

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Mr. Erwin Kawata  
City & County of Honolulu  
630 South Beretania Street  
Public Service Bldg. Room 308  
Honolulu, Hawaii 96843

Generated 12/16/2022 11:58:47 AM

## JOB DESCRIPTION

RED-HILL

## JOB NUMBER

380-24805-1

# Eurofins Eaton Monrovia

## Job Notes

Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.

Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

Test results relate only to the sample(s) tested.

Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

## Compliance Statement

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

## Authorization



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Authorized for release by  
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# Definitions/Glossary

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

Job ID: 380-24805-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
B	Analyte was found in the associated method blank.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS 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/MS Semi VOA

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

### GC/MS Semi VOA TICs

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

### GC Semi VOA

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.

### HPLC/IC

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.

### Metals

Qualifier	Qualifier Description
^2	Cal bration Blank (ICB and/or CCB) is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
B	Analyte was found in the associated method blank.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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

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## Definitions/Glossary

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

Job ID: 380-24805-1

### Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

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

Job ID: 380-24805-1

**Job ID: 380-24805-1**

**Laboratory: Eurofins Eaton Monrovia**

## Narrative

**Job Narrative  
380-24805-1**

### Comments

No additional comments.

### Receipt

The samples were received on 10/18/2022 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 3.1° C, 5.1° C, 5.6° C and 5.7° C.

### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The methods and other sample information were indicated for the wrong sample on the first page of the COC. They were noted for AIEA GULCH WELLS PUMP (331-201-TP071), and they should've been noted for the sample below it, AIEA GULCH WELLS PUMP 2 (331-201-TP072). All containers received were from Pump 2.

### GC/MS VOA

Method 524.2: The method blank for batch 380-21256 contained 1,2,3-Trichlorobenzene and Naphthalene above the reporting (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 524.2: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 380-21256 recovered outside control limits for the following analytes: 1,1,2-Trichloro-1,2,2- Trifluoroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyltoluene, ethyl bromide, methylene chloride, trichloroethene, Xylenes, Total 1,1-Dichloroethane, 1,1-Dichloroethylene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Bromobenzene, Bromomethane (Methyl Bromide), Carbon disulfide, Chloroethane, Dichlorodifluoromethane, Ethylbenzene, Hexachlorobutadien m,p-Xylenes, N-Propylbenzene, o-Xylene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Toluene, trans-1,2-Dichloroethylene, Trichlorofluoromethane (Freon 11), Chloromethane (methyl chloride) and Diisopropyl ether. These analytes were biased high in LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 524.2: The continuing calibration verification (CCV) associated with batch 380-21256 recovered above the upper control limit for 1,2,4-Trimethylbenzene, Carbon disulfide, Chloroethane and Styrene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 524.2: The continuing calibration verification (CCV) associated with batch 380-21256 recovered above the upper control limit for m,p-Xylenes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

### GC/MS Semi VOA

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

### HPLC/IC

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

### GC Semi VOA

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

### Metals

Method 200.8: The continuing calibration blank (CCB) for analytical batch 380-21591 contained Cadmium and Silver above the

# Case Narrative

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

Job ID: 380-24805-1

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## Job ID: 380-24805-1 (Continued)

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### Laboratory: Eurofins Eaton Monrovia (Continued)

Method Detection Limit (MDL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

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

### General Chemistry

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

### Subcontract non-Sister

See attached subcontract report.

### Organic Prep

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

### Subcontract Work

Methods 8015 Ethanol, 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 625 Acid/Base/PAH + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.



# Detection Summary

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.0054		0.0020	ug/L	1		505	Total/NA
Bromide	110		5.0	ug/L	1		300.0	Total/NA
Chloride	71		1.0	mg/L	2		300.0	Total/NA
Nitrate as N	0.49		0.10	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.49		0.10	mg/L	2		300.0	Total/NA
Sulfate	9.7		0.50	mg/L	2		300.0	Total/NA
Calcium	19		1.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	15		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	1.8		1.0	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	29		1.0	mg/L	1		200.7 Rev 4.4	Total/NA
Chromium	1.7		1.0	ug/L	1		200.8	Total Recoverable
Copper	2.0		2.0	ug/L	1		200.8	Total Recoverable
A kalinity	55	*-	2.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	55	B	2.0	mg/L	1		SM 2320B	Total/NA
Specific Conductance	370		2.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	250		20	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF		SU	1		SM 4500 H+ B	Total/NA

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

**Lab Sample ID: 380-24805-2**

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

**Date Collected: 10/17/22 11:04**

**Matrix: Water**

**Date Received: 10/18/22 09:40**

**Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			10/20/22 23:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130				10/20/22 23:34	1
4-Bromofluorobenzene (Surr)	92		70 - 130				10/20/22 23:34	1
1,2-Dichloroethane-d4 (Surr)	117		70 - 130				10/20/22 23:34	1

**Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	ug/L			10/21/22 16:58	1
1,1,1-Trichloroethane	ND		0.50	ug/L			10/21/22 16:58	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			10/21/22 16:58	1
1,1,2-Trichloroethane	ND		0.50	ug/L			10/21/22 16:58	1
1,1-Dichloroethylene	ND		0.50	ug/L			10/21/22 16:58	1
1,1-Dichloroethane	ND		0.50	ug/L			10/21/22 16:58	1
1,1-Dichloropropene	ND		0.50	ug/L			10/21/22 16:58	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			10/21/22 16:58	1
1,2,3-Trichloropropane	ND		0.50	ug/L			10/21/22 16:58	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			10/21/22 16:58	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			10/21/22 16:58	1
1,2-Dichloroethane	ND		0.50	ug/L			10/21/22 16:58	1
1,2-Dichloropropane	ND		0.50	ug/L			10/21/22 16:58	1
1,3,5-Trimethy benzene	ND	*1	0.50	ug/L			10/21/22 16:58	1
1,3-Dichloropropane	ND		0.50	ug/L			10/21/22 16:58	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			10/21/22 16:58	1
2,2-Dichloropropane	ND		0.50	ug/L			10/21/22 16:58	1
2-Butanone (MEK)	ND		5.0	ug/L			10/21/22 16:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			10/21/22 16:58	1
Acetone	ND		500	ug/L			10/21/22 16:58	1
Benzene	ND		0.50	ug/L			10/21/22 16:58	1
Bromobenzene	ND		0.50	ug/L			10/21/22 16:58	1
Bromochloromethane	ND		0.50	ug/L			10/21/22 16:58	1
Bromodichloromethane	ND		0.50	ug/L			10/21/22 16:58	1
Bromoethane	ND		0.50	ug/L			10/21/22 16:58	1
Bromoform	ND		0.50	ug/L			10/21/22 16:58	1
Bromomethane (Methyl Bromide)	ND	*1	0.50	ug/L			10/21/22 16:58	1
Carbon disulfide	ND		0.50	ug/L			10/21/22 16:58	1
Carbon tetrachloride	ND		0.50	ug/L			10/21/22 16:58	1
Chlorobenzene	ND		0.50	ug/L			10/21/22 16:58	1
Chlorodibromomethane	ND		0.50	ug/L			10/21/22 16:58	1
Chloroethane	ND		0.50	ug/L			10/21/22 16:58	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			10/21/22 16:58	1
Chloromethane (methyl chloride)	ND	*1	0.50	ug/L			10/21/22 16:58	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			10/21/22 16:58	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			10/21/22 16:58	1
Dibromomethane	ND		0.50	ug/L			10/21/22 16:58	1
Dichlorodifluoromethane	ND		0.50	ug/L			10/21/22 16:58	1
Dichloromethane	ND		0.50	ug/L			10/21/22 16:58	1
Diisopropyl ether	ND		3.0	ug/L			10/21/22 16:58	1

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

**Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.50	ug/L			10/21/22 16:58	1
Hexachlorobutadiene	ND		0.50	ug/L			10/21/22 16:58	1
Isopropyl benzene	ND		0.50	ug/L			10/21/22 16:58	1
m,p-Xylenes	ND		0.50	ug/L			10/21/22 16:58	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			10/21/22 16:58	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			10/21/22 16:58	1
Naphthalene	ND		0.50	ug/L			10/21/22 16:58	1
n-Butylbenzene	ND		0.50	ug/L			10/21/22 16:58	1
N-Propylbenzene	ND		0.50	ug/L			10/21/22 16:58	1
o-Chlorotoluene	ND		0.50	ug/L			10/21/22 16:58	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			10/21/22 16:58	1
o-Xylene	ND		0.50	ug/L			10/21/22 16:58	1
p-Chlorotoluene	ND		0.50	ug/L			10/21/22 16:58	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			10/21/22 16:58	1
p-Isopropyltoluene	ND		0.50	ug/L			10/21/22 16:58	1
sec-Butylbenzene	ND		0.50	ug/L			10/21/22 16:58	1
Styrene	ND	*1	0.50	ug/L			10/21/22 16:58	1
Tert-amyl methyl ether	ND		3.0	ug/L			10/21/22 16:58	1
Tert-butyl ethyl ether	ND		3.0	ug/L			10/21/22 16:58	1
tert-Butylbenzene	ND		0.50	ug/L			10/21/22 16:58	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			10/21/22 16:58	1
Toluene	ND		0.50	ug/L			10/21/22 16:58	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			10/21/22 16:58	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/21/22 16:58	1
Trichloroethylene (TCE)	ND		0.50	ug/L			10/21/22 16:58	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			10/21/22 16:58	1
Trichlorotrifluoroethane	ND		0.50	ug/L			10/21/22 16:58	1
Vinyl Chloride (VC)	ND		0.30	ug/L			10/21/22 16:58	1
Xylenes, Total	ND		0.50	ug/L			10/21/22 16:58	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	20	T J	ug/L		0.99			10/21/22 16:58	1
3-Octene, (E)-	0.92	T J N	ug/L		12.03	14919-01-8		10/21/22 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		70 - 130		10/21/22 16:58	1
4-Bromofluorobenzene (Surr)	92		70 - 130		10/21/22 16:58	1
Toluene-d8 (Surr)	86		70 - 130		10/21/22 16:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
2,4'-DDE	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
2,4'-DDT	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
2,4-Dinitrotoluene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
2,6-Dinitrotoluene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
4,4'-DDD	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
4,4'-DDE	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
4,4'-DDT	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1

Eurofins Eaton Monrovia

# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

**Date Collected: 10/17/22 11:04**

**Matrix: Water**

**Date Received: 10/18/22 09:40**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Acenaphthylene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Acetochlor	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Alachlor	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
alpha-BHC	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
alpha-Chlordane	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Anthracene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 23:51	1
Atrazine	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Benz(a)anthracene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Benzo[a]pyrene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 23:51	1
Benzo[b]fluoranthene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 23:51	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Benzo[k]fluoranthene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 23:51	1
beta-BHC	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		10/21/22 07:31	10/24/22 23:51	1
Bromacil	ND	^3+ *+	0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Butachlor	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Butylbenzylphthalate	ND		0.49	ug/L		10/21/22 07:31	10/24/22 23:51	1
Chlorobenzilate	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Chloroneb	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Chlorpyrifos	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Chrysene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 23:51	1
delta-BHC	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		10/21/22 07:31	10/24/22 23:51	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Diclorvos (DDVP)	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Dieldrin	ND		0.20	ug/L		10/21/22 07:31	10/24/22 23:51	1
Diethylphthalate	ND		0.49	ug/L		10/21/22 07:31	10/24/22 23:51	1
Dimethylphthalate	ND		0.49	ug/L		10/21/22 07:31	10/24/22 23:51	1
Di-n-butyl phthalate	ND		0.98	ug/L		10/21/22 07:31	10/24/22 23:51	1
Di-n-octyl phthalate	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Endosulfan I (Alpha)	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Endosulfan II (Beta)	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Endosulfan sulfate	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Endrin	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Endrin aldehyde	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
EPTC	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Fluoranthene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Fluorene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
gamma-BHC (Lindane)	ND		0.039	ug/L		10/21/22 07:31	10/24/22 23:51	1
gamma-Chlordane	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Heptachlor	ND		0.039	ug/L		10/21/22 07:31	10/24/22 23:51	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Hexachlorobenzene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Isophorone	ND		0.49	ug/L		10/21/22 07:31	10/24/22 23:51	1

Eurofins Eaton Monrovia

# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Malathion	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Methoxychlor	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Metolachlor	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Metribuzin	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Molinate	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Naphthalene	ND		0.29	ug/L		10/21/22 07:31	10/24/22 23:51	1
Parathion	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Phenanthrene	ND		0.039	ug/L		10/21/22 07:31	10/24/22 23:51	1
Propachlor	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Pyrene	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Simazine	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Terbacil	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Terbutylazine	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
Thiobencarb	ND		0.20	ug/L		10/21/22 07:31	10/24/22 23:51	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/21/22 07:31	10/24/22 23:51	1
trans-Nonachlor	ND		0.049	ug/L		10/21/22 07:31	10/24/22 23:51	1
Trifluralin	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
1-Methylnaphthalene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1
2-Methylnaphthalene	ND		0.098	ug/L		10/21/22 07:31	10/24/22 23:51	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Cyclotetrasiloxane, octamethyl-	0.65	T J N	ug/L		2.45	556-67-2	10/21/22 07:31	10/24/22 23:51	1
Decane	1.4	T J N	ug/L		2.61	124-18-5	10/21/22 07:31	10/24/22 23:51	1
Cyclopentasiloxane, decamethyl-	0.85	T J N	ug/L		2.91	541-02-6	10/21/22 07:31	10/24/22 23:51	1
n-Hexadecanoic acid	0.56	T J N	ug/L		6.11	57-10-3	10/21/22 07:31	10/24/22 23:51	1
1-Pentadecanethiol	0.63	T J N	ug/L		7.46	25276-70-4	10/21/22 07:31	10/24/22 23:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	97		70 - 130	10/21/22 07:31	10/24/22 23:51	1
Perylene-d12	87		70 - 130	10/21/22 07:31	10/24/22 23:51	1
Triphenylphosphate	115		70 - 130	10/21/22 07:31	10/24/22 23:51	1

**Method: EPA-DW2 504.1 - EDB, DBCP and 1,2,3-TCP (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.040	ug/L		10/20/22 13:23	10/21/22 05:34	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		10/20/22 13:23	10/21/22 05:34	1
1,2-D bromoethane	ND		0.010	ug/L		10/20/22 13:23	10/21/22 05:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	111		60 - 140	10/20/22 13:23	10/21/22 05:34	1

**Method: EPA 505 - Organochlorine Pesticides/PCBs (GC)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alachlor	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
Aldrin	ND		0.0020	ug/L		10/20/22 13:52	10/20/22 19:33	1
Chlordane (n.o.s.)	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
<b>Dieldrin</b>	<b>0.0054</b>		0.0020	ug/L		10/20/22 13:52	10/20/22 19:33	1
Endrin	ND		0.010	ug/L		10/20/22 13:52	10/20/22 19:33	1

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

## Method: EPA 505 - Organochlorine Pesticides/PCBs (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
gamma-BHC (Lindane)	ND		0.010	ug/L		10/20/22 13:52	10/20/22 19:33	1
Heptachlor	ND		0.010	ug/L		10/20/22 13:52	10/20/22 19:33	1
Heptachlor epoxide	ND		0.010	ug/L		10/20/22 13:52	10/20/22 19:33	1
Methoxychlor	ND		0.050	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1016	ND		0.070	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1221	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1232	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1242	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1248	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1254	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
PCB-1260	ND		0.070	ug/L		10/20/22 13:52	10/20/22 19:33	1
Polychlorinated biphenyls, Total	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1
Toxaphene	ND		0.10	ug/L		10/20/22 13:52	10/20/22 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		70 - 130	10/20/22 13:52	10/20/22 19:33	1

## Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	110		5.0	ug/L			10/24/22 23:54	1
Chloride	71		1.0	mg/L			10/18/22 16:52	2
Nitrate as N	0.49		0.10	mg/L			10/18/22 16:52	2
Nitrate Nitrite as N	0.49		0.10	mg/L			10/18/22 16:52	2
Sulfate	9.7		0.50	mg/L			10/18/22 16:52	2
Nitrite as N	ND		0.10	mg/L			10/18/22 16:52	2

## Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19		1.0	mg/L			10/24/22 14:11	1
Magnesium	15		0.10	mg/L			10/24/22 14:11	1
Potassium	1.8		1.0	mg/L			10/24/22 14:11	1
Sodium	29		1.0	mg/L			10/24/22 14:11	1

## Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Arsenic	ND		1.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Beryllium	ND		1.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Cadmium	ND	^2	0.50	ug/L		10/20/22 14:15	10/21/22 15:03	1
Chromium	1.7		1.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Copper	2.0		2.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Lead	ND		0.50	ug/L		10/20/22 14:15	10/21/22 15:03	1
Nickel	ND		5.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Selenium	ND		5.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Silver	ND	^2	0.50	ug/L		10/20/22 14:15	10/21/22 15:03	1
Thallium	ND		1.0	ug/L		10/20/22 14:15	10/21/22 15:03	1
Zinc	ND		20	ug/L		10/20/22 14:15	10/21/22 15:03	1

