b>13-Nov-23</b>	<b>11:26</b>	<b>Received:</b>	<b>16-Nov-23</b>	
(d10-Acenaphthene)	EPA 625.1	% Recovery	49	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	51	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d12-Chrysene)	EPA 625.1	% Recovery	81	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d12-Perylene)	EPA 625.1	% Recovery	84	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	48	1			Total		O-44018	20-Nov-23	17-Dec-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	

### Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23



## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
<b>Sample ID: 112875-R1</b>	<b>HALAWA WELLS UNITS 1 &amp; 2 P1 38 Matrix: Samplewater</b>						<b>Sampled:</b>	<b>13-Nov-23 10:23</b>	<b>Received:</b>	<b>16-Nov-23</b>		
(d10-Acenaphthene)	EPA 625.1	% Recovery	37	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	44	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d12-Chrysene)	EPA 625.1	% Recovery	74	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d12-Perylene)	EPA 625.1	% Recovery	79	1			Total		O-44018	20-Nov-23	17-Dec-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	36	1			Total		O-44018	20-Nov-23	17-Dec-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23	

### Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44018	20-Nov-23	17-Dec-23

# QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

*Innovative Solutions for Nature*

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## Base/Neutral Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE		SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
<b>Sample ID: 112871-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>				<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44018			Prepared: 20-Nov-23				Analyzed: 16-Dec-23			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L									
<b>Sample ID: 112871-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>				<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44018			Prepared: 20-Nov-23				Analyzed: 17-Dec-23			
Disalicylidenepropanediamin	Total	46.8	1	0.05	0.1	µg/L	50	0	94	50 - 150%	PASS				
<b>Sample ID: 112871-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>				<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44018			Prepared: 20-Nov-23				Analyzed: 17-Dec-23			
Disalicylidenepropanediamin	Total	53	1	0.05	0.1	µg/L	50	0	106	50 - 150%	PASS	12	30	PASS	



## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
<b>Sample ID: 112871-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>		
		Method: EPA 625.1			Batch ID: O-44018		Prepared: 20-Nov-23		Analyzed: 16-Dec-23		
(d10-Acenaphthene)	Total	94	1			% Recovery	100	94	27 - 133%	PASS	
(d10-Phenanthrene)	Total	97	1			% Recovery	100	97	43 - 129%	PASS	
(d12-Chrysene)	Total	89	1			% Recovery	100	89	52 - 144%	PASS	
(d12-Perylene)	Total	91	1			% Recovery	100	91	36 - 161%	PASS	
(d8-Naphthalene)	Total	89	1			% Recovery	100	89	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							
Fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Fluorene	Total	ND	1	0.001	0.005	µg/L							
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L							
Naphthalene	Total	ND	1	0.001	0.005	µg/L							
Perylene	Total	ND	1	0.001	0.005	µg/L							
Phenanthrene	Total	ND	1	0.001	0.005	µg/L							
Pyrene	Total	ND	1	0.001	0.005	µg/L							

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODEC
							LEVEL	RESULT	%	LIMITS	%	LIMITS
<b>Sample ID: 112871-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
Method: EPA 625.1		Batch ID: O-44018			Prepared: 20-Nov-23		Analyzed: 17-Dec-23					
(d10-Acenaphthene)	Total	101	1			% Recovery	100	0	101	27 - 133%	PASS	
(d10-Phenanthrene)	Total	98	1			% Recovery	100	0	98	43 - 129%	PASS	
(d12-Chrysene)	Total	95	1			% Recovery	100	0	95	52 - 144%	PASS	
(d12-Perylene)	Total	88	1			% Recovery	100	0	88	36 - 161%	PASS	
(d8-Naphthalene)	Total	98	1			% Recovery	100	0	98	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.486	1	0.001	0.005	µg/L	0.5	0	97	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	47 - 130%	PASS	
Acenaphthene	Total	0.492	1	0.001	0.005	µg/L	0.5	0	98	53 - 131%	PASS	
Acenaphthylene	Total	0.489	1	0.001	0.005	µg/L	0.5	0	98	43 - 140%	PASS	
Anthracene	Total	0.486	1	0.001	0.005	µg/L	0.5	0	97	58 - 135%	PASS	
Benz[a]anthracene	Total	0.411	1	0.001	0.005	µg/L	0.5	0	82	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	56 - 145%	PASS	
Biphenyl	Total	0.48	1	0.001	0.005	µg/L	0.5	0	96	56 - 119%	PASS	
Chrysene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.509	1	0.001	0.005	µg/L	0.5	0	102	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	50 - 150%	PASS	