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

**Method: EPA 245.1 - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.10	ug/L		11/07/22 10:10	11/07/22 16:00	1

**General Chemistry**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B)	55	*-	2.0	mg/L			10/26/22 01:56	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	55	B	2.0	mg/L			10/26/22 01:56	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		2.0	mg/L			10/26/22 01:56	1
Specific Conductance (SM 2510B)	370		2.0	umhos/cm			10/26/22 01:56	1
Total Dissolved Solids (SM 2540C)	250		20	mg/L			10/18/22 16:10	1
Fluoride (SM 4500 F C)	ND		0.050	mg/L			10/25/22 22:53	1
pH (SM 4500 H+ B)	7.8	HF		SU			10/26/22 01:56	1
Sulfide (SM 4500 S2 D)	ND		0.050	mg/L			10/18/22 20:31	1

**Method: 625 Acid/Base/PAH + 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		10/20/22 00:00	11/14/22 15:54	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,4,5-Trichlorophenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,4,6-Trichlorophenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,4-Dichlorophenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,4-Dinitrophenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,6-Dichlorophenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,6-Di-tert-butyl-4-methylphenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2,6-Di-tert-butylphenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Chloronaphthalene	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Chlorophenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Methyl-4,6-dinitrophenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Methylphenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Nitroaniline	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
2-Nitrophenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
3+4-Methylphenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
3-Nitroaniline	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
4-Bromophenylphenyl ether	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
4-Chloro-3-methylphenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
4-Chloroaniline	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
4-Chlorophenylphenyl ether	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
4-Nitroaniline	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
4-Nitrophenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
6-tert-butyl-2,4-dimethylphenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Acenaphthene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Acenaphthylene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Aniline	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Anthracene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1

Eurofins Eaton Monrovia

# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzidine	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzoic Acid	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
Benzyl Alcohol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
Biphenyl	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Bis(2-Chloroethoxy) methane	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Bis(2-Chloroethyl) ether	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Bis(2-Chloroisopropyl) ether	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Chrysene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Dibenzofuran	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Dibenzothiophene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Fluoranthene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Fluorene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Hexachloroethane	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Naphthalene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Nitrobenzene	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
N-Nitrosodi-n-propylamine	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
N-Nitrosodiphenylamine	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Pentachlorophenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Perylene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Phenanthrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1
Phenol	ND		0.2	0.1	µg/L		10/20/22 00:00	11/14/22 15:54	1
p-tert-Butylphenol	ND		0.1	0.05	µg/L		10/20/22 00:00	11/14/22 15:54	1
Pyrene	ND		0.005	0.001	µg/L		10/20/22 00:00	11/14/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(2,4,6-Tribromophenol)	95		31 - 143	10/20/22 00:00	11/14/22 15:54	1
(d10-Acenaphthene)	78		45 - 118	10/20/22 00:00	11/14/22 15:54	1
(d10-Phenanthrene)	94		56 - 123	10/20/22 00:00	11/14/22 15:54	1
(d12-Chrysene)	106		36 - 142	10/20/22 00:00	11/14/22 15:54	1
(d12-Perylene)	97		36 - 161	10/20/22 00:00	11/14/22 15:54	1
(d5-Phenol)	33		0 - 85	10/20/22 00:00	11/14/22 15:54	1
(d8-Naphthalene)	69		20 - 112	10/20/22 00:00	11/14/22 15:54	1

**Method: 8015 Ethanol - SW846 8015B Gasoline Range Organics**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ETHANOL	ND	U	2000		ug/L			10/21/22 14:13	1

**Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			10/21/22 15:54	1

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	97		60 - 140		10/21/22 15:54	1

**Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.030		mg/L			10/25/22 01:08	1
JP5	ND	U	0.059		mg/L			10/25/22 01:08	1
JP8	ND	U	0.059		mg/L			10/25/22 01:08	1
MOTOR OIL	ND	U	0.059		mg/L			10/25/22 01:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	96		60 - 130		10/25/22 01:08	1
HEXACOSANE	100		60 - 130		10/25/22 01:08	1

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

**Lab Sample ID: 380-24805-2**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

**Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			10/27/22 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130		10/27/22 16:43	1
4-Bromofluorobenzene (Surr)	102		70 - 130		10/27/22 16:43	1
1,2-Dichloroethane-d4 (Surr)	118		70 - 130		10/27/22 16:43	1

**Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	ug/L			10/20/22 01:31	1
1,1,1-Trichloroethane	ND		0.50	ug/L			10/20/22 01:31	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			10/20/22 01:31	1
1,1,2-Trichloroethane	ND		0.50	ug/L			10/20/22 01:31	1
1,1-Dichloroethane	ND	*+	0.50	ug/L			10/20/22 01:31	1
1,1-Dichlorethylene	ND	*+	0.50	ug/L			10/20/22 01:31	1
1,1-Dichloropropene	ND		0.50	ug/L			10/20/22 01:31	1
1,2,3-Trichlorobenzene	ND	B	0.50	ug/L			10/20/22 01:31	1
1,2,3-Trichloropropane	ND		0.50	ug/L			10/20/22 01:31	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			10/20/22 01:31	1
1,2,4-Trimethy benzene	ND	*+ ^+	0.50	ug/L			10/20/22 01:31	1
1,2-Dichloroethane	ND		0.50	ug/L			10/20/22 01:31	1
1,2-Dichloropropane	ND		0.50	ug/L			10/20/22 01:31	1
1,3,5-Trimethy benzene	ND	*+	0.50	ug/L			10/20/22 01:31	1
1,3-Dichloropropane	ND		0.50	ug/L			10/20/22 01:31	1
2,2-Dichloropropane	ND		0.50	ug/L			10/20/22 01:31	1
2-Butanone (MEK)	ND		5.0	ug/L			10/20/22 01:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			10/20/22 01:31	1
Acetone	ND		500	ug/L			10/20/22 01:31	1
Benzene	ND		0.50	ug/L			10/20/22 01:31	1
Bromobenzene	ND	*+	0.50	ug/L			10/20/22 01:31	1
Bromochloromethane	ND		0.50	ug/L			10/20/22 01:31	1

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-2**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

**Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	ND		0.50	ug/L			10/20/22 01:31	1
Bromoform	ND		0.50	ug/L			10/20/22 01:31	1
Bromomethane (Methyl Bromide)	ND	*+	0.50	ug/L			10/20/22 01:31	1
Carbon disulfide	ND	*+ ^+	0.50	ug/L			10/20/22 01:31	1
Carbon tetrachloride	ND		0.50	ug/L			10/20/22 01:31	1
Chlorobenzene	ND		0.50	ug/L			10/20/22 01:31	1
Chlorodibromomethane	ND		0.50	ug/L			10/20/22 01:31	1
Chloroethane	ND	*+ ^+	0.50	ug/L			10/20/22 01:31	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			10/20/22 01:31	1
Dichloromethane	ND	*+	0.50	ug/L			10/20/22 01:31	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			10/20/22 01:31	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			10/20/22 01:31	1
Dibromomethane	ND		0.50	ug/L			10/20/22 01:31	1
Dichlorodifluoromethane	ND	*+ *1	0.50	ug/L			10/20/22 01:31	1
Ethylbenzene	ND	*+	0.50	ug/L			10/20/22 01:31	1
Hexachlorobutadiene	ND	*+	0.50	ug/L			10/20/22 01:31	1
Isopropyl benzene	ND		0.50	ug/L			10/20/22 01:31	1
m,p-Xylenes	ND	*+ ^+	0.50	ug/L			10/20/22 01:31	1
m-Dichlorobenzene (1,3-DCB)	ND	*+	0.50	ug/L			10/20/22 01:31	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			10/20/22 01:31	1
Naphthalene	ND	B	0.50	ug/L			10/20/22 01:31	1
n-Butylbenzene	ND		0.50	ug/L			10/20/22 01:31	1
N-Propylbenzene	ND	*+	0.50	ug/L			10/20/22 01:31	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			10/20/22 01:31	1
o-Chlorotoluene	ND	*+	0.50	ug/L			10/20/22 01:31	1
o-Xylene	ND	*+	0.50	ug/L			10/20/22 01:31	1
p-Chlorotoluene	ND	*+	0.50	ug/L			10/20/22 01:31	1
p-Dichlorobenzene (1,4-DCB)	ND	*+	0.50	ug/L			10/20/22 01:31	1
p-Isopropyltoluene	ND	*+	0.50	ug/L			10/20/22 01:31	1
sec-Butylbenzene	ND	*+	0.50	ug/L			10/20/22 01:31	1
Styrene	ND	*+ ^+	0.50	ug/L			10/20/22 01:31	1
Tert-amyl methyl ether	ND		3.0	ug/L			10/20/22 01:31	1
Tert-butyl ethyl ether	ND		3.0	ug/L			10/20/22 01:31	1
tert-Butylbenzene	ND	*+	0.50	ug/L			10/20/22 01:31	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			10/20/22 01:31	1
Toluene	ND	*+	0.50	ug/L			10/20/22 01:31	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			10/20/22 01:31	1
Xylenes, Total	ND	*+	0.50	ug/L			10/20/22 01:31	1
trans-1,2-Dichloroethylene	ND	*+	0.50	ug/L			10/20/22 01:31	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/20/22 01:31	1
Trichloroethylene (TCE)	ND	*+	0.50	ug/L			10/20/22 01:31	1
Trichlorofluoromethane (Freon 11)	ND	*+ *1	0.50	ug/L			10/20/22 01:31	1
Vinyl Chloride (VC)	ND	*1	0.30	ug/L			10/20/22 01:31	1
Trichlorotrifluoroethane	ND	*+	0.50	ug/L			10/20/22 01:31	1
Bromoethane	ND	*+	0.50	ug/L			10/20/22 01:31	1
Chloromethane (methyl chloride)	ND	*+	0.50	ug/L			10/20/22 01:31	1
Diisopropyl ether	ND	*+	3.0	ug/L			10/20/22 01:31	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	9.8	T J	ug/L		0.99			10/20/22 01:31	1

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# Client Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-2**

Date Collected: 10/17/22 11:04

Matrix: Water

Date Received: 10/18/22 09:40

## Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Acetaldehyde	2.5	T J N	ug/L		1.43	75-07-0		10/20/22 01:31	1
3-Furaldehyde	7.3	T J N	ug/L		9.77	498-60-2		10/20/22 01:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130					10/20/22 01:31	1
4-Bromofluorobenzene (Surr)	112		70 - 130					10/20/22 01:31	1
Toluene-d8 (Surr)	85		70 - 130					10/20/22 01:31	1

## Method: EPA-DW2 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.041	ug/L		10/27/22 12:27	10/27/22 23:09	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		10/27/22 12:27	10/27/22 23:09	1
1,2-D bromoethane	ND		0.010	ug/L		10/27/22 12:27	10/27/22 23:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	113		60 - 140			10/27/22 12:27	10/27/22 23:09	1

## Method: EPA 505 - Organochlorine Pesticides/PCBs (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alachlor	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
Aldrin	ND		0.0021	ug/L		10/20/22 13:52	10/20/22 20:42	1
Chlordane (n.o.s.)	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
Dieldrin	ND		0.0021	ug/L		10/20/22 13:52	10/20/22 20:42	1
Endrin	ND		0.010	ug/L		10/20/22 13:52	10/20/22 20:42	1
gamma-BHC (Lindane)	ND		0.010	ug/L		10/20/22 13:52	10/20/22 20:42	1
Heptachlor	ND		0.010	ug/L		10/20/22 13:52	10/20/22 20:42	1
Heptachlor epoxide	ND		0.010	ug/L		10/20/22 13:52	10/20/22 20:42	1
Methoxychlor	ND		0.052	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1016	ND		0.072	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1221	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1232	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1242	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1248	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1254	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
PCB-1260	ND		0.072	ug/L		10/20/22 13:52	10/20/22 20:42	1
Polychlorinated biphenyls, Total	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
Toxaphene	ND		0.10	ug/L		10/20/22 13:52	10/20/22 20:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	81		70 - 130			10/20/22 13:52	10/20/22 20:42	1

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			10/21/22 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	92		60 - 140					10/21/22 17:46	1

Eurofins Eaton Monrovia

# Action Limit Summary

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	Limit	EPAMCL S Limit	HI Org Limit	EPAMCL Limit	Method	Prep Type
1,1,1-Trichloroethane	ND		ug/L			200.0	200	524.2	Total/NA
1,1,2-Trichloroethane	ND		ug/L			5.000	5	524.2	Total/NA
1,1-Dichloroethylene	ND		ug/L			7.000	7	524.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L			0.6000		524.2	Total/NA
1,2,4-Trichlorobenzene	ND		ug/L			70.00	70	524.2	Total/NA
1,2-Dichloroethane	ND		ug/L			5.000	5	524.2	Total/NA
1,2-Dichloropropane	ND		ug/L			5.000	5	524.2	Total/NA
Benzene	ND		ug/L			5.000	5	524.2	Total/NA
Carbon tetrachloride	ND		ug/L			5.000	5	524.2	Total/NA
Chlorobenzene	ND		ug/L			100.0	100	524.2	Total/NA
cis-1,2-Dichloroethylene	ND		ug/L			70.00	70	524.2	Total/NA
Dichloromethane	ND		ug/L			5.000	5	524.2	Total/NA
Ethylbenzene	ND		ug/L			700.0	700	524.2	Total/NA
o-Dichlorobenzene (1,2-DCB)	ND		ug/L			600.0	600	524.2	Total/NA
p-Dichlorobenzene (1,4-DCB)	ND		ug/L			75.000	75	524.2	Total/NA
Styrene	ND	*1	ug/L			100.0	100	524.2	Total/NA
Tetrachloroethene (PCE)	ND		ug/L			5.000	5	524.2	Total/NA
Toluene	ND		ug/L			1000	1000	524.2	Total/NA
trans-1,2-Dichloroethylene	ND		ug/L			100.0	100	524.2	Total/NA
Trichloroethylene (TCE)	ND		ug/L			5.000	5	524.2	Total/NA
Vinyl Chloride (VC)	ND		ug/L			2.000	2	524.2	Total/NA
Xylenes, Total	ND		ug/L			10000	10000	524.2	Total/NA
Alachlor	ND		ug/L	2				525.2	Total/NA
Atrazine	ND		ug/L	3				525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2				525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6				525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400				525.2	Total/NA
Endrin	ND		ug/L	2				525.2	Total/NA
gamma-BHC (Lindane)	ND		ug/L	0.2				525.2	Total/NA
Heptachlor	ND		ug/L	0.4				525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2				525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1				525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50				525.2	Total/NA
Methoxychlor	ND		ug/L	40				525.2	Total/NA
Simazine	ND		ug/L	4				525.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L			0.6000		504.1	Total/NA
1,2-D bromo-3-Chloropropa ne	ND		ug/L	0.2				504.1	Total/NA
1,2-D bromoethane	ND		ug/L	0.05				504.1	Total/NA
Alachlor	ND		ug/L	2				505	Total/NA
Endrin	ND		ug/L	2				505	Total/NA
gamma-BHC (Lindane)	ND		ug/L	0.2				505	Total/NA
Heptachlor	ND		ug/L	0.4				505	Total/NA
Heptachlor epoxide	ND		ug/L	0.2				505	Total/NA

Eurofins Eaton Monrovia



# Action Limit Summary

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	Limit	EPAMCL S Limit	HI Org Limit	EPAMCL Limit	Method	Prep Type
Methoxychlor	ND		ug/L	40				505	Total/NA
Polychlorinated biphenyls, Total	ND		ug/L	0.5				505	Total/NA
Toxaphene	ND		ug/L	3				505	Total/NA
Chloride	71		mg/L		250			300.0	Total/NA
Nitrate as N	0.49		mg/L	10				300.0	Total/NA
Nitrate Nitrite as N	0.49		mg/L	10				300.0	Total/NA
Sulfate	9.7		mg/L		250			300.0	Total/NA
Nitrite as N	ND		mg/L	1				300.0	Total/NA
Mercury	ND		ug/L	2				245.1	Total/NA
Total Dissolved Solids	250		mg/L		500			SM 2540C	Total/NA
Fluoride	ND		mg/L	4	2			SM 4500 F C	Total/NA

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

**Lab Sample ID: 380-24805-2**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	Limit	HI Org Limit	EPAMCL Limit	RL	Method	Prep Type
1,1,1-Trichloroethane	ND		ug/L	200.0	200		0.50	524.2	Total/NA
1,1,2-Trichloroethane	ND		ug/L	5.000	5		0.50	524.2	Total/NA
1,1-Dichloroethylene	ND	*+	ug/L	7.000	7		0.50	524.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L	0.6000			0.50	524.2	Total/NA
1,2,4-Trichlorobenzene	ND		ug/L	70.00	70		0.50	524.2	Total/NA
1,2-Dichloroethane	ND		ug/L	5.000	5		0.50	524.2	Total/NA
1,2-Dichloropropane	ND		ug/L	5.000	5		0.50	524.2	Total/NA
Benzene	ND		ug/L	5.000	5		0.50	524.2	Total/NA
Carbon tetrachloride	ND		ug/L	5.000	5		0.50	524.2	Total/NA
Chlorobenzene	ND		ug/L	100.0	100		0.50	524.2	Total/NA
Dichloromethane	ND	*+	ug/L	5.000	5		0.50	524.2	Total/NA
cis-1,2-Dichloroethylene	ND		ug/L	70.00	70		0.50	524.2	Total/NA
Ethylbenzene	ND	*+	ug/L	700.0	700		0.50	524.2	Total/NA
o-Dichlorobenzene (1,2-DCB)	ND		ug/L	600.0	600		0.50	524.2	Total/NA
p-Dichlorobenzene (1,4-DCB)	ND	*+	ug/L	75.000	75		0.50	524.2	Total/NA
Styrene	ND	*+ ^+	ug/L	100.0	100		0.50	524.2	Total/NA
Tetrachloroethene (PCE)	ND		ug/L	5.000	5		0.50	524.2	Total/NA
Toluene	ND	*+	ug/L	1000	1000		0.50	524.2	Total/NA
Xylenes, Total	ND	*+	ug/L	10000	10000		0.50	524.2	Total/NA
trans-1,2-Dichloroethylene	ND	*+	ug/L	100.0	100		0.50	524.2	Total/NA
Trichloroethylene (TCE)	ND	*+	ug/L	5.000	5		0.50	524.2	Total/NA
Vinyl Chloride (VC)	ND	*1	ug/L	2.000	2		0.30	524.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L	0.6000			0.041	504.1	Total/NA
1,2-D bromo-3-Chloropropane	ND		ug/L				0.010	504.1	Total/NA
1,2-D bromoethane	ND		ug/L				0.010	504.1	Total/NA
Alachlor	ND		ug/L				0.10	505	Total/NA

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# Action Limit Summary

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

Job ID: 380-24805-1

**Client Sample ID: TB: AIEA GULCH WELLS PUMP 2  
 (Continued)**

**Lab Sample ID: 380-24805-2**

## Compliance Check

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

Analyte	Result	Qualifier	Unit	HI Org Limit	EPAMCL Limit	RL	Method	Prep Type
Endrin	ND		ug/L			0.010	505	Total/NA
gamma-BHC (Lindane)	ND		ug/L			0.010	505	Total/NA
Heptachlor	ND		ug/L			0.010	505	Total/NA
Heptachlor epoxide	ND		ug/L			0.010	505	Total/NA
Methoxychlor	ND		ug/L			0.052	505	Total/NA
Polychlorinated biphenyls, Total	ND		ug/L			0.10	505	Total/NA
Toxaphene	ND		ug/L			0.10	505	Total/NA



# Surrogate Summary

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DCA (70-130)
380-24805-1	AIEA GULCH WELLS PUMP 2 (	99	92	117
380-24805-2	TB: AIEA GULCH WELLS PUMF 2	97	102	118
LCS 380-21441/2	Lab Control Sample	101	93	111
LCS 380-22279/2	Lab Control Sample	98	94	114
LCSD 380-21441/3	Lab Control Sample Dup	101	94	114
LCSD 380-22279/3	Lab Control Sample Dup	98	97	116
MB 380-21441/5	Method Blank	98	92	113
MB 380-22279/5	Method Blank	97	94	120

**Surrogate Legend**  
 TOL = Toluene-d8 (Surr)  
 BFB = 4-Bromofluorobenzene (Surr)  
 DCA = 1,2-Dichloroethane-d4 (Surr)

## Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (50-150)	BFB (50-150)	DCA (50-150)
MRL 380-21441/4	Lab Control Sample	101	93	115
MRL 380-22279/4	Lab Control Sample	98	98	118

**Surrogate Legend**  
 TOL = Toluene-d8 (Surr)  
 BFB = 4-Bromofluorobenzene (Surr)  
 DCA = 1,2-Dichloroethane-d4 (Surr)

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DCA (70-130)	BFB (70-130)	TOL (70-130)
380-24805-1	AIEA GULCH WELLS PUMP 2 (	115	92	86
380-24805-2	TB: AIEA GULCH WELLS PUMF 2	109	112	85
LCS 380-21167/4	Lab Control Sample	98	110	104
LCS 380-21256/3	Lab Control Sample	97	111	110
LCS 380-21526/11	Lab Control Sample	98	99	105
LCSD 380-21167/5	Lab Control Sample Dup	94	105	104
LCSD 380-21256/4	Lab Control Sample Dup	96	109	117
LCSD 380-21526/12	Lab Control Sample Dup	98	104	106
MB 380-21167/8	Method Blank	94	93	78
MB 380-21256/5	Method Blank	85	102	80
MB 380-21526/15	Method Blank	109	96	88
MRL 380-21167/3	Lab Control Sample	106	100	90
MRL 380-21167/7	Lab Control Sample	102	104	89
MRL 380-21526/10	Lab Control Sample	99	94	91
MRL 380-21526/14	Lab Control Sample	108	100	96

# Surrogate Summary

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

Job ID: 380-24805-1

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)  
BFB = 4-Bromofluorobenzene (Surr)  
TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	2NMX (70-130)	PRY (70-130)	TPP (70-130)
380-24799-E-1-A DU	Duplicate	95	94	118
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	97	87	115
380-24730-AK-1-A MS	Matrix Spike	98	94	109
LCS 380-21477/3-A	Lab Control Sample	97	92	112
LCS 380-21477/4-A	Lab Control Sample Dup	98	94	112
MB 380-21477/1-A	Method Blank	96	93	109
MRL 380-21477/2-A	Lab Control Sample	97	95	109

### Surrogate Legend

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

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBPP2 (60-140)
380-23978-F-1-A MS	Matrix Spike	111
380-23978-M-2-A DU	Duplicate	115
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	111
LCS 380-21364/3-A	Lab Control Sample	113
MBL 380-21364/4-A	Method Blank	99
MRL 380-21364/1-A	Lab Control Sample	114
MRL 380-21364/2-A	Lab Control Sample	111

### Surrogate Legend

DBPP = 1,2-D bromopropane (Surr)

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBPP1 (60-140)
380-24805-2	TB: AIEA GULCH WELLS PUMF	113
380-24862-K-1-A MS	Matrix Spike	105
380-25483-K-1-A DU	Duplicate	113
LCS 380-22241/11-A	Lab Control Sample	106
MBL 380-22241/12-A	Method Blank	121
MRL 380-22241/10-A	Lab Control Sample	113
MRL 380-22241/9-A	Lab Control Sample	104

### Surrogate Legend

DBPP = 1,2-D bromopropane (Surr)

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# Surrogate Summary

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

Job ID: 380-24805-1

## Method: 505 - Organochlorine Pesticides/PCBs (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCX1 (70-130)	
380-24762-B-1-A MS	Matrix Spike	90	
380-24762-C-1-A MS	Matrix Spike	90	
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	75	
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	89	
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	83	
380-24805-2	TB: AIEA GULCH WELLS PUMF 2	81	
MB 380-21407/7-A	Method Blank	79	
MRL 380-21407/2-A	Lab Control Sample	83	
MRL 380-21407/3-A	Lab Control Sample	88	
MRL 380-21407/4-A	Lab Control Sample	94	
MRL 380-21407/5-A	Lab Control Sample	87	
MRL 380-21407/6-A	Lab Control Sample	91	

**Surrogate Legend**  
TCX = Tetrachloro-m-xylene

## Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PHL (0-130)	PRY (36-161)	TBP (30-130)
100921-B1	Method Blank	92	92	82	91	115	84	73
100921-BS1	Lab Control Sample	85	91	91	78	78	92	79
100921-BS2	Lab Control Sample Dup	71	93	93	68	60	97	77

**Surrogate Legend**  
(d10-Acenaphthene) = (d10-Acenaphthene)  
(d10-Phenanthrene) = (d10-Phenanthrene)  
CRY = (d12-Chrysene)  
NPT = (d8-Naphthalene)  
PHL = (d5-Phenol)  
PRY = (d12-Perylene)  
TBP = (2,4,6-Tribromophenol)

## Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	Acenaphtl (45-118)	Phenanth (56-123)	CRY (36-142)	NPT (20-112)	PHL (0-85)	PRY (36-161)	TBP (31-143)
380-24805-1	AIEA GULCH WELLS PUMP 2 (	78	94	106	69	33	97	95

**Surrogate Legend**  
(d10-Acenaphthene) = (d10-Acenaphthene)  
(d10-Phenanthrene) = (d10-Phenanthrene)  
CRY = (d12-Chrysene)  
NPT = (d8-Naphthalene)  
PHL = (d5-Phenol)

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# Surrogate Summary

Client: City & County of Honolulu  
Project/Site: RED-HILL  
PRY = (d12-Perylene)  
TBP = (2,4,6-Tribromophenol)

Job ID: 380-24805-1

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-24805-1	AIEA GULCH WELLS PUMP 2 (	97
380-24805-2	TB: AIEA GULCH WELLS PUMF 2	92

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
22J272-01M	Matrix Spike	115
22J272-01S	Matrix Spike Duplicate	117

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB
22VGH7J11B	Method Blank	

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
22VGH7J11C	LCD	105
22VGH7J11L	Lab Control Sample	110

#### Surrogate Legend

BFB = BROMOFLUOROBENZENE

## Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB	XACOSAI
22DSJ049WB	Method Blank		

#### Surrogate Legend

BB = BROMOBENZENE

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# Surrogate Summary

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

Job ID: 380-24805-1

HEXACOSANE = HEXACOSANE

## Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	HEXACOSANE (60-130)
22DSJ049WL	Lab Control Sample	103	99
22J5J049WL	Lab Control Sample	102	94
22J8J049WL	Lab Control Sample	99	101

#### Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

## Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	HEXACOSANE (60-130)
380-24805-1	AIEA GULCH WELLS PUMP 2 (	96	100

#### Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 380-21167/8**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	ug/L			10/19/22 12:43	1
1,1,1-Trichloroethane	ND		0.50	ug/L			10/19/22 12:43	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			10/19/22 12:43	1
1,1,2-Trichloroethane	ND		0.50	ug/L			10/19/22 12:43	1
1,1-Dichloroethane	ND		0.50	ug/L			10/19/22 12:43	1
1,1-Dichlorethylene	ND		0.50	ug/L			10/19/22 12:43	1
1,1-Dichloropropene	ND		0.50	ug/L			10/19/22 12:43	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			10/19/22 12:43	1
1,2,3-Trichloropropane	ND		0.50	ug/L			10/19/22 12:43	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			10/19/22 12:43	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			10/19/22 12:43	1
1,2-Dichloroethane	ND		0.50	ug/L			10/19/22 12:43	1
1,2-Dichloropropane	ND		0.50	ug/L			10/19/22 12:43	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			10/19/22 12:43	1
1,3-Dichloropropane	ND		0.50	ug/L			10/19/22 12:43	1
2,2-Dichloropropane	ND		0.50	ug/L			10/19/22 12:43	1
2-Butanone (MEK)	ND		5.0	ug/L			10/19/22 12:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			10/19/22 12:43	1
Acetone	ND		500	ug/L			10/19/22 12:43	1
Benzene	ND		0.50	ug/L			10/19/22 12:43	1
Bromobenzene	ND		0.50	ug/L			10/19/22 12:43	1
Bromochloromethane	ND		0.50	ug/L			10/19/22 12:43	1
Bromodichloromethane	ND		0.50	ug/L			10/19/22 12:43	1
Bromoform	ND		0.50	ug/L			10/19/22 12:43	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			10/19/22 12:43	1
Carbon disulfide	ND		0.50	ug/L			10/19/22 12:43	1
Carbon tetrachloride	ND		0.50	ug/L			10/19/22 12:43	1
Chlorobenzene	ND		0.50	ug/L			10/19/22 12:43	1
Chlorodibromomethane	ND		0.50	ug/L			10/19/22 12:43	1
Chloroethane	ND		0.50	ug/L			10/19/22 12:43	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			10/19/22 12:43	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			10/19/22 12:43	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			10/19/22 12:43	1
Dibromomethane	ND		0.50	ug/L			10/19/22 12:43	1
Dichlorodifluoromethane	ND		0.50	ug/L			10/19/22 12:43	1
Dichloromethane	ND		0.50	ug/L			10/19/22 12:43	1
Ethylbenzene	ND		0.50	ug/L			10/19/22 12:43	1
Hexachlorobutadiene	ND		0.50	ug/L			10/19/22 12:43	1
Isopropy benzene	ND		0.50	ug/L			10/19/22 12:43	1
m,p-Xylenes	ND		0.50	ug/L			10/19/22 12:43	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			10/19/22 12:43	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			10/19/22 12:43	1
Naphthalene	ND		0.50	ug/L			10/19/22 12:43	1
n-Butylbenzene	ND		0.50	ug/L			10/19/22 12:43	1
N-Propylbenzene	ND		0.50	ug/L			10/19/22 12:43	1
o-Chlorotoluene	ND		0.50	ug/L			10/19/22 12:43	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			10/19/22 12:43	1
o-Xylene	ND		0.50	ug/L			10/19/22 12:43	1

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 380-21167/8**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
p-Chlorotoluene	ND		0.50	ug/L			10/19/22 12:43	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			10/19/22 12:43	1
p-Isopropyltoluene	ND		0.50	ug/L			10/19/22 12:43	1
sec-Butylbenzene	ND		0.50	ug/L			10/19/22 12:43	1
Styrene	ND		0.50	ug/L			10/19/22 12:43	1
Tert-amyl methyl ether	ND		3.0	ug/L			10/19/22 12:43	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			10/19/22 12:43	1
Tert-butyl ethyl ether	ND		3.0	ug/L			10/19/22 12:43	1
tert-Butylbenzene	ND		0.50	ug/L			10/19/22 12:43	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			10/19/22 12:43	1
Toluene	ND		0.50	ug/L			10/19/22 12:43	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			10/19/22 12:43	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/19/22 12:43	1
Trichloroethylene (TCE)	ND		0.50	ug/L			10/19/22 12:43	1
Bromoethane	ND		0.50	ug/L			10/19/22 12:43	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			10/19/22 12:43	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			10/19/22 12:43	1
Trichlorotrifluoroethane	ND		0.50	ug/L			10/19/22 12:43	1
Diisopropyl ether	ND		3.0	ug/L			10/19/22 12:43	1
Vinyl Chloride (VC)	ND		0.30	ug/L			10/19/22 12:43	1
Xylenes, Total	ND		0.50	ug/L			10/19/22 12:43	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					10/19/22 12:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 130		10/19/22 12:43	1
4-Bromofluorobenzene (Surr)	93		70 - 130		10/19/22 12:43	1
Toluene-d8 (Surr)	78		70 - 130		10/19/22 12:43	1

**Lab Sample ID: LCS 380-21167/4**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	5.00	4.97		ug/L		99	70 - 130
1,1,1-Trichloroethane	5.00	4.82		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	5.00	5.14		ug/L		103	70 - 130
1,1,2-Trichloroethane	5.00	4.90		ug/L		98	70 - 130
1,1-Dichloroethane	5.00	5.05		ug/L		101	70 - 130
1,1-Dichlorethylene	5.00	5.05		ug/L		101	70 - 130
1,1-Dichloropropene	5.00	4.93		ug/L		99	70 - 130
1,2,3-Trichlorobenzene	5.00	4.29		ug/L		86	70 - 130
1,2,3-Trichloropropane	5.00	5.09		ug/L		102	70 - 130
1,2,4-Trichlorobenzene	5.00	4.26		ug/L		85	70 - 130
1,2,4-Trimethy benzene	5.00	6.05		ug/L		121	70 - 130
1,2-Dichloroethane	5.00	4.97		ug/L		99	70 - 130
1,2-Dichloropropane	5.00	5.03		ug/L		101	70 - 130