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.494	1	0.001	0.005	µg/L	0.5	0	99	46 - 126%	PASS		
Fluoranthene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	60 - 146%	PASS		
Fluorene	Total	0.488	1	0.001	0.005	µg/L	0.5	0	98	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	50 - 151%	PASS		
Naphthalene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	41 - 126%	PASS		
Perylene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	48 - 141%	PASS		
Phenanthrene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	67 - 127%	PASS		
Pyrene	Total	0.471	1	0.001	0.005	µg/L	0.5	0	94	54 - 156%	PASS		



## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
<b>Sample ID: 112871-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>			<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-44018			Prepared: 20-Nov-23			Analyzed: 17-Dec-23			
(d10-Acenaphthene)	Total	100	1			% Recovery	100	0	100	27 - 133%	PASS	1	30	PASS
(d10-Phenanthrene)	Total	98	1			% Recovery	100	0	98	43 - 129%	PASS	0	30	PASS
(d12-Chrysene)	Total	95	1			% Recovery	100	0	95	52 - 144%	PASS	0	30	PASS
(d12-Perylene)	Total	89	1			% Recovery	100	0	89	36 - 161%	PASS	1	30	PASS
(d8-Naphthalene)	Total	95	1			% Recovery	100	0	95	25 - 125%	PASS	3	30	PASS
1-Methylnaphthalene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	31 - 128%	PASS	4	30	PASS
1-Methylphenanthrene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	66 - 127%	PASS	1	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	55 - 122%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	48 - 120%	PASS	3	30	PASS
2-Methylnaphthalene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	47 - 130%	PASS	2	30	PASS
Acenaphthene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	53 - 131%	PASS	1	30	PASS
Acenaphthylene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	43 - 140%	PASS	2	30	PASS
Anthracene	Total	0.479	1	0.001	0.005	µg/L	0.5	0	96	58 - 135%	PASS	1	30	PASS
Benz[a]anthracene	Total	0.41	1	0.001	0.005	µg/L	0.5	0	82	55 - 145%	PASS	0	30	PASS
Benzo[a]pyrene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	51 - 143%	PASS	1	30	PASS
Benzo[b]fluoranthene	Total	0.423	1	0.001	0.005	µg/L	0.5	0	85	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	42 - 152%	PASS	0	30	PASS
Benzo[g,h,i]perylene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	63 - 133%	PASS	0	30	PASS
Benzo[k]fluoranthene	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	56 - 119%	PASS	1	30	PASS
Chrysene	Total	0.44	1	0.001	0.005	µg/L	0.5	0	88	56 - 141%	PASS	1	30	PASS
Dibenz[a,h]anthracene	Total	0.508	1	0.001	0.005	µg/L	0.5	0	102	55 - 150%	PASS	0	30	PASS
Dibenzo[a,l]pyrene	Total	0.527	1	0.001	0.005	µg/L	0.5	0	105	50 - 150%	PASS	0	30	PASS

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Dibenzothiophene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	46 - 126%	PASS	1	30	PASS
Fluoranthene	Total	0.455	1	0.001	0.005	µg/L	0.5	0	91	60 - 146%	PASS	1	30	PASS
Fluorene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	58 - 131%	PASS	1	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	50 - 151%	PASS	1	30	PASS
Naphthalene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	41 - 126%	PASS	3	30	PASS
Perylene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	48 - 141%	PASS	2	30	PASS
Phenanthrene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	67 - 127%	PASS	1	30	PASS
Pyrene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	54 - 156%	PASS	0	30	PASS

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# PHYSIS

**TENTATIVELY IDENTIFIED COMPOUNDS**

ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*

Sample ID: 112872

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.0435	6.6998	1111	Anthracene-D10-	1719-06-8	96
10.4599	5.3986	895	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	91
10.8260	1.0708	178	1-Butene, 2,3,3-trimethyl-	594-56-9	87
10.2223	0.9600	159	Hydroperoxide, 1-methylpentyl	24254-55-5	87