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 380-21167/4

Matrix: Water

Analysis Batch: 21167

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3,5-Trimethy benzene	5.00	5.77		ug/L		115	70 - 130
1,3-Dichloropropane	5.00	4.88		ug/L		98	70 - 130
2,2-Dichloropropane	5.00	5.72		ug/L		114	70 - 130
2-Butanone (MEK)	50.0	51.7		ug/L		103	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	50.3		ug/L		101	70 - 130
Acetone	50.0	51.8	J	ug/L		104	70 - 130
Benzene	5.00	5.13		ug/L		103	70 - 130
Bromobenzene	5.00	5.39		ug/L		108	70 - 130
Bromochloromethane	5.00	4.94		ug/L		99	70 - 130
Bromodichloromethane	5.00	4.94		ug/L		99	70 - 130
Bromoform	5.00	4.95		ug/L		99	70 - 130
Bromomethane (Methyl Bromide)	5.00	5.14		ug/L		103	70 - 130
Carbon disulfide	5.00	5.77		ug/L		115	70 - 130
Carbon tetrachloride	5.00	5.00		ug/L		100	70 - 130
Chlorobenzene	5.00	4.90		ug/L		98	70 - 130
Chlorodibromomethane	5.00	5.04		ug/L		101	70 - 130
cis-1,3-Dichloropropene	5.00	4.48		ug/L		90	70 - 130
Dichloromethane	5.00	5.01		ug/L		100	70 - 130
Ethylbenzene	5.00	5.04		ug/L		101	70 - 130
Hexachlorobutadiene	5.00	5.17		ug/L		103	70 - 130
Isopropyl benzene	5.00	5.41		ug/L		108	70 - 130
m,p-Xylenes	10.0	11.0		ug/L		110	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	5.59		ug/L		112	70 - 130
Methyl-tert-butyl Ether (MTBE)	5.00	4.29		ug/L		86	70 - 130
Naphthalene	5.00	3.78		ug/L		76	70 - 130
n-Butylbenzene	5.00	4.92		ug/L		98	70 - 130
N-Propylbenzene	5.00	5.20		ug/L		104	70 - 130
o-Chlorotoluene	5.00	5.69		ug/L		114	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	4.97		ug/L		99	70 - 130
o-Xylene	5.00	5.15		ug/L		103	70 - 130
p-Chlorotoluene	5.00	5.59		ug/L		112	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	5.87		ug/L		117	70 - 130
p-Isopropyltoluene	5.00	5.83		ug/L		117	70 - 130
sec-Butylbenzene	5.00	5.78		ug/L		116	70 - 130
Styrene	5.00	5.38		ug/L		108	70 - 130
Tert-amyl methyl ether	5.00	4.53		ug/L		91	70 - 130
1,3-Dichloropropene, Total	10.0	8.78		ug/L		88	70 - 130
Tert-butyl ethyl ether	5.00	4.65		ug/L		93	70 - 130
tert-Butylbenzene	5.00	5.59		ug/L		112	70 - 130
Tetrachloroethene (PCE)	5.00	5.00		ug/L		100	70 - 130
Toluene	5.00	5.31		ug/L		106	70 - 130
trans-1,2-Dichloroethylene	5.00	4.97		ug/L		99	70 - 130
trans-1,3-Dichloropropene	5.00	4.30		ug/L		86	70 - 130
Trichloroethylene (TCE)	5.00	4.93		ug/L		99	70 - 130
Bromoethane	5.00	5.36		ug/L		107	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	5.42		ug/L		108	70 - 130
Trichlorotrifluoroethane	5.00	5.42		ug/L		108	70 - 130
Diisopropyl ether	5.00	4.62		ug/L		92	70 - 130

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 380-21167/4**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl Chloride (VC)	5.00	5.15		ug/L		103	70 - 130
Xylenes, Total	15.0	16.2		ug/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	110		70 - 130
Toluene-d8 (Surr)	104		70 - 130

**Lab Sample ID: LCSD 380-21167/5**  
**Matrix: Water**  
**Analysis Batch: 21167**

**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
1,1,1,2-Tetrachloroethane	5.00	5.31		ug/L		106	70 - 130	7	20
1,1,1-Trichloroethane	5.00	4.73		ug/L		95	70 - 130	2	20
1,1,2,2-Tetrachloroethane	5.00	5.32		ug/L		106	70 - 130	3	20
1,1,2-Trichloroethane	5.00	5.09		ug/L		102	70 - 130	4	20
1,1-Dichloroethane	5.00	5.59		ug/L		112	70 - 130	10	20
1,1-Dichlorethylene	5.00	5.69		ug/L		114	70 - 130	12	20
1,1-Dichloropropene	5.00	5.63		ug/L		113	70 - 130	13	20
1,2,3-Trichlorobenzene	5.00	4.84		ug/L		97	70 - 130	12	20
1,2,3-Trichloropropane	5.00	5.42		ug/L		108	70 - 130	6	20
1,2,4-Trichlorobenzene	5.00	4.70		ug/L		94	70 - 130	10	20
1,2,4-Trimethy benzene	5.00	6.26		ug/L		125	70 - 130	3	20
1,2-Dichloroethane	5.00	5.15		ug/L		103	70 - 130	4	20
1,2-Dichloropropane	5.00	5.22		ug/L		104	70 - 130	4	20
1,3,5-Trimethy benzene	5.00	6.35		ug/L		127	70 - 130	10	20
1,3-Dichloropropane	5.00	5.13		ug/L		103	70 - 130	5	20
2,2-Dichloropropane	5.00	5.57		ug/L		111	70 - 130	3	20
2-Butanone (MEK)	50.0	39.7	*1	ug/L		79	70 - 130	26	20
4-Methyl-2-pentanone (MIBK)	50.0	52.1		ug/L		104	70 - 130	4	20
Acetone	50.0	56.0	J	ug/L		112	70 - 130	8	20
Benzene	5.00	5.47		ug/L		109	70 - 130	6	20
Bromobenzene	5.00	5.74		ug/L		115	70 - 130	6	20
Bromochloromethane	5.00	4.26		ug/L		85	70 - 130	15	20
Bromodichloromethane	5.00	5.19		ug/L		104	70 - 130	5	20
Bromoform	5.00	5.25		ug/L		105	70 - 130	6	20
Bromomethane (Methyl Bromide)	5.00	5.40		ug/L		108	70 - 130	5	20
Carbon disulfide	5.00	6.45		ug/L		129	70 - 130	11	20
Carbon tetrachloride	5.00	5.26		ug/L		105	70 - 130	5	20
Chlorobenzene	5.00	5.22		ug/L		104	70 - 130	6	20
Chlorodibromomethane	5.00	5.00		ug/L		100	70 - 130	1	20
cis-1,3-Dichloropropene	5.00	4.57		ug/L		91	70 - 130	2	20
Dichloromethane	5.00	5.59		ug/L		112	70 - 130	11	20
Ethylbenzene	5.00	5.32		ug/L		106	70 - 130	5	20
Hexachlorobutadiene	5.00	5.52		ug/L		110	70 - 130	7	20
Isopropy benzene	5.00	5.79		ug/L		116	70 - 130	7	20
m,p-Xylenes	10.0	11.7		ug/L		117	70 - 130	6	20

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 380-21167/5**  
**Matrix: Water**  
**Analysis Batch: 21167**

**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
m-Dichlorobenzene (1,3-DCB)	5.00	5.85		ug/L		117	70 - 130	4	20
Methyl-tert-butyl Ether (MTBE)	5.00	4.64		ug/L		93	70 - 130	8	20
Naphthalene	5.00	4.29		ug/L		86	70 - 130	13	20
n-Butylbenzene	5.00	5.44		ug/L		109	70 - 130	10	20
N-Propylbenzene	5.00	5.67		ug/L		113	70 - 130	9	20
o-Chlorotoluene	5.00	6.09		ug/L		122	70 - 130	7	20
o-Dichlorobenzene (1,2-DCB)	5.00	5.34		ug/L		107	70 - 130	7	20
o-Xylene	5.00	5.31		ug/L		106	70 - 130	3	20
p-Chlorotoluene	5.00	5.94		ug/L		119	70 - 130	6	20
p-Dichlorobenzene (1,4-DCB)	5.00	6.26		ug/L		125	70 - 130	6	20
p-Isopropyltoluene	5.00	6.32		ug/L		126	70 - 130	8	20
sec-Butylbenzene	5.00	6.26		ug/L		125	70 - 130	8	20
Styrene	5.00	5.64		ug/L		113	70 - 130	5	20
Tert-amyl methyl ether	5.00	4.75		ug/L		95	70 - 130	5	20
1,3-Dichloropropene, Total	10.0	8.96		ug/L		90	70 - 130	2	20
Tert-butyl ethyl ether	5.00	5.08		ug/L		102	70 - 130	9	20
tert-Butylbenzene	5.00	6.01		ug/L		120	70 - 130	7	20
Tetrachloroethene (PCE)	5.00	5.32		ug/L		106	70 - 130	6	20
Toluene	5.00	5.41		ug/L		108	70 - 130	2	20
trans-1,2-Dichloroethylene	5.00	5.80		ug/L		116	70 - 130	15	20
trans-1,3-Dichloropropene	5.00	4.39		ug/L		88	70 - 130	2	20
Trichloroethylene (TCE)	5.00	5.30		ug/L		106	70 - 130	7	20
Bromoethane	5.00	5.79		ug/L		116	70 - 130	8	20
Trichlorofluoromethane (Freon 11)	5.00	5.06		ug/L		101	70 - 130	7	20
Trichlorotrifluoroethane	5.00	5.97		ug/L		119	70 - 130	10	20
Diisopropyl ether	5.00	5.32		ug/L		106	70 - 130	14	20
Vinyl Chloride (VC)	5.00	5.44		ug/L		109	70 - 130	6	20
Xylenes, Total	15.0	17.0		ug/L		113	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	105		70 - 130
Toluene-d8 (Surr)	104		70 - 130

**Lab Sample ID: MRL 380-21167/3**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	0.500	0.405	J	ug/L		81	50 - 150
Vinyl Chloride (VC)	0.250	0.286	J	ug/L		115	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130
Toluene-d8 (Surr)	90		70 - 130

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MRL 380-21167/7**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	0.500	0.503		ug/L		101	50 - 150
1,1,1-Trichloroethane	0.500	0.466	J	ug/L		93	50 - 150
1,1,2,2-Tetrachloroethane	0.500	0.607		ug/L		121	50 - 150
1,1,2-Trichloroethane	0.500	0.507		ug/L		101	50 - 150
1,1-Dichloroethane	0.500	0.623		ug/L		125	50 - 150
1,1-Dichlorethylene	0.500	0.682		ug/L		136	50 - 150
1,1-Dichloropropene	0.500	0.509		ug/L		102	50 - 150
1,2,3-Trichlorobenzene	0.500	0.510		ug/L		102	50 - 150
1,2,3-Trichloropropane	0.500	0.658		ug/L		132	50 - 150
1,2,4-Trichlorobenzene	0.500	0.509		ug/L		102	50 - 150
1,2,4-Trimethy benzene	0.500	0.439	J	ug/L		88	50 - 150
1,2-Dichloroethane	0.500	0.548		ug/L		110	50 - 150
1,2-Dichloropropane	0.500	0.550		ug/L		110	50 - 150
1,3,5-Trimethy benzene	0.500	0.444	J	ug/L		89	50 - 150
1,3-Dichloropropane	0.500	0.482	J	ug/L		96	50 - 150
2,2-Dichloropropane	0.500	0.591		ug/L		118	50 - 150
2-Butanone (MEK)	5.00	4.24	J	ug/L		85	50 - 150
4-Methyl-2-pentanone (MIBK)	5.00	3.79	J	ug/L		76	50 - 150
Acetone	5.00	5.92	J	ug/L		118	50 - 150
Benzene	0.500	0.613		ug/L		123	50 - 150
Bromobenzene	0.500	0.570		ug/L		114	50 - 150
Bromochloromethane	0.500	0.488	J	ug/L		98	50 - 150
Bromodichloromethane	0.500	0.512		ug/L		102	50 - 150
Bromoform	0.500	0.545		ug/L		109	50 - 150
Bromomethane (Methyl Bromide)	0.500	0.743		ug/L		149	50 - 150
Carbon disulfide	0.500	0.644		ug/L		129	50 - 150
Carbon tetrachloride	0.500	0.516		ug/L		103	50 - 150
Chlorobenzene	0.500	0.472	J	ug/L		94	50 - 150
Chlorodibromomethane	0.500	0.439	J	ug/L		88	50 - 150
cis-1,3-Dichloropropene	0.500	0.427	J	ug/L		85	50 - 150
Dichloromethane	0.500	0.743		ug/L		149	50 - 150
Ethylbenzene	0.500	0.441	J	ug/L		88	50 - 150
Hexachlorobutadiene	0.500	0.562		ug/L		112	50 - 150
Isopropy benzene	0.500	0.494	J	ug/L		99	50 - 150
m,p-Xylenes	1.00	0.827		ug/L		83	50 - 150
m-Dichlorobenzene (1,3-DCB)	0.500	0.575		ug/L		115	50 - 150
Methyl-tert-butyl Ether (MTBE)	0.500	0.524		ug/L		105	50 - 150
Naphthalene	0.500	0.383	J	ug/L		77	50 - 150
n-Butylbenzene	0.500	0.454	J	ug/L		91	50 - 150
N-Propylbenzene	0.500	0.413	J	ug/L		83	50 - 150
o-Chlorotoluene	0.500	0.551		ug/L		110	50 - 150
o-Dichlorobenzene (1,2-DCB)	0.500	0.545		ug/L		109	50 - 150
o-Xylene	0.500	0.428	J	ug/L		86	50 - 150
p-Chlorotoluene	0.500	0.411	J	ug/L		82	50 - 150
p-Dichlorobenzene (1,4-DCB)	0.500	0.578		ug/L		116	50 - 150
p-Isopropyltoluene	0.500	0.465	J	ug/L		93	50 - 150
sec-Butylbenzene	0.500	0.475	J	ug/L		95	50 - 150
Styrene	0.500	0.373	J	ug/L		75	50 - 150

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MRL 380-21167/7**  
**Matrix: Water**  
**Analysis Batch: 21167**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Tert-amyl methyl ether	0.500	0.465	J	ug/L		93	50 - 150
1,3-Dichloropropene, Total	1.00	0.822		ug/L		82	50 - 150
Tert-butyl ethyl ether	0.500	0.534	J	ug/L		107	50 - 150
tert-Butylbenzene	0.500	0.484	J	ug/L		97	50 - 150
Tetrachloroethene (PCE)	0.500	0.503		ug/L		101	50 - 150
Toluene	0.500	0.486	J	ug/L		97	50 - 150
trans-1,2-Dichloroethylene	0.500	0.606		ug/L		121	50 - 150
trans-1,3-Dichloropropene	0.500	0.395	J	ug/L		79	50 - 150
Trichloroethylene (TCE)	0.500	0.553		ug/L		111	50 - 150
Bromoethane	0.500	0.634		ug/L		127	50 - 150
Trichlorofluoromethane (Freon 11)	0.500	0.593		ug/L		119	50 - 150
Trichlorotrifluoroethane	0.500	0.617		ug/L		123	50 - 150
Diisopropyl ether	0.500	0.530	J	ug/L		106	50 - 150
Vinyl Chloride (VC)	0.500	0.714		ug/L		143	50 - 150
Xylenes, Total	1.50	1.26		ug/L		84	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	104		70 - 130
Toluene-d8 (Surr)	89		70 - 130

**Lab Sample ID: MB 380-21256/5**  
**Matrix: Water**  
**Analysis Batch: 21256**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	ug/L			10/19/22 22:36	1
1,1,1-Trichloroethane	ND		0.50	ug/L			10/19/22 22:36	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			10/19/22 22:36	1
1,1,2-Trichloroethane	ND		0.50	ug/L			10/19/22 22:36	1
1,1-Dichloroethane	ND		0.50	ug/L			10/19/22 22:36	1
1,1-Dichloroethylene	ND		0.50	ug/L			10/19/22 22:36	1
1,1-Dichloropropene	ND		0.50	ug/L			10/19/22 22:36	1
1,2,3-Trichlorobenzene	0.665	B	0.50	ug/L			10/19/22 22:36	1
1,2,3-Trichloropropane	ND		0.50	ug/L			10/19/22 22:36	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			10/19/22 22:36	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			10/19/22 22:36	1
1,2-Dichloroethane	ND		0.50	ug/L			10/19/22 22:36	1
1,2-Dichloropropane	ND		0.50	ug/L			10/19/22 22:36	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			10/19/22 22:36	1
1,3-Dichloropropane	ND		0.50	ug/L			10/19/22 22:36	1
2,2-Dichloropropane	ND		0.50	ug/L			10/19/22 22:36	1
2-Butanone (MEK)	ND		5.0	ug/L			10/19/22 22:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			10/19/22 22:36	1
Acetone	ND		500	ug/L			10/19/22 22:36	1
Benzene	ND		0.50	ug/L			10/19/22 22:36	1
Bromobenzene	ND		0.50	ug/L			10/19/22 22:36	1
Bromochloromethane	ND		0.50	ug/L			10/19/22 22:36	1

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 380-21256/5**  
**Matrix: Water**  
**Analysis Batch: 21256**