Concentration estimated using the response for Anthracene-d10

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Sample ID: 112873

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.0453	7.2727	1111	Anthracene-D10	1517-22-2	94
10.4597	4.9365	754	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89
43.2027	1.0503	160	Biphenylene	259-79-0	83
10.2234	0.8276	126	Hydroperoxide, 1-methylpentyl	24254-55-5	89
10.8256	0.7406	113	3,3-Diethoxy-1-propyne	10160-87-9	85

Concentration estimated using the response for Anthracene-d10

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Sample ID: 112874

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.0429	6.5068	1111	Anthracene-D10-	1719-06-8	96
10.4588	5.1108	873	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	91
10.8253	0.9239	158	3,3-Diethoxy-1-propyne	10160-87-9	89
10.8253	0.9230	158	Cyclopropane, 1,1,2,2-tetramethyl-	4127-47-3	87
10.2220	0.8792	150	Hydroperoxide, 1-methylpentyl	24254-55-5	89

Concentration estimated using the response for Anthracene-d10

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Sample ID: 112875

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.0426	5.7420	1111	Anthracene-D10-	1719-06-8	97
10.4621	5.3219	1030	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	89
10.4621	5.3035	1026	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89
10.2271	0.8847	171	Hydroperoxide, 1-methylpentyl	24254-55-5	89
43.2008	0.6818	132	Acenaphthylene	208-96-8	83
10.7937	0.5517	107	1-Butene, 2,3,3-trimethyl-	594-56-9	88

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1\_44018

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.0443	4.9719	1111	Anthracene-D10-	1719-06-8	96
10.4622	4.6779	1045	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89
10.2269	0.8167	183	Hydroperoxide, 1-methylpentyl	24254-55-5	90
28.5800	0.6674	149	Benzene, 1,2,3,5-tetrachloro-4,6-dimethyl-	877-09-8	96
43.2010	0.6370	142	Acenaphthylene	208-96-8	80
10.7944	0.5149	115	1-Butene, 2,3,3-trimethyl-	594-56-9	88

Concentration estimated using the response for Anthracene-d10

# PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

*Innovative Solutions for Nature*

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Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No.:
Company: Physys Environmental Laboratories		Phone:	Arada, Rachelle		380-90490-1
Address: 1904 Wright Circle, Anaheim, CA, 92806		Due Date Requested: 11/29/2023	E-Mail: Rachelle.Arada@et.eurofins.com	State of Origin: Hawaii	Page: 1 of 1
City: Anaheim		TAT Requested (days):	Accreditations Required (See note): State - Hawaii		Job #: 380-71238-1
State, zip: CA, 92806		PO #:	<b>Analysis Requested</b> Perform MS/MSD (Yes or No) SUB (625 PAH Physys LL (EAL) + TICs) / 625 PAH Physys LL (EAL) + TICs		
Phone:		WO #:			
Email:		Project #:			
Project Name: RED-HILL		SSON#: 38001111			
Site: Honolulu BWS Sites					

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=Water, S=solid, O=overst, B=Brine, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Total Number of containers	Special Instructions/Note:
MOANALUA WELLS (380-71238-1)	11/13/23	09:50		Water		X	2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-71238-2)	11/13/23	10:57		Water		X	2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-71238-3)	11/13/23	11:26		Water		X	2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-71238-4)	11/13/23	10:23		Water		X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

**Possible Hazard Identification**  
 Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 4/16/23 12:20 Company: BCSP

Relinquished by: \_\_\_\_\_ Date/Time: 11-16/23 12555 Company: BCSP

Custody Seals Intact: Δ Yes Δ No Custody Seal No.: \_\_\_\_\_ Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: 11/16/23 12:20 Company: BCSP

Received by: \_\_\_\_\_ Date/Time: 11/16/23 1256 Company: PHYSYS

Special Instructions/QC Requirements: \_\_\_\_\_ Disposal By Lab \_\_\_\_\_ Archive For \_\_\_\_\_ Months