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Bromodichloromethane	ND		0.50	ug/L			10/19/22 22:36	1
Bromoform	ND		0.50	ug/L			10/19/22 22:36	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			10/19/22 22:36	1
Carbon disulfide	ND		0.50	ug/L			10/19/22 22:36	1
Carbon tetrachloride	ND		0.50	ug/L			10/19/22 22:36	1
Chlorobenzene	ND		0.50	ug/L			10/19/22 22:36	1
Chlorodibromomethane	ND		0.50	ug/L			10/19/22 22:36	1
Chloroethane	ND		0.50	ug/L			10/19/22 22:36	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			10/19/22 22:36	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			10/19/22 22:36	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			10/19/22 22:36	1
Dibromomethane	ND		0.50	ug/L			10/19/22 22:36	1
Dichlorodifluoromethane	ND		0.50	ug/L			10/19/22 22:36	1
Dichloromethane	ND		0.50	ug/L			10/19/22 22:36	1
Ethylbenzene	ND		0.50	ug/L			10/19/22 22:36	1
Hexachlorobutadiene	ND		0.50	ug/L			10/19/22 22:36	1
Isopropyl benzene	ND		0.50	ug/L			10/19/22 22:36	1
m,p-Xylenes	ND		0.50	ug/L			10/19/22 22:36	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			10/19/22 22:36	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			10/19/22 22:36	1
Naphthalene	0.554	B	0.50	ug/L			10/19/22 22:36	1
n-Butylbenzene	ND		0.50	ug/L			10/19/22 22:36	1
N-Propylbenzene	ND		0.50	ug/L			10/19/22 22:36	1
o-Chlorotoluene	ND		0.50	ug/L			10/19/22 22:36	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			10/19/22 22:36	1
o-Xylene	ND		0.50	ug/L			10/19/22 22:36	1
p-Chlorotoluene	ND		0.50	ug/L			10/19/22 22:36	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			10/19/22 22:36	1
p-Isopropyltoluene	ND		0.50	ug/L			10/19/22 22:36	1
sec-Butylbenzene	ND		0.50	ug/L			10/19/22 22:36	1
Styrene	ND		0.50	ug/L			10/19/22 22:36	1
Tert-amyl methyl ether	ND		3.0	ug/L			10/19/22 22:36	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			10/19/22 22:36	1
Tert-butyl ethyl ether	ND		3.0	ug/L			10/19/22 22:36	1
tert-Butylbenzene	ND		0.50	ug/L			10/19/22 22:36	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			10/19/22 22:36	1
Toluene	ND		0.50	ug/L			10/19/22 22:36	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			10/19/22 22:36	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/19/22 22:36	1
Trichloroethylene (TCE)	ND		0.50	ug/L			10/19/22 22:36	1
Bromoethane	ND		0.50	ug/L			10/19/22 22:36	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			10/19/22 22:36	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			10/19/22 22:36	1
Trichlorotrifluoroethane	ND		0.50	ug/L			10/19/22 22:36	1
Diisopropyl ether	ND		3.0	ug/L			10/19/22 22:36	1
Vinyl Chloride (VC)	ND		0.30	ug/L			10/19/22 22:36	1
Xylenes, Total	ND		0.50	ug/L			10/19/22 22:36	1

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 380-21256/5**  
**Matrix: Water**  
**Analysis Batch: 21256**

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

<i>Tentatively Identified Compound</i>	<i>MB</i>	<i>MB</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Tentatively Identified Compound</i>	<i>None</i>		<i>ug/L</i>					<i>10/19/22 22:36</i>	<i>1</i>
<i>Surrogate</i>	<i>MB</i>	<i>MB</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	<i>85</i>		<i>70 - 130</i>					<i>10/19/22 22:36</i>	<i>1</i>
<i>4-Bromofluorobenzene (Surr)</i>	<i>102</i>		<i>70 - 130</i>					<i>10/19/22 22:36</i>	<i>1</i>
<i>Toluene-d8 (Surr)</i>	<i>80</i>		<i>70 - 130</i>					<i>10/19/22 22:36</i>	<i>1</i>

**Lab Sample ID: LCS 380-21256/3**  
**Matrix: Water**  
**Analysis Batch: 21256**

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,1,1,2-Tetrachloroethane	5.00	6.31		ug/L		126	70 - 130
1,1,1-Trichloroethane	5.00	5.71		ug/L		114	70 - 130
1,1,2,2-Tetrachloroethane	5.00	6.38		ug/L		128	70 - 130
1,1,2-Trichloroethane	5.00	6.33		ug/L		127	70 - 130
1,1-Dichloroethane	5.00	7.63	*+	ug/L		153	70 - 130
1,1-Dichlorethylene	5.00	8.10	*+	ug/L		162	70 - 130
1,1-Dichloropropene	5.00	6.13		ug/L		123	70 - 130
1,2,3-Trichlorobenzene	5.00	5.50		ug/L		110	70 - 130
1,2,3-Trichloropropane	5.00	5.98		ug/L		120	70 - 130
1,2,4-Trichlorobenzene	5.00	5.11		ug/L		102	70 - 130
1,2,4-Trimethy benzene	5.00	7.15	*+	ug/L		143	70 - 130
1,2-Dichloroethane	5.00	5.75		ug/L		115	70 - 130
1,2-Dichloropropane	5.00	6.06		ug/L		121	70 - 130
1,3,5-Trimethy benzene	5.00	7.04	*+	ug/L		141	70 - 130
1,3-Dichloropropane	5.00	6.09		ug/L		122	70 - 130
2,2-Dichloropropane	5.00	4.75		ug/L		95	70 - 130
2-Butanone (MEK)	50.0	47.8		ug/L		96	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	64.2		ug/L		128	70 - 130
Acetone	50.0	58.6	J	ug/L		117	70 - 130
Benzene	5.00	5.81		ug/L		116	70 - 130
Bromobenzene	5.00	6.67	*+	ug/L		133	70 - 130
Bromochloromethane	5.00	5.69		ug/L		114	70 - 130
Bromodichloromethane	5.00	5.66		ug/L		113	70 - 130
Bromoform	5.00	4.79		ug/L		96	70 - 130
Bromomethane (Methyl Bromide)	5.00	7.62	*+	ug/L		152	70 - 130
Carbon disulfide	5.00	8.47	*+	ug/L		169	70 - 130
Carbon tetrachloride	5.00	6.26		ug/L		125	70 - 130
Chlorobenzene	5.00	6.33		ug/L		127	70 - 130
Chlorodibromomethane	5.00	5.61		ug/L		112	70 - 130
cis-1,3-Dichloropropene	5.00	4.64		ug/L		93	70 - 130
Dichloromethane	5.00	7.63	*+	ug/L		153	70 - 130
Ethylbenzene	5.00	6.69	*+	ug/L		134	70 - 130
Hexachlorobutadiene	5.00	6.88	*+	ug/L		138	70 - 130
Isopropyl benzene	5.00	6.48		ug/L		130	70 - 130
m,p-Xylenes	10.0	14.6	*+	ug/L		146	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	6.89	*+	ug/L		138	70 - 130

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 380-21256/3**  
**Matrix: Water**  
**Analysis Batch: 21256**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methyl-tert-butyl Ether (MTBE)	5.00	5.72		ug/L		114	70 - 130
Naphthalene	5.00	5.20		ug/L		104	70 - 130
n-Butylbenzene	5.00	5.80		ug/L		116	70 - 130
N-Propylbenzene	5.00	7.19	*+	ug/L		144	70 - 130
o-Chlorotoluene	5.00	6.92	*+	ug/L		138	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	5.96		ug/L		119	70 - 130
o-Xylene	5.00	6.79	*+	ug/L		136	70 - 130
p-Chlorotoluene	5.00	7.49	*+	ug/L		150	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	7.42	*+	ug/L		148	70 - 130
p-Isopropyltoluene	5.00	7.00	*+	ug/L		140	70 - 130
sec-Butylbenzene	5.00	7.07	*+	ug/L		141	70 - 130
Styrene	5.00	7.30	*+	ug/L		146	70 - 130
Tert-amyl methyl ether	5.00	5.00		ug/L		100	70 - 130
1,3-Dichloropropene, Total	10.0	8.98		ug/L		90	70 - 130
Tert-butyl ethyl ether	5.00	6.34		ug/L		127	70 - 130
tert-Butylbenzene	5.00	6.73	*+	ug/L		135	70 - 130
Tetrachloroethene (PCE)	5.00	6.49		ug/L		130	70 - 130
Toluene	5.00	6.93	*+	ug/L		139	70 - 130
trans-1,2-Dichloroethylene	5.00	7.96	*+	ug/L		159	70 - 130
trans-1,3-Dichloropropene	5.00	4.34		ug/L		87	70 - 130
Trichloroethylene (TCE)	5.00	6.78	*+	ug/L		136	70 - 130
Bromoethane	5.00	7.98	*+	ug/L		160	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	7.51	*+	ug/L		150	70 - 130
Trichlorotrifluoroethane	5.00	7.55	*+	ug/L		151	70 - 130
Diisopropyl ether	5.00	6.98	*+	ug/L		140	70 - 130
Vinyl Chloride (VC)	5.00	6.49		ug/L		130	70 - 130
Xylenes, Total	15.0	21.4	*+	ug/L		143	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
4-Bromofluorobenzene (Surr)	111		70 - 130
Toluene-d8 (Surr)	110		70 - 130

**Lab Sample ID: LCSD 380-21256/4**  
**Matrix: Water**  
**Analysis Batch: 21256**

**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
1,1,1,2-Tetrachloroethane	5.00	5.82		ug/L		116	70 - 130	8	20
1,1,1-Trichloroethane	5.00	5.28		ug/L		106	70 - 130	8	20
1,1,1,2-Tetrachloroethane	5.00	5.61		ug/L		112	70 - 130	13	20
1,1,2-Trichloroethane	5.00	5.99		ug/L		120	70 - 130	5	20
1,1-Dichloroethane	5.00	6.69	*+	ug/L		134	70 - 130	13	20
1,1-Dichlorethylene	5.00	6.79	*+	ug/L		136	70 - 130	18	20
1,1-Dichloropropene	5.00	5.55		ug/L		111	70 - 130	10	20
1,2,3-Trichlorobenzene	5.00	5.01		ug/L		100	70 - 130	9	20
1,2,3-Trichloropropane	5.00	5.51		ug/L		110	70 - 130	8	20
1,2,4-Trichlorobenzene	5.00	4.79		ug/L		96	70 - 130	7	20

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 380-21256/4**  
**Matrix: Water**  
**Analysis Batch: 21256**

**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
1,2,4-Trimethy benzene	5.00	6.39		ug/L		128	70 - 130	11	20
1,2-Dichloroethane	5.00	5.36		ug/L		107	70 - 130	7	20
1,2-Dichloropropane	5.00	5.81		ug/L		116	70 - 130	4	20
1,3,5-Trimethy benzene	5.00	6.13		ug/L		123	70 - 130	14	20
1,3-Dichloropropane	5.00	5.89		ug/L		118	70 - 130	3	20
2,2-Dichloropropane	5.00	4.52		ug/L		90	70 - 130	5	20
2-Butanone (MEK)	50.0	49.8		ug/L		100	70 - 130	4	20
4-Methyl-2-pentanone (MIBK)	50.0	62.8		ug/L		126	70 - 130	2	20
Acetone	50.0	64.6	J	ug/L		129	70 - 130	10	20
Benzene	5.00	5.20		ug/L		104	70 - 130	11	20
Bromobenzene	5.00	5.98		ug/L		120	70 - 130	11	20
Bromochloromethane	5.00	5.10		ug/L		102	70 - 130	11	20
Bromodichloromethane	5.00	5.56		ug/L		111	70 - 130	2	20
Bromoform	5.00	4.60		ug/L		92	70 - 130	4	20
Bromomethane (Methyl Bromide)	5.00	6.44		ug/L		129	70 - 130	17	20
Carbon disulfide	5.00	7.57	*+	ug/L		151	70 - 130	11	20
Carbon tetrachloride	5.00	5.62		ug/L		112	70 - 130	11	20
Chlorobenzene	5.00	5.91		ug/L		118	70 - 130	7	20
Chlorodibromomethane	5.00	5.32		ug/L		106	70 - 130	5	20
cis-1,3-Dichloropropene	5.00	4.65		ug/L		93	70 - 130	0	20
Dichloromethane	5.00	6.43		ug/L		129	70 - 130	17	20
Ethylbenzene	5.00	5.96		ug/L		119	70 - 130	12	20
Hexachlorobutadiene	5.00	6.06		ug/L		121	70 - 130	13	20
Isopropy benzene	5.00	5.88		ug/L		118	70 - 130	10	20
m,p-Xylenes	10.0	13.1	*+	ug/L		131	70 - 130	11	20
m-Dichlorobenzene (1,3-DCB)	5.00	6.16		ug/L		123	70 - 130	11	20
Methyl-tert-butyl Ether (MTBE)	5.00	5.29		ug/L		106	70 - 130	8	20
Naphthalene	5.00	4.46		ug/L		89	70 - 130	15	20
n-Butylbenzene	5.00	5.29		ug/L		106	70 - 130	9	20
N-Propylbenzene	5.00	6.25		ug/L		125	70 - 130	14	20
o-Chlorotoluene	5.00	6.20		ug/L		124	70 - 130	11	20
o-Dichlorobenzene (1,2-DCB)	5.00	5.41		ug/L		108	70 - 130	10	20
o-Xylene	5.00	6.07		ug/L		121	70 - 130	11	20
p-Chlorotoluene	5.00	6.63	*+	ug/L		133	70 - 130	12	20
p-Dichlorobenzene (1,4-DCB)	5.00	6.40		ug/L		128	70 - 130	15	20
p-Isopropyltoluene	5.00	6.20		ug/L		124	70 - 130	12	20
sec-Butylbenzene	5.00	6.32		ug/L		126	70 - 130	11	20
Styrene	5.00	6.39		ug/L		128	70 - 130	13	20
Tert-amyl methyl ether	5.00	4.63		ug/L		93	70 - 130	8	20
1,3-Dichloropropene, Total	10.0	8.89		ug/L		89	70 - 130	1	20
Tert-butyl ethyl ether	5.00	5.82		ug/L		116	70 - 130	9	20
tert-Butylbenzene	5.00	6.02		ug/L		120	70 - 130	11	20
Tetrachloroethene (PCE)	5.00	5.74		ug/L		115	70 - 130	12	20
Toluene	5.00	6.20		ug/L		124	70 - 130	11	20
trans-1,2-Dichloroethylene	5.00	6.76	*+	ug/L		135	70 - 130	16	20
trans-1,3-Dichloropropene	5.00	4.24		ug/L		85	70 - 130	2	20
Trichloroethylene (TCE)	5.00	6.12		ug/L		122	70 - 130	10	20
Bromoethane	5.00	6.96	*+	ug/L		139	70 - 130	14	20

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 380-21256/4**  
**Matrix: Water**  
**Analysis Batch: 21256**

**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
Trichlorofluoromethane (Freon 11)	5.00	5.40	*1	ug/L		108	70 - 130	33	20
Trichlorotrifluoroethane	5.00	6.62	*+	ug/L		132	70 - 130	13	20
Diisopropyl ether	5.00	6.17		ug/L		123	70 - 130	12	20
Vinyl Chloride (VC)	5.00	5.82	*1	ug/L		116	70 - 130	61	20
Xylenes, Total	15.0	19.2		ug/L		128	70 - 130	11	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130
Toluene-d8 (Surr)	117		70 - 130

**Lab Sample ID: MB 380-21526/15**  
**Matrix: Water**  
**Analysis Batch: 21526**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	ug/L			10/21/22 15:33	1
1,1,1-Trichloroethane	ND		0.50	ug/L			10/21/22 15:33	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			10/21/22 15:33	1
1,1,2-Trichloroethane	ND		0.50	ug/L			10/21/22 15:33	1
1,1-Dichloroethane	ND		0.50	ug/L			10/21/22 15:33	1
1,1-Dichloroethylene	ND		0.50	ug/L			10/21/22 15:33	1
1,1-Dichloropropene	ND		0.50	ug/L			10/21/22 15:33	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			10/21/22 15:33	1
1,2,3-Trichloropropane	ND		0.50	ug/L			10/21/22 15:33	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			10/21/22 15:33	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			10/21/22 15:33	1
1,2-Dichloroethane	ND		0.50	ug/L			10/21/22 15:33	1
1,2-Dichloropropane	ND		0.50	ug/L			10/21/22 15:33	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			10/21/22 15:33	1
1,3-Dichloropropane	ND		0.50	ug/L			10/21/22 15:33	1
2,2-Dichloropropane	ND		0.50	ug/L			10/21/22 15:33	1
2-Butanone (MEK)	ND		5.0	ug/L			10/21/22 15:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			10/21/22 15:33	1
Acetone	ND		500	ug/L			10/21/22 15:33	1
Benzene	ND		0.50	ug/L			10/21/22 15:33	1
Bromobenzene	ND		0.50	ug/L			10/21/22 15:33	1
Bromochloromethane	ND		0.50	ug/L			10/21/22 15:33	1
Bromodichloromethane	ND		0.50	ug/L			10/21/22 15:33	1
Bromoform	ND		0.50	ug/L			10/21/22 15:33	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			10/21/22 15:33	1
Carbon disulfide	ND		0.50	ug/L			10/21/22 15:33	1
Carbon tetrachloride	ND		0.50	ug/L			10/21/22 15:33	1
Chlorobenzene	ND		0.50	ug/L			10/21/22 15:33	1
Chlorodibromomethane	ND		0.50	ug/L			10/21/22 15:33	1
Chloroethane	ND		0.50	ug/L			10/21/22 15:33	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			10/21/22 15:33	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			10/21/22 15:33	1