Method of Shipment: \_\_\_\_\_



Project Iteration ID: 1407003-461  
Client Name: Eurofins Eaton Analytical  
Project Name: RED-HILL Project # 38001111 Job  
# 380-71238-1  
COC Page Number: 1 of 2  
Bottle Label Color: NA

Chemical Laboratory

Sample ID	Sample Name	Sample Type	Sample Location	Sample Date	Sample Time	Sample Status	Sample Notes
1407003-461-001	...	...	...	...	...	...	...
1407003-461-002	...	...	...	...	...	...	...
1407003-461-003	...	...	...	...	...	...	...
1407003-461-004	...	...	...	...	...	...	...
1407003-461-005	...	...	...	...	...	...	...
1407003-461-006	...	...	...	...	...	...	...
1407003-461-007	...	...	...	...	...	...	...
1407003-461-008	...	...	...	...	...	...	...
1407003-461-009	...	...	...	...	...	...	...
1407003-461-010	...	...	...	...	...	...	...
1407003-461-011	...	...	...	...	...	...	...
1407003-461-012	...	...	...	...	...	...	...
1407003-461-013	...	...	...	...	...	...	...
1407003-461-014	...	...	...	...	...	...	...
1407003-461-015	...	...	...	...	...	...	...
1407003-461-016	...	...	...	...	...	...	...
1407003-461-017	...	...	...	...	...	...	...
1407003-461-018	...	...	...	...	...	...	...

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Project Iteration ID: 1407003-461  
 Client Name: Eurofins Eaton Analytical  
 Project Name: RED-HILL Project # 38001111 Job # 380-71238-1  
 COC Page Number: 2 of 2  
 Bottle Label Color: NA

**Sample Receipt Summary**

**Receiving Info**

1. Initials Received By: CN
2. Date Received: 11/16/23
3. Time Received: 1256
4. Client Name: EUROFINS
5. Courier Information: (Please circle)
  - Client
    - UPS
    - Area Fast
    - DRS
  - FedEx
    - GSO/GLS
    - Ontrac
    - PAMS
  - PHYSIS Driver:
    - i. Start Time: \_\_\_\_\_
    - ii. End Time: \_\_\_\_\_
    - iii. Total Mileage: \_\_\_\_\_
    - iv. Number of Pickups: \_\_\_\_\_
6. Container Information: (Please put the # of containers or circle none)
  - 1 Cooler
  - Styrofoam Cooler
  - Boxes
  - None
  - Carboy(s)
  - Carboy Trash Can(s)
  - Carboy Cap(s)
  - Other \_\_\_\_\_
7. What type of ice was used: (Please circle any that apply)
  - Wet Ice
  - Blue Ice
  - Dry Ice
  - Water
  - None
8. Randomly Selected Samples Temperature (°C): 4.5  
 Used I/R Thermometer # 1

**Inspection Info**

1. Initials Inspected By: NT

**Sample Integrity Upon Receipt:**

1. COC(s) included and completely filled out.....  Yes / No
2. All sample containers arrived intact.....  Yes / No
3. All samples listed on COC(s) are present.....  Yes / No
4. Information on containers consistent with information on COC(s).....  Yes / No
5. Correct containers and volume for all analyses indicated.....  Yes / No
6. All samples received within method holding time.....  Yes / No
7. Correct preservation used for all analyses indicated.....  Yes / No
8. Name of sampler included on COC(s).....  Yes / No

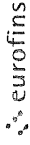
Notes:



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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**