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 380-21526/15**  
**Matrix: Water**  
**Analysis Batch: 21526**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		0.50	ug/L			10/21/22 15:33	1
Dibromomethane	ND		0.50	ug/L			10/21/22 15:33	1
Dichlorodifluoromethane	ND		0.50	ug/L			10/21/22 15:33	1
Dichloromethane	ND		0.50	ug/L			10/21/22 15:33	1
Ethylbenzene	ND		0.50	ug/L			10/21/22 15:33	1
Hexachlorobutadiene	ND		0.50	ug/L			10/21/22 15:33	1
Isopropyl benzene	ND		0.50	ug/L			10/21/22 15:33	1
m,p-Xylenes	ND		0.50	ug/L			10/21/22 15:33	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			10/21/22 15:33	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			10/21/22 15:33	1
Naphthalene	ND		0.50	ug/L			10/21/22 15:33	1
n-Butylbenzene	ND		0.50	ug/L			10/21/22 15:33	1
N-Propylbenzene	ND		0.50	ug/L			10/21/22 15:33	1
o-Chlorotoluene	ND		0.50	ug/L			10/21/22 15:33	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			10/21/22 15:33	1
o-Xylene	ND		0.50	ug/L			10/21/22 15:33	1
p-Chlorotoluene	ND		0.50	ug/L			10/21/22 15:33	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			10/21/22 15:33	1
p-Isopropyltoluene	ND		0.50	ug/L			10/21/22 15:33	1
sec-Butylbenzene	ND		0.50	ug/L			10/21/22 15:33	1
Styrene	ND		0.50	ug/L			10/21/22 15:33	1
Tert-amyl methyl ether	ND		3.0	ug/L			10/21/22 15:33	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			10/21/22 15:33	1
Tert-butyl ethyl ether	ND		3.0	ug/L			10/21/22 15:33	1
tert-Butylbenzene	ND		0.50	ug/L			10/21/22 15:33	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			10/21/22 15:33	1
Toluene	ND		0.50	ug/L			10/21/22 15:33	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			10/21/22 15:33	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			10/21/22 15:33	1
Trichloroethylene (TCE)	ND		0.50	ug/L			10/21/22 15:33	1
Bromoethane	ND		0.50	ug/L			10/21/22 15:33	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			10/21/22 15:33	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			10/21/22 15:33	1
Trichlorotrifluoroethane	ND		0.50	ug/L			10/21/22 15:33	1
Diisopropyl ether	ND		3.0	ug/L			10/21/22 15:33	1
Vinyl Chloride (VC)	ND		0.30	ug/L			10/21/22 15:33	1
Xylenes, Total	ND		0.50	ug/L			10/21/22 15:33	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Tentatively Identified Compound</i>	None		ug/L					10/21/22 15:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130		10/21/22 15:33	1
4-Bromofluorobenzene (Surr)	96		70 - 130		10/21/22 15:33	1
Toluene-d8 (Surr)	88		70 - 130		10/21/22 15:33	1

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 380-21526/11**

**Matrix: Water**

**Analysis Batch: 21526**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	5.00	4.61		ug/L		92	70 - 130
1,1,1-Trichloroethane	5.00	4.42		ug/L		88	70 - 130
1,1,2,2-Tetrachloroethane	5.00	4.56		ug/L		91	70 - 130
1,1,2-Trichloroethane	5.00	4.57		ug/L		91	70 - 130
1,1-Dichloroethane	5.00	4.34		ug/L		87	70 - 130
1,1-Dichlorethylene	5.00	4.39		ug/L		88	70 - 130
1,1-Dichloropropene	5.00	4.45		ug/L		89	70 - 130
1,2,3-Trichlorobenzene	5.00	5.59		ug/L		112	70 - 130
1,2,3-Trichloropropane	5.00	4.54		ug/L		91	70 - 130
1,2,4-Trichlorobenzene	5.00	4.88		ug/L		98	70 - 130
1,2,4-Trimethy benzene	5.00	4.66		ug/L		93	70 - 130
1,2-Dichloroethane	5.00	4.53		ug/L		91	70 - 130
1,2-Dichloropropane	5.00	4.63		ug/L		93	70 - 130
1,3,5-Trimethy benzene	5.00	4.39		ug/L		88	70 - 130
1,3-Dichloropropane	5.00	4.63		ug/L		93	70 - 130
2,2-Dichloropropane	5.00	4.06		ug/L		81	70 - 130
2-Butanone (MEK)	50.0	45.7		ug/L		91	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	53.6		ug/L		107	70 - 130
Acetone	50.0	48.6	J	ug/L		97	70 - 130
Benzene	5.00	4.47		ug/L		89	70 - 130
Bromobenzene	5.00	4.53		ug/L		91	70 - 130
Bromochloromethane	5.00	4.40		ug/L		88	70 - 130
Bromodichloromethane	5.00	4.29		ug/L		86	70 - 130
Bromoform	5.00	4.49		ug/L		90	70 - 130
Bromomethane (Methyl Bromide)	5.00	4.22		ug/L		84	70 - 130
Carbon disulfide	5.00	4.17		ug/L		83	70 - 130
Carbon tetrachloride	5.00	4.48		ug/L		90	70 - 130
Chlorobenzene	5.00	4.72		ug/L		94	70 - 130
Chlorodibromomethane	5.00	4.30		ug/L		86	70 - 130
cis-1,3-Dichloropropene	5.00	4.25		ug/L		85	70 - 130
Dichloromethane	5.00	4.37		ug/L		87	70 - 130
Ethylbenzene	5.00	4.59		ug/L		92	70 - 130
Hexachlorobutadiene	5.00	4.79		ug/L		96	70 - 130
Isopropy benzene	5.00	4.61		ug/L		92	70 - 130
m,p-Xylenes	10.0	9.65		ug/L		96	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	4.87		ug/L		97	70 - 130
Methyl-tert-butyl Ether (MTBE)	5.00	4.68		ug/L		94	70 - 130
Naphthalene	5.00	5.78		ug/L		116	70 - 130
n-Butylbenzene	5.00	4.88		ug/L		98	70 - 130
N-Propylbenzene	5.00	4.91		ug/L		98	70 - 130
o-Chlorotoluene	5.00	4.75		ug/L		95	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	4.93		ug/L		99	70 - 130
o-Xylene	5.00	4.75		ug/L		95	70 - 130
p-Chlorotoluene	5.00	5.07		ug/L		101	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	4.88		ug/L		98	70 - 130
p-Isopropyltoluene	5.00	5.00		ug/L		100	70 - 130
sec-Butylbenzene	5.00	4.86		ug/L		97	70 - 130
Styrene	5.00	4.51		ug/L		90	70 - 130

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 380-21526/11**  
**Matrix: Water**  
**Analysis Batch: 21526**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tert-amyl methyl ether	5.00	4.62		ug/L		92	70 - 130
1,3-Dichloropropene, Total	10.0	8.28		ug/L		83	70 - 130
Tert-butyl ethyl ether	5.00	4.44		ug/L		89	70 - 130
tert-Butylbenzene	5.00	4.65		ug/L		93	70 - 130
Tetrachloroethene (PCE)	5.00	4.49		ug/L		90	70 - 130
Toluene	5.00	4.64		ug/L		93	70 - 130
trans-1,2-Dichloroethylene	5.00	4.51		ug/L		90	70 - 130
trans-1,3-Dichloropropene	5.00	4.03		ug/L		81	70 - 130
Trichloroethylene (TCE)	5.00	4.57		ug/L		91	70 - 130
Bromoethane	5.00	4.48		ug/L		90	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	4.42		ug/L		88	70 - 130
Trichlorotrifluoroethane	5.00	4.68		ug/L		94	70 - 130
Diisopropyl ether	5.00	4.39		ug/L		88	70 - 130
Vinyl Chloride (VC)	5.00	4.28		ug/L		86	70 - 130
Xylenes, Total	15.0	14.4		ug/L		96	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Toluene-d8 (Surr)	105		70 - 130

**Lab Sample ID: LCSD 380-21526/12**  
**Matrix: Water**  
**Analysis Batch: 21526**

**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
1,1,1,2-Tetrachloroethane	5.00	5.26		ug/L		105	70 - 130	13	20
1,1,1-Trichloroethane	5.00	5.28		ug/L		106	70 - 130	18	20
1,1,1,2,2-Tetrachloroethane	5.00	5.21		ug/L		104	70 - 130	13	20
1,1,2-Trichloroethane	5.00	5.07		ug/L		101	70 - 130	10	20
1,1-Dichloroethane	5.00	5.18		ug/L		104	70 - 130	18	20
1,1-Dichloroethylene	5.00	4.98		ug/L		100	70 - 130	13	20
1,1-Dichloropropene	5.00	5.28		ug/L		106	70 - 130	17	20
1,2,3-Trichlorobenzene	5.00	5.88		ug/L		118	70 - 130	5	20
1,2,3-Trichloropropane	5.00	5.29		ug/L		106	70 - 130	15	20
1,2,4-Trichlorobenzene	5.00	5.27		ug/L		105	70 - 130	8	20
1,2,4-Trimethy benzene	5.00	5.61		ug/L		112	70 - 130	19	20
1,2-Dichloroethane	5.00	5.18		ug/L		104	70 - 130	13	20
1,2-Dichloropropane	5.00	5.31		ug/L		106	70 - 130	14	20
1,3,5-Trimethy benzene	5.00	5.47	*1	ug/L		109	70 - 130	22	20
1,3-Dichloropropane	5.00	5.22		ug/L		104	70 - 130	12	20
2,2-Dichloropropane	5.00	4.87		ug/L		97	70 - 130	18	20
2-Butanone (MEK)	50.0	53.4		ug/L		107	70 - 130	15	20
4-Methyl-2-pentanone (MIBK)	50.0	60.0		ug/L		120	70 - 130	11	20
Acetone	50.0	56.1	J	ug/L		112	70 - 130	14	20
Benzene	5.00	5.30		ug/L		106	70 - 130	17	20
Bromobenzene	5.00	5.22		ug/L		104	70 - 130	14	20
Bromochloromethane	5.00	5.20		ug/L		104	70 - 130	17	20

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 380-21526/12**  
**Matrix: Water**  
**Analysis Batch: 21526**

**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
Bromodichloromethane	5.00	5.01		ug/L		100	70 - 130	15	20
Bromoform	5.00	5.42		ug/L		108	70 - 130	19	20
Bromomethane (Methyl Bromide)	5.00	5.27	*1	ug/L		105	70 - 130	22	20
Carbon disulfide	5.00	4.98		ug/L		100	70 - 130	18	20
Carbon tetrachloride	5.00	5.28		ug/L		106	70 - 130	16	20
Chlorobenzene	5.00	5.47		ug/L		109	70 - 130	15	20
Chlorodibromomethane	5.00	5.06		ug/L		101	70 - 130	16	20
cis-1,3-Dichloropropene	5.00	4.84		ug/L		97	70 - 130	13	20
Dichloromethane	5.00	4.77		ug/L		95	70 - 130	9	20
Ethylbenzene	5.00	5.45		ug/L		109	70 - 130	17	20
Hexachlorobutadiene	5.00	5.53		ug/L		111	70 - 130	14	20
Isopropyl benzene	5.00	5.52		ug/L		110	70 - 130	18	20
m,p-Xylenes	10.0	11.8		ug/L		118	70 - 130	20	20
m-Dichlorobenzene (1,3-DCB)	5.00	5.57		ug/L		111	70 - 130	13	20
Methyl-tert-butyl Ether (MTBE)	5.00	5.19		ug/L		104	70 - 130	10	20
Naphthalene	5.00	6.06		ug/L		121	70 - 130	5	20
n-Butylbenzene	5.00	5.65		ug/L		113	70 - 130	15	20
N-Propylbenzene	5.00	5.68		ug/L		114	70 - 130	15	20
o-Chlorotoluene	5.00	5.47		ug/L		109	70 - 130	14	20
o-Dichlorobenzene (1,2-DCB)	5.00	5.48		ug/L		110	70 - 130	11	20
o-Xylene	5.00	5.56		ug/L		111	70 - 130	16	20
p-Chlorotoluene	5.00	5.76		ug/L		115	70 - 130	13	20
p-Dichlorobenzene (1,4-DCB)	5.00	5.71		ug/L		114	70 - 130	16	20
p-Isopropyltoluene	5.00	5.82		ug/L		116	70 - 130	15	20
sec-Butylbenzene	5.00	5.76		ug/L		115	70 - 130	17	20
Styrene	5.00	5.60	*1	ug/L		112	70 - 130	22	20
Tert-amyl methyl ether	5.00	5.37		ug/L		107	70 - 130	15	20
1,3-Dichloropropene, Total	10.0	9.34		ug/L		93	70 - 130	12	20
Tert-butyl ethyl ether	5.00	5.01		ug/L		100	70 - 130	12	20
tert-Butylbenzene	5.00	5.54		ug/L		111	70 - 130	18	20
Tetrachloroethene (PCE)	5.00	5.19		ug/L		104	70 - 130	14	20
Toluene	5.00	5.42		ug/L		108	70 - 130	15	20
trans-1,2-Dichloroethylene	5.00	5.09		ug/L		102	70 - 130	12	20
trans-1,3-Dichloropropene	5.00	4.50		ug/L		90	70 - 130	11	20
Trichloroethylene (TCE)	5.00	5.25		ug/L		105	70 - 130	14	20
Bromoethane	5.00	4.85		ug/L		97	70 - 130	8	20
Trichlorofluoromethane (Freon 11)	5.00	5.25		ug/L		105	70 - 130	17	20
Trichlorotrifluoroethane	5.00	5.46		ug/L		109	70 - 130	16	20
Diisopropyl ether	5.00	5.11		ug/L		102	70 - 130	15	20
Vinyl Chloride (VC)	5.00	4.60		ug/L		92	70 - 130	7	20
Xylenes, Total	15.0	17.4		ug/L		116	70 - 130	19	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	104		70 - 130
Toluene-d8 (Surr)	106		70 - 130

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MRL 380-21526/10**  
**Matrix: Water**  
**Analysis Batch: 21526**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	0.500	0.455	J	ug/L		91	50 - 150
Vinyl Chloride (VC)	0.250	0.225	J	ug/L		90	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	94		70 - 130
Toluene-d8 (Surr)	91		70 - 130

**Lab Sample ID: MRL 380-21526/14**  
**Matrix: Water**  
**Analysis Batch: 21526**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	0.500	0.452	J	ug/L		90	50 - 150
1,1,1-Trichloroethane	0.500	0.439	J	ug/L		88	50 - 150
1,1,2,2-Tetrachloroethane	0.500	0.548		ug/L		110	50 - 150
1,1,2-Trichloroethane	0.500	0.504		ug/L		101	50 - 150
1,1-Dichloroethane	0.500	0.538		ug/L		108	50 - 150
1,1-Dichlorethylene	0.500	0.420	J	ug/L		84	50 - 150
1,1-Dichloropropene	0.500	0.481	J	ug/L		96	50 - 150
1,2,3-Trichlorobenzene	0.500	0.579		ug/L		116	50 - 150
1,2,3-Trichloropropane	0.500	0.518		ug/L		104	50 - 150
1,2,4-Trichlorobenzene	0.500	0.496	J	ug/L		99	50 - 150
1,2,4-Trimethy benzene	0.500	0.363	J	ug/L		73	50 - 150
1,2-Dichloroethane	0.500	0.509		ug/L		102	50 - 150
1,2-Dichloropropane	0.500	0.454	J	ug/L		91	50 - 150
1,3,5-Trimethy benzene	0.500	0.382	J	ug/L		76	50 - 150
1,3-Dichloropropane	0.500	0.484	J	ug/L		97	50 - 150
2,2-Dichloropropane	0.500	0.391	J	ug/L		78	50 - 150
2-Butanone (MEK)	5.00	5.51		ug/L		110	50 - 150
4-Methyl-2-pentanone (MIBK)	5.00	3.96	J	ug/L		79	50 - 150
Acetone	5.00	4.17	J	ug/L		83	50 - 150
Benzene	0.500	0.485	J	ug/L		97	50 - 150
Bromobenzene	0.500	0.438	J	ug/L		88	50 - 150
Bromochloromethane	0.500	0.527		ug/L		105	50 - 150
Bromodichloromethane	0.500	0.476	J	ug/L		95	50 - 150
Bromoform	0.500	0.604		ug/L		121	50 - 150
Bromomethane (Methyl Bromide)	0.500	0.473	J	ug/L		95	50 - 150
Carbon disulfide	0.500	0.415	J	ug/L		83	50 - 150
Carbon tetrachloride	0.500	0.467	J	ug/L		93	50 - 150
Chlorobenzene	0.500	0.433	J	ug/L		87	50 - 150
Chlorodibromomethane	0.500	0.423	J	ug/L		85	50 - 150
cis-1,3-Dichloropropene	0.500	0.346	J	ug/L		69	50 - 150
Dichloromethane	0.500	0.341	J	ug/L		68	50 - 150
Ethylbenzene	0.500	0.378	J	ug/L		76	50 - 150
Hexachlorobutadiene	0.500	0.572		ug/L		114	50 - 150
Isopropy benzene	0.500	0.375	J	ug/L		75	50 - 150
m,p-Xylenes	1.00	0.767		ug/L		77	50 - 150

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MRL 380-21526/14**  
**Matrix: Water**  
**Analysis Batch: 21526**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
m-Dichlorobenzene (1,3-DCB)	0.500	0.487	J	ug/L		97	50 - 150
Methyl-tert-butyl Ether (MTBE)	0.500	0.451	J	ug/L		90	50 - 150
Naphthalene	0.500	0.623		ug/L		125	50 - 150
n-Butylbenzene	0.500	0.420	J	ug/L		84	50 - 150
N-Propylbenzene	0.500	0.391	J	ug/L		78	50 - 150
o-Chlorotoluene	0.500	0.440	J	ug/L		88	50 - 150
o-Dichlorobenzene (1,2-DCB)	0.500	0.477	J	ug/L		95	50 - 150
o-Xylene	0.500	0.355	J	ug/L		71	50 - 150
p-Chlorotoluene	0.500	0.424	J	ug/L		85	50 - 150
p-Dichlorobenzene (1,4-DCB)	0.500	0.456	J	ug/L		91	50 - 150
p-Isopropyltoluene	0.500	0.366	J	ug/L		73	50 - 150
sec-Butylbenzene	0.500	0.373	J	ug/L		75	50 - 150
Styrene	0.500	0.311	J	ug/L		62	50 - 150
Tert-amyl methyl ether	0.500	0.467	J	ug/L		93	50 - 150
1,3-Dichloropropene, Total	1.00	0.710		ug/L		71	50 - 150
Tert-butyl ethyl ether	0.500	0.458	J	ug/L		92	50 - 150
tert-Butylbenzene	0.500	0.368	J	ug/L		74	50 - 150
Tetrachloroethene (PCE)	0.500	0.485	J	ug/L		97	50 - 150
Toluene	0.500	0.444	J	ug/L		89	50 - 150
trans-1,2-Dichloroethylene	0.500	0.546		ug/L		109	50 - 150
trans-1,3-Dichloropropene	0.500	0.364	J	ug/L		73	50 - 150
Trichloroethylene (TCE)	0.500	0.468	J	ug/L		94	50 - 150
Bromoethane	0.500	0.475	J	ug/L		95	50 - 150
Trichlorofluoromethane (Freon 11)	0.500	0.443	J	ug/L		89	50 - 150
Trichlorotrifluoroethane	0.500	0.425	J	ug/L		85	50 - 150
Diisopropyl ether	0.500	0.508	J	ug/L		102	50 - 150
Vinyl Chloride (VC)	0.500	0.403		ug/L		81	50 - 150
Xylenes, Total	1.50	1.12		ug/L		75	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130
Toluene-d8 (Surr)	96		70 - 130

## Method: 524.2 - Volatile Organic Compounds (GC/MS SIM)

**Lab Sample ID: MB 380-21441/5**  
**Matrix: Water**  
**Analysis Batch: 21441**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			10/20/22 20:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		10/20/22 20:09	1
4-Bromofluorobenzene (Surr)	92		70 - 130		10/20/22 20:09	1
1,2-Dichloroethane-d4 (Surr)	113		70 - 130		10/20/22 20:09	1

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS SIM) (Continued)

**Lab Sample ID: LCS 380-21441/2**  
**Matrix: Water**  
**Analysis Batch: 21441**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tertiary Butyl Alcohol (TBA)	5.00	5.90		ug/L		118	70 - 130
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
Toluene-d8 (Surr)	101		70 - 130				
4-Bromofluorobenzene (Surr)	93		70 - 130				
1,2-Dichloroethane-d4 (Surr)	111		70 - 130				

**Lab Sample ID: LCSD 380-21441/3**  
**Matrix: Water**  
**Analysis Batch: 21441**

**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
Tertiary Butyl Alcohol (TBA)	5.00	5.90		ug/L		118	70 - 130	0	20
<b>LCSD LCSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Toluene-d8 (Surr)	101		70 - 130						
4-Bromofluorobenzene (Surr)	94		70 - 130						
1,2-Dichloroethane-d4 (Surr)	114		70 - 130						

**Lab Sample ID: MRL 380-21441/4**  
**Matrix: Water**  
**Analysis Batch: 21441**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Tertiary Butyl Alcohol (TBA)	2.00	2.56		ug/L		128	50 - 150
<b>MRL MRL</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
Toluene-d8 (Surr)	101		50 - 150				
4-Bromofluorobenzene (Surr)	93		50 - 150				
1,2-Dichloroethane-d4 (Surr)	115		50 - 150				

**Lab Sample ID: MB 380-22279/5**  
**Matrix: Water**  
**Analysis Batch: 22279**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tertiary Butyl Alcohol (TBA)	ND		2.0	ug/L			10/27/22 16:20	1
<b>MB MB</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Toluene-d8 (Surr)	97		70 - 130				10/27/22 16:20	1
4-Bromofluorobenzene (Surr)	94		70 - 130				10/27/22 16:20	1
1,2-Dichloroethane-d4 (Surr)	120		70 - 130				10/27/22 16:20	1

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 524.2 - Volatile Organic Compounds (GC/MS SIM) (Continued)

**Lab Sample ID: LCS 380-22279/2**  
**Matrix: Water**  
**Analysis Batch: 22279**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tertiary Butyl Alcohol (TBA)	5.00	5.35		ug/L		107	70 - 130
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
Toluene-d8 (Surr)	98		70 - 130				
4-Bromofluorobenzene (Surr)	94		70 - 130				
1,2-Dichloroethane-d4 (Surr)	114		70 - 130				

**Lab Sample ID: LCSD 380-22279/3**  
**Matrix: Water**  
**Analysis Batch: 22279**

**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
Tertiary Butyl Alcohol (TBA)	5.00	5.56		ug/L		111	70 - 130	4	20
<b>LCSD LCSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
Toluene-d8 (Surr)	98		70 - 130						
4-Bromofluorobenzene (Surr)	97		70 - 130						
1,2-Dichloroethane-d4 (Surr)	116		70 - 130						

**Lab Sample ID: MRL 380-22279/4**  
**Matrix: Water**  
**Analysis Batch: 22279**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Tertiary Butyl Alcohol (TBA)	2.00	2.44		ug/L		122	50 - 150
<b>MRL MRL</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
Toluene-d8 (Surr)	98		50 - 150				
4-Bromofluorobenzene (Surr)	98		50 - 150				
1,2-Dichloroethane-d4 (Surr)	118		50 - 150				

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

**Lab Sample ID: MB 380-21477/1-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
2,4'-DDE	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
2,4'-DDT	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
2,4-Dinitrotoluene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
2,6-Dinitrotoluene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
4,4'-DDD	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
4,4'-DDE	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
4,4'-DDT	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Acenaphthene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Acenaphthylene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1

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# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: MB 380-21477/1-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetochlor	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Alachlor	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
alpha-BHC	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
alpha-Chlordane	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Anthracene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 17:28	1
Atrazine	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Benz(a)anthracene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Benzo[a]pyrene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 17:28	1
Benzo[b]fluoranthene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 17:28	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Benzo[k]fluoranthene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 17:28	1
beta-BHC	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		10/21/22 07:31	10/24/22 17:28	1
Bromacil	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Butachlor	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Butylbenzylphthalate	ND		0.50	ug/L		10/21/22 07:31	10/24/22 17:28	1
Chlorobenzilate	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Chloroneb	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Chlorpyrifos	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Chrysene	ND		0.020	ug/L		10/21/22 07:31	10/24/22 17:28	1
delta-BHC	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		10/21/22 07:31	10/24/22 17:28	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Diclorvos (DDVP)	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Dieldrin	ND		0.20	ug/L		10/21/22 07:31	10/24/22 17:28	1
Diethylphthalate	ND		0.50	ug/L		10/21/22 07:31	10/24/22 17:28	1
Dimethylphthalate	ND		0.50	ug/L		10/21/22 07:31	10/24/22 17:28	1
Di-n-butyl phthalate	ND		0.99	ug/L		10/21/22 07:31	10/24/22 17:28	1
Di-n-octyl phthalate	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Endosulfan I (Alpha)	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Endosulfan II (Beta)	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Endosulfan sulfate	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Endrin	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Endrin aldehyde	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
EPTC	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Fluoranthene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Fluorene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
gamma-BHC (Lindane)	ND		0.040	ug/L		10/21/22 07:31	10/24/22 17:28	1
gamma-Chlordane	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Heptachlor	ND		0.040	ug/L		10/21/22 07:31	10/24/22 17:28	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Hexachlorobenzene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Isophorone	ND		0.50	ug/L		10/21/22 07:31	10/24/22 17:28	1
Malathion	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Methoxychlor	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Metolachlor	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1

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# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: MB 380-21477/1-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Metribuzin	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Molinate	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Naphthalene	ND		0.30	ug/L		10/21/22 07:31	10/24/22 17:28	1
Parathion	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Phenanthrene	ND		0.040	ug/L		10/21/22 07:31	10/24/22 17:28	1
Propachlor	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Pyrene	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Simazine	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Terbacil	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Terbutylazine	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
Thiobencarb	ND		0.20	ug/L		10/21/22 07:31	10/24/22 17:28	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		10/21/22 07:31	10/24/22 17:28	1
trans-Nonachlor	ND		0.050	ug/L		10/21/22 07:31	10/24/22 17:28	1
Trifluralin	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
1-Methylnaphthalene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1
2-Methylnaphthalene	ND		0.099	ug/L		10/21/22 07:31	10/24/22 17:28	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.898	T J	ug/L		2.33		10/21/22 07:31	10/24/22 17:28	1
Unknown	1.64	T J	ug/L		2.55		10/21/22 07:31	10/24/22 17:28	1
Unknown	0.936	T J	ug/L		2.92		10/21/22 07:31	10/24/22 17:28	1
9-Octadecenamide, (Z)-	0.904	T J N	ug/L		7.96	301-02-0	10/21/22 07:31	10/24/22 17:28	1
Squalene	0.764	T J N	ug/L		10.76	111-02-4	10/21/22 07:31	10/24/22 17:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	96		70 - 130	10/21/22 07:31	10/24/22 17:28	1
Perylene-d12	93		70 - 130	10/21/22 07:31	10/24/22 17:28	1
Triphenylphosphate	109		70 - 130	10/21/22 07:31	10/24/22 17:28	1

**Lab Sample ID: LCS 380-21477/3-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.99	1.92		ug/L		97	70 - 130
2,4'-DDE	1.99	2.06		ug/L		104	70 - 130
2,4'-DDT	1.99	2.07		ug/L		104	70 - 130
2,4-Dinitrotoluene	1.99	1.95		ug/L		98	70 - 130
2,6-Dinitrotoluene	1.99	1.90		ug/L		95	70 - 130
4,4'-DDD	1.99	2.03		ug/L		102	70 - 130
4,4'-DDE	1.99	2.08		ug/L		105	70 - 130
4,4'-DDT	1.99	2.05		ug/L		103	70 - 130
Acenaphthene	1.99	1.80		ug/L		91	70 - 130
Acenaphthylene	1.99	1.83		ug/L		92	70 - 130
Acetochlor	1.99	1.99		ug/L		100	70 - 130
Alachlor	1.99	1.99		ug/L		100	70 - 130
alpha-BHC	1.99	1.94		ug/L		97	70 - 130

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: LCS 380-21477/3-A**

**Matrix: Water**

**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 21477**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
alpha-Chlordane	1.99	1.81		ug/L		91	70 - 130
Anthracene	1.99	1.81		ug/L		91	70 - 130
Atrazine	1.99	2.32		ug/L		117	70 - 130
Benz(a)anthracene	1.99	2.03		ug/L		102	70 - 130
Benzo[a]pyrene	1.99	1.90		ug/L		95	70 - 130
Benzo[b]fluoranthene	1.99	1.92		ug/L		96	70 - 130
Benzo[g,h,i]perylene	1.99	1.59		ug/L		80	70 - 130
Benzo[k]fluoranthene	1.99	1.99		ug/L		100	70 - 130
beta-BHC	1.99	2.05		ug/L		103	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	1.81		ug/L		91	70 - 130
Bromacil	1.99	2.51		ug/L		126	70 - 130
Butachlor	1.99	2.08		ug/L		105	70 - 130
Butylbenzylphthalate	1.99	2.28		ug/L		115	70 - 130
Chlorobenzilate	1.99	2.32		ug/L		117	70 - 130
Chloroneb	1.99	1.92		ug/L		97	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	2.01		ug/L		101	70 - 130
Chlorpyrifos	1.99	2.13		ug/L		107	70 - 130
Chrysene	1.99	1.95		ug/L		98	70 - 130
delta-BHC	1.99	1.98		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.25		ug/L		113	70 - 130
Dibenz(a,h)anthracene	1.99	1.60		ug/L		81	70 - 130
Diclorvos (DDVP)	1.99	1.98		ug/L		99	70 - 130
Dieldrin	1.99	2.10		ug/L		106	70 - 130
Diethylphthalate	1.99	1.97		ug/L		99	70 - 130
Dimethylphthalate	1.99	1.96		ug/L		98	70 - 130
Di-n-butyl phthalate	3.98	4.10		ug/L		103	70 - 130
Di-n-octyl phthalate	1.99	1.54		ug/L		77	70 - 130
Endosulfan I (Alpha)	1.99	1.78		ug/L		90	70 - 130
Endosulfan II (Beta)	1.99	2.09		ug/L		105	70 - 130
Endosulfan sulfate	1.99	2.06		ug/L		104	70 - 130
Endrin	1.99	1.93		ug/L		97	70 - 130
Endrin aldehyde	1.99	2.24		ug/L		113	70 - 130
EPTC	1.99	1.76		ug/L		89	70 - 130
Fluoranthene	1.99	2.12		ug/L		107	70 - 130
Fluorene	1.99	1.91		ug/L		96	70 - 130
gamma-BHC (Lindane)	1.99	2.00		ug/L		100	70 - 130
gamma-Chlordane	1.99	1.81		ug/L		91	70 - 130
Heptachlor	1.99	1.79		ug/L		90	70 - 130
Heptachlor epoxide (isomer B)	1.99	1.87		ug/L		94	70 - 130
Hexachlorobenzene	1.99	1.84		ug/L		93	70 - 130
Hexachlorocyclopentadiene	1.99	1.90		ug/L		95	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	1.59		ug/L		80	70 - 130
Isophorone	1.99	1.70		ug/L		86	70 - 130
Malathion	1.99	2.11		ug/L		106	70 - 130
Methoxychlor	1.99	2.01		ug/L		101	70 - 130
Metolachlor	1.99	2.13		ug/L		107	70 - 130
Metribuzin	1.99	2.16		ug/L		109	70 - 130
Molinate	1.99	1.84		ug/L		93	70 - 130
Naphthalene	1.99	1.79		ug/L		90	70 - 130

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: LCS 380-21477/3-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Parathion	1.99	2.43		ug/L		122	70 - 130
Pendimethalin (Penoxaline)	1.99	2.03		ug/L		102	70 - 130
Phenanthrene	1.99	1.83		ug/L		92	70 - 130
Propachlor	1.99	2.01		ug/L		101	70 - 130
Pyrene	1.99	2.14		ug/L		108	70 - 130
Simazine	1.99	2.35		ug/L		118	70 - 130
Terbacil	1.99	2.34		ug/L		118	70 - 130
Terbutylazine	1.99	2.11		ug/L		106	70 - 130
Thiobencarb	1.99	1.98		ug/L		100	70 - 130
trans-Nonachlor	1.99	1.81		ug/L		91	70 - 130
Trifluralin	1.99	1.96		ug/L		99	70 - 130
1-Methylnaphthalene	1.99	1.81		ug/L		91	70 - 130
2-Methylnaphthalene	1.99	1.80		ug/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	92		70 - 130
Triphenylphosphate	112		70 - 130