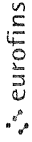


<b>Client Information</b> Client Contact: Dr. Ron Fenstermacher Phone: 808-748-5840 City & County of Honolulu		Lab P/I: Arada Rachelle E-Mail: Rachelle.Arada@get.euromisus.com Carrier Tracking No(s): 380-27941-2757 2 State of Origin: Page 1 of 2 Job #:	
Address: 630 South Beretania Street, Chemistry 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:		<b>Analysis Requested</b> Due Date Requested: TAT Requested (days): Compliance Project: Δ No PO #: C20525101 exp 05312023 WO #: Project #: 38001111 SSOV#:	
<b>Sample Identification</b> MOANALUA WELLS AIEA GULCH WELLS PUMP2 AIEA WELLS PUMPS 1&2 (260) 02 HALAWA WELLS UNITS 1&2 P1		Matrix (W=Water, S=solid, O=water/soil, BT=Tissue, A=Air) Sample Type (C=Comp, G=grab) Preservation Code: Sample Date: 13-Nov-2023 950 G Water 13-Nov-2023 1057 G Water 13-Nov-2023 1126 G Water 13-Nov-2023 1023 G Water	
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements	
<b>Empty Kit Relinquished by</b> Relinquished by: BAILEY Relinquished by: Relinquished by:		Method of Shipment: FED EX 3 COOLERS Date/Time: 11/15/2023 10:00 Company: EGAP Date/Time: Company:	
Custody Seals Intact Δ Yes Δ No Relinquished by: BAILEY Date/Time: 11/15/2023 10:00 Company: EGAP Date/Time: Company:		Relinquished by: G. RETTNER Date/Time: Company: Relinquished by: Date/Time: Company:	
Special Instructions/Note: Total Number of containers: Preservation Codes: A - HCL B - NaOH C - Zn-Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2SO4 Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)		Special Instructions/Note: Total Number of containers: Preservation Codes: A - HCL B - NaOH C - Zn-Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2SO4 Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	



**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>		Lab PM Arada, Rachelle		Carrier Tracking No(s) 380-27941-2757 2	
Client Contact: Dr Ron Fenstermacher		E-Mail Rachelle.Arada@et.euronisus.com		Page Page 2 of 2	
Company City & County of Honolulu		PWSID		Job #	
Address 630 South Beretania Street; Chemistry Lab		Due Date Requested		Analysis Requested	
City Honolulu		TAT Requested (days)		Total Number of Containers	
State Zip HI 96843		Compliance Project Δ No		Preservation Codes:	
Phone 808-748-5091 (tel)		PO # C20625101 exp 06312023		A - HCL N - None O - AsNaO2 P - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid U - Acetone V - ICAA W - pH 4.5 Y - Trizma L - EDA Z - other (specify)	
Email rfenstermacher@hbws.org		WO #		M - Hexane N - None O - AsNaO2 P - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid U - Acetone V - ICAA W - pH 4.5 Y - Trizma L - EDA Z - other (specify)	
Project Name RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		Project # 38001111		T - TSP Dodecahydrate	
Site SSOW#		SSOW#		U - Acetone V - ICAA W - pH 4.5 Y - Trizma L - EDA Z - other (specify)	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=wastebot, BT=Tissue, A=Air)
MOANALUA WELLS	13-Nov-2023	0950	G		Water
AIEA GULCH WELLS PUMP2	13-Nov-2023	1057	G		Water
AIEA WELLS PUMPS 1&2 (260) PZ	13-Nov-2023	1126	G		Water
HALAWA WELLS UNITS 1&2 PI	13-Nov-2023	1023	G		Water
FB MOANALUA WELLS	13-Nov-2023	0950			Water
FB AIEA GULCH WELLS PUMP2	13-Nov-2023	1057			Water
FB AIEA WELLS PUMPS 1&2 (260)	13-Nov-2023	1126			Water
FB HALAWA WELLS UNITS 1&2	13-Nov-2023	1023			Water
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV Other (specify)					
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
<b>Special Instructions/QC Requirements</b>					
Empty Kit Relinquished by		Date		Time	
Relinquished by BAILEY		14NOV-2023		1400	
Relinquished by		Date/Time		Company	
Relinquished by		Date/Time		Company	
Custody Seals Intact. Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks	
				(751A) 0.1° CORRECTION GEL PROZEN Ver: 01/16/2019	



**Eurofins Eaton Analytical Pomona**

941 Corporate Center Drive  
 Pomona, CA 91768-2642  
 Phone: 626-386-1100

**Chain of Custody Record**



eurofins  
 Envi

Loc: 380  
**71238**

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-90478.1																																																																																																																
Client Contact: Shipping/Receiving		Phone:		E-Mail: Rachele.Arada@et.eurofinsus.com		State of Origin: Hawaii		Page: Page 1 of 1																																																																																																																
Company: Eurofins Environment Testing Southwest,				Accreditations Required (See note): State - Hawaii				Job #: 380-71238-1																																																																																																																
Address: 2841 Dow Avenue, Suite 100,		Due Date Requested: 12/7/2023		<table border="1"> <thead> <tr> <th colspan="10">Analysis Requested</th> </tr> <tr> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>8015B_GRO_LL/5030C GRO</th> <th>8015B_DAI/ Ethanol</th> <th>8015B_DRO_LL_CS/3510C_LL_HNL Ranges: C10-C24/C24-C36/C8-C18</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Total Number of containers</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> </tr> <tr> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> </tr> </tbody> </table>						Analysis Requested										Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B_GRO_LL/5030C GRO	8015B_DAI/ Ethanol	8015B_DRO_LL_CS/3510C_LL_HNL Ranges: C10-C24/C24-C36/C8-C18						Total Number of containers	X	X	X	X	X						5	X	X	X	X	X						6	X	X	X	X	X						6	X	X	X	X	X						5	X	X	X	X	X						2	X	X	X	X	X						1	X	X	X	X	X						2	X	X	X	X	X						2	<b>Preservation Codes:</b> A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate              O - AsNaO2 D - Nitric Acid              P - Na2O4S E - NaHSO4                 Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid         T - TSP Dodecahydrate I - Ice                         U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Y - Trizma Z - other (specify)  Other:	
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Project Name: RED-HILL		Project #: 38001111		Sample Type (W=water, S=solid, O=waste/oil, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note:																																																																																																																
Site: Honolulu BWS Sites		SSOW#:		Sample Date		Sample Time		Preservation Code:																																																																																																																
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type		Matrix																																																																																																																
MOANALUA WELLS (380-71238-1)		11/13/23		09:50 Hawaiian		Water		MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.																																																																																																																
AIEA GULCH WELLS PUMP 2 (380-71238-2)		11/13/23		10:57 Hawaiian		Water		MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.																																																																																																																
AIEA WELLS PUMPS 1&2 (260) P2 (380-71238-3)		11/13/23		11:26 Hawaiian		Water		MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.																																																																																																																
HALAWA WELLS UNITS 1 & 2 P1 (380-71238-4)		11/13/23		10:23 Hawaiian		Water		MRLs are needed., initial volume (500ml) and final volume (2ml). MRLs are needed.																																																																																																																
TB MOANALUA WELLS (380-71238-5)		11/13/23		09:50 Hawaiian		Water		MRLs are needed.																																																																																																																
TB AIEA GULCH WELLS PUMP 2 (380-71238-6)		11/13/23		10:57 Hawaiian		Water		MRLs are needed.																																																																																																																
TB AIEA WELLS PUMPS 1&2 (260) (380-71238-7)		11/13/23		11:26 Hawaiian		Water		MRLs are needed.																																																																																																																
TB HALAWA WELLS UNITS 1 & 2 P1 (380-71238-8)		11/13/23		10:23 Hawaiian		Water		MRLs are needed.																																																																																																																

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

<b>Possible Hazard Identification</b>		<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>	
Unconfirmed		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2	
Empty Kit Relinquished by:		Special Instructions/QC Requirements:	
Date:		Time:	
Date/Time:		Method of Shipment:	
Relinquished by: <i>[Signature]</i> 11/16/23 11:06 Company: <i>[Signature]</i>		Received by: <i>[Signature]</i> RUBEN 11/16/23 11:06 Company: DCS	
Relinquished by: <i>[Signature]</i> 11/16/23 11:06 Company: DCS		Received by: _____ Date/Time: _____ Company: _____	
Relinquished by: <i>[Signature]</i> RUBEN 11/16/23 12:03 Company: DCS		Received by: <i>[Signature]</i> 11/16/23 12:03 Company: <i>[Signature]</i>	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No    Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2-0/2.4 SC14	

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-71238-1

**Login Number: 71238**  
**List Number: 1**  
**Creator: Elyas, Matthew**

**List Source: Eurofins Eaton Analytical Pomona**

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

# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-71238-1

**Login Number: 71238**  
**List Number: 2**  
**Creator: Khana, Piyush**

**List Source: Eurofins Calscience**  
**List Creation: 11/16/23 06:30 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	