**Lab Sample ID: LCSD 380-21477/4-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	1.98		ug/L		100	70 - 130	3	20
2,4'-DDE	1.99	2.14		ug/L		107	70 - 130	4	20
2,4'-DDT	1.99	2.15		ug/L		108	70 - 130	4	20
2,4-Dinitrotoluene	1.99	1.99		ug/L		100	70 - 130	2	20
2,6-Dinitrotoluene	1.99	1.93		ug/L		97	70 - 130	2	20
4,4'-DDD	1.99	2.13		ug/L		107	70 - 130	5	20
4,4'-DDE	1.99	2.11		ug/L		106	70 - 130	2	20
4,4'-DDT	1.99	2.10		ug/L		106	70 - 130	3	20
Acenaphthene	1.99	1.82		ug/L		92	70 - 130	1	20
Acenaphthylene	1.99	1.86		ug/L		93	70 - 130	2	20
Acetochlor	1.99	2.03		ug/L		102	70 - 130	2	20
Alachlor	1.99	2.02		ug/L		101	70 - 130	1	20
alpha-BHC	1.99	1.96		ug/L		99	70 - 130	1	20
alpha-Chlordane	1.99	1.85		ug/L		93	70 - 130	2	20
Anthracene	1.99	1.83		ug/L		92	70 - 130	1	20
Atrazine	1.99	2.36		ug/L		118	70 - 130	1	20
Benz(a)anthracene	1.99	2.11		ug/L		106	70 - 130	4	20
Benzo[a]pyrene	1.99	2.00		ug/L		101	70 - 130	5	20
Benzo[b]fluoranthene	1.99	2.04		ug/L		103	70 - 130	6	20
Benzo[g,h,i]perylene	1.99	1.68		ug/L		84	70 - 130	5	20
Benzo[k]fluoranthene	1.99	2.12		ug/L		106	70 - 130	6	20
beta-BHC	1.99	2.12		ug/L		106	70 - 130	3	20
Bis(2-ethylhexyl) phthalate	1.99	1.87		ug/L		94	70 - 130	4	20
Bromacil	1.99	2.61	*+	ug/L		131	70 - 130	4	20

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: LCSD 380-21477/4-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Butachlor	1.99	2.16		ug/L		109	70 - 130	4	20	
Butylbenzylphthalate	1.99	2.32		ug/L		117	70 - 130	2	20	
Chlorobenzilate	1.99	2.42		ug/L		122	70 - 130	4	20	
Chloroneb	1.99	1.97		ug/L		99	70 - 130	2	20	
Chlorothalonil (Draconil, Bravo)	1.99	2.02		ug/L		101	70 - 130	1	20	
Chlorpyrifos	1.99	2.18		ug/L		110	70 - 130	2	20	
Chrysene	1.99	2.07		ug/L		104	70 - 130	6	20	
delta-BHC	1.99	2.02		ug/L		101	70 - 130	2	20	
Di(2-ethylhexyl)adipate	1.99	2.26		ug/L		114	70 - 130	1	20	
Dibenz(a,h)anthracene	1.99	1.67		ug/L		84	70 - 130	4	20	
Diclorvos (DDVP)	1.99	2.04		ug/L		102	70 - 130	3	20	
Dieldrin	1.99	2.11		ug/L		106	70 - 130	0	20	
Diethylphthalate	1.99	1.99		ug/L		100	70 - 130	1	20	
Dimethylphthalate	1.99	2.01		ug/L		101	70 - 130	3	20	
Di-n-butyl phthalate	3.98	4.49		ug/L		113	70 - 130	9	20	
Di-n-octyl phthalate	1.99	1.61		ug/L		81	70 - 130	5	20	
Endosulfan I (Alpha)	1.99	1.83		ug/L		92	70 - 130	3	20	
Endosulfan II (Beta)	1.99	2.17		ug/L		109	70 - 130	4	20	
Endosulfan sulfate	1.99	2.11		ug/L		106	70 - 130	2	20	
Endrin	1.99	2.04		ug/L		102	70 - 130	5	20	
Endrin aldehyde	1.99	2.36		ug/L		118	70 - 130	5	20	
EPTC	1.99	1.81		ug/L		91	70 - 130	3	20	
Fluoranthene	1.99	2.16		ug/L		108	70 - 130	2	20	
Fluorene	1.99	1.94		ug/L		98	70 - 130	2	20	
gamma-BHC (Lindane)	1.99	2.04		ug/L		103	70 - 130	2	20	
gamma-Chlordane	1.99	1.85		ug/L		93	70 - 130	2	20	
Heptachlor	1.99	1.85		ug/L		93	70 - 130	3	20	
Heptachlor epoxide (isomer B)	1.99	1.91		ug/L		96	70 - 130	2	20	
Hexachlorobenzene	1.99	1.93		ug/L		97	70 - 130	5	20	
Hexachlorocyclopentadiene	1.99	1.94		ug/L		98	70 - 130	2	20	
Indeno[1,2,3-cd]pyrene	1.99	1.69		ug/L		85	70 - 130	6	20	
Isophorone	1.99	1.76		ug/L		88	70 - 130	3	20	
Malathion	1.99	2.16		ug/L		109	70 - 130	2	20	
Methoxychlor	1.99	2.10		ug/L		105	70 - 130	4	20	
Metolachlor	1.99	2.15		ug/L		108	70 - 130	1	20	
Metribuzin	1.99	2.25		ug/L		113	70 - 130	4	20	
Molinate	1.99	1.94		ug/L		97	70 - 130	5	20	
Naphthalene	1.99	1.80		ug/L		91	70 - 130	1	20	
Parathion	1.99	2.54		ug/L		128	70 - 130	4	20	
Pendimethalin (Penoxaline)	1.99	2.09		ug/L		105	70 - 130	3	20	
Phenanthrene	1.99	1.85		ug/L		93	70 - 130	1	20	
Propachlor	1.99	2.08		ug/L		104	70 - 130	3	20	
Pyrene	1.99	2.21		ug/L		111	70 - 130	3	20	
Simazine	1.99	2.45		ug/L		123	70 - 130	4	20	
Terbacil	1.99	2.46		ug/L		124	70 - 130	5	20	
Terbutylazine	1.99	2.24		ug/L		113	70 - 130	6	20	
Thiobencarb	1.99	2.04		ug/L		102	70 - 130	3	20	
trans-Nonachlor	1.99	1.86		ug/L		93	70 - 130	3	20	
Trifluralin	1.99	2.02		ug/L		101	70 - 130	3	20	

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# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: LCSD 380-21477/4-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	1.99	1.85		ug/L		93	70 - 130	3	20
2-Methylnaphthalene	1.99	1.86		ug/L		93	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	94		70 - 130
Triphenylphosphate	112		70 - 130

**Lab Sample ID: MRL 380-21477/2-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0995	0.108		ug/L		108	50 - 150
2,4'-DDE	0.0995	0.0829	J	ug/L		83	50 - 150
2,4'-DDT	0.0995	0.0741	J	ug/L		74	50 - 150
2,4-Dinitrotoluene	0.0995	0.103		ug/L		103	50 - 150
2,6-Dinitrotoluene	0.0995	0.0990	J	ug/L		99	50 - 150
4,4'-DDD	0.0995	0.0793	J	ug/L		80	50 - 150
4,4'-DDE	0.0995	0.0763	J	ug/L		77	50 - 150
4,4'-DDT	0.0995	0.110		ug/L		111	50 - 150
Acenaphthene	0.0995	0.0868	J	ug/L		87	50 - 150
Acenaphthylene	0.0995	0.0849	J	ug/L		85	50 - 150
Acetochlor	0.0498	0.0418	J	ug/L		84	50 - 150
Alachlor	0.0498	0.0557		ug/L		112	50 - 150
alpha-BHC	0.0995	0.0970	J	ug/L		98	50 - 150
alpha-Chlordane	0.0249	ND		ug/L		82	50 - 150
Anthracene	0.0199	0.0190	J	ug/L		95	50 - 150
Atrazine	0.0498	ND		ug/L		86	50 - 150
Benz(a)anthracene	0.0498	0.0659		ug/L		132	50 - 150
Benzo[a]pyrene	0.0199	0.0141	J	ug/L		71	50 - 150
Benzo[b]fluoranthene	0.0199	0.0147	J	ug/L		74	50 - 150
Benzo[g,h,i]perylene	0.0498	0.0430	J	ug/L		86	50 - 150
Benzo[k]fluoranthene	0.0199	ND		ug/L		77	50 - 150
beta-BHC	0.0995	0.0976	J	ug/L		98	50 - 150
Bis(2-ethylhexyl) phthalate	0.597	0.665		ug/L		111	50 - 150
Bromacil	0.0995	0.187	^3+	ug/L		188	50 - 150
Butachlor	0.0498	0.0516		ug/L		104	50 - 150
Butylbenzylphthalate	0.149	0.182	J	ug/L		122	50 - 150
Chlorobenzilate	0.0995	0.118		ug/L		118	50 - 150
Chloroneb	0.0995	0.0941	J	ug/L		95	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0995	0.139		ug/L		140	50 - 150
Chlorpyrifos	0.0498	0.0476	J	ug/L		96	50 - 150
Chrysene	0.0199	0.0168	J	ug/L		84	50 - 150
delta-BHC	0.0995	0.108		ug/L		108	50 - 150
Di(2-ethylhexyl)adipate	0.299	0.355	J	ug/L		119	50 - 150
Dibenz(a,h)anthracene	0.0498	0.0384	J	ug/L		77	50 - 150
Diclorvos (DDVP)	0.0498	0.0521		ug/L		105	50 - 150

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# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: MRL 380-21477/2-A**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Dieldrin	0.0995	0.114	J	ug/L		114	50 - 150
Diethylphthalate	0.149	0.158	J	ug/L		106	50 - 150
Dimethylphthalate	0.299	0.274	J	ug/L		92	50 - 150
Di-n-butyl phthalate	0.299	0.323	J	ug/L		108	49 - 243
Di-n-octyl phthalate	0.0995	0.0966	J	ug/L		97	50 - 150
Endosulfan I (Alpha)	0.0995	0.0829	J	ug/L		83	50 - 150
Endosulfan II (Beta)	0.0995	0.114		ug/L		115	50 - 150
Endosulfan sulfate	0.0995	0.103		ug/L		104	50 - 150
Endrin	0.0995	0.123		ug/L		124	50 - 150
Endrin aldehyde	0.0995	ND		ug/L		80	50 - 150
EPTC	0.0995	0.0842	J	ug/L		85	50 - 150
Fluoranthene	0.0498	0.0459	J	ug/L		92	50 - 150
Fluorene	0.0498	ND		ug/L		85	50 - 150
gamma-BHC (Lindane)	0.0398	0.0458		ug/L		115	50 - 150
gamma-Chlordane	0.0249	0.0214	J	ug/L		86	50 - 150
Heptachlor	0.0398	0.0557		ug/L		140	50 - 150
Heptachlor epoxide (isomer B)	0.0498	0.0415	J	ug/L		83	50 - 150
Hexachlorobenzene	0.0498	0.0443	J	ug/L		89	50 - 150
Hexachlorocyclopentadiene	0.0498	0.0398	J	ug/L		80	50 - 150
Indeno[1,2,3-cd]pyrene	0.0498	0.0402	J	ug/L		81	50 - 150
Isophorone	0.0995	0.0875	J	ug/L		88	50 - 150
Malathion	0.0995	0.0892	J	ug/L		90	50 - 150
Methoxychlor	0.0995	0.116		ug/L		117	50 - 150
Metolachlor	0.0498	0.0561		ug/L		113	50 - 150
Metribuzin	0.0498	0.0364	J	ug/L		73	50 - 150
Molinate	0.0995	0.0837	J	ug/L		84	50 - 150
Naphthalene	0.0995	0.0904	J	ug/L		91	50 - 150
Parathion	0.0995	0.0977	J	ug/L		98	50 - 150
Pendimethalin (Penoxaline)	0.0995	0.113		ug/L		113	50 - 150
Phenanthrene	0.0199	0.0198	J	ug/L		99	50 - 150
Propachlor	0.0498	0.0484	J	ug/L		97	50 - 150
Pyrene	0.0498	0.0452	J	ug/L		91	50 - 150
Simazine	0.0498	0.0543		ug/L		109	50 - 150
Terbacil	0.0995	0.126		ug/L		127	50 - 150
Terbutylazine	0.0995	0.0797	J	ug/L		80	50 - 150
Thiobencarb	0.0995	0.112	J	ug/L		113	50 - 150
trans-Nonachlor	0.0249	0.0267	J	ug/L		107	50 - 150
Trifluralin	0.0995	0.0761	J	ug/L		76	50 - 150
1-Methylnaphthalene	0.0995	0.0905	J	ug/L		91	50 - 150
2-Methylnaphthalene	0.0995	0.0869	J	ug/L		87	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	97		70 - 130
Perylene-d12	95		70 - 130
Triphenylphosphate	109		70 - 130

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24730-AK-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.97	1.94		ug/L		98	70 - 130
2,4'-DDE	ND		1.97	2.04		ug/L		104	70 - 130
2,4'-DDT	ND		1.97	2.06		ug/L		104	70 - 130
2,4-Dinitrotoluene	ND		1.97	2.09		ug/L		106	70 - 130
2,6-Dinitrotoluene	ND		1.97	1.99		ug/L		101	70 - 130
4,4'-DDD	ND		1.97	2.02		ug/L		103	70 - 130
4,4'-DDE	ND		1.97	2.01		ug/L		102	70 - 130
4,4'-DDT	ND		1.97	2.02		ug/L		103	70 - 130
Acenaphthene	ND		1.97	1.83		ug/L		93	70 - 130
Acenaphthylene	ND		1.97	1.92		ug/L		98	70 - 130
Acetochlor	ND		1.97	1.98		ug/L		101	70 - 130
Alachlor	ND		1.97	2.01		ug/L		102	70 - 130
alpha-BHC	ND		1.97	1.94		ug/L		99	70 - 130
alpha-Chlordane	ND		1.97	1.76		ug/L		89	70 - 130
Anthracene	ND		1.97	1.66		ug/L		84	70 - 130
Atrazine	ND		1.97	2.33		ug/L		118	70 - 130
Benz(a)anthracene	ND		1.97	2.02		ug/L		102	70 - 130
Benzo[a]pyrene	ND		1.97	1.94		ug/L		98	70 - 130
Benzo[b]fluoranthene	ND		1.97	1.98		ug/L		100	70 - 130
Benzo[g,h,i]perylene	ND		1.97	1.71		ug/L		87	70 - 130
Benzo[k]fluoranthene	ND		1.97	2.05		ug/L		104	70 - 130
beta-BHC	ND		1.97	2.08		ug/L		106	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.97	1.71		ug/L		87	70 - 130
Bromacil	ND	^3+ *+ F1	1.97	2.75	F1	ug/L		140	70 - 130
Butachlor	ND		1.97	2.09		ug/L		106	70 - 130
Butylbenzylphthalate	ND		1.97	2.24		ug/L		114	70 - 130
Chlorobenzilate	ND		1.97	2.38		ug/L		121	70 - 130
Chloroneb	ND		1.97	1.95		ug/L		99	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.97	2.00		ug/L		102	70 - 130
Chlorpyrifos	ND		1.97	2.16		ug/L		109	70 - 130
Chrysene	ND		1.97	2.00		ug/L		102	70 - 130
delta-BHC	ND		1.97	1.95		ug/L		99	70 - 130
Di(2-ethylhexyl)adipate	ND		1.97	2.14		ug/L		109	70 - 130
Dibenz(a,h)anthracene	ND		1.97	1.72		ug/L		87	70 - 130
Diclorvos (DDVP)	ND		1.97	2.02		ug/L		102	70 - 130
Dieldrin	ND		1.97	1.98		ug/L		100	70 - 130
Diethylphthalate	ND		1.97	2.02		ug/L		103	70 - 130
Dimethylphthalate	ND		1.97	1.90		ug/L		97	70 - 130
Di-n-butyl phthalate	ND		3.94	4.16		ug/L		102	70 - 130
Di-n-octyl phthalate	ND		1.97	1.52		ug/L		77	70 - 130
Endosulfan I (Alpha)	ND		1.97	1.79		ug/L		91	70 - 130
Endosulfan II (Beta)	ND		1.97	2.10		ug/L		107	70 - 130
Endosulfan sulfate	ND		1.97	1.97		ug/L		100	70 - 130
Endrin	ND		1.97	1.94		ug/L		98	70 - 130
Endrin aldehyde	ND		1.97	1.72		ug/L		87	70 - 130
EPTC	ND		1.97	1.85		ug/L		94	70 - 130
Fluoranthene	ND		1.97	2.12		ug/L		108	70 - 130
Fluorene	ND		1.97	1.93		ug/L		98	70 - 130

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24730-AK-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
gamma-BHC (Lindane)	ND		1.97	2.02		ug/L		102	70 - 130
gamma-Chlordane	ND		1.97	1.76		ug/L		89	70 - 130
Heptachlor	ND		1.97	1.83		ug/L		93	70 - 130
Heptachlor epoxide (isomer B)	ND		1.97	1.83		ug/L		93	70 - 130
Hexachlorobenzene	ND		1.97	1.90		ug/L		97	70 - 130
Hexachlorocyclopentadiene	ND		1.97	1.95		ug/L		99	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.97	1.73		ug/L		88	70 - 130
Isophorone	ND		1.97	1.75		ug/L		89	70 - 130
Malathion	ND		1.97	2.27		ug/L		115	70 - 130
Methoxychlor	ND		1.97	2.07		ug/L		105	70 - 130
Metolachlor	ND		1.97	2.17		ug/L		110	70 - 130
Metribuzin	ND		1.97	2.26		ug/L		115	70 - 130
Molinate	ND		1.97	2.02		ug/L		102	70 - 130
Naphthalene	ND		1.97	1.82		ug/L		92	70 - 130
Parathion	ND		1.97	2.57		ug/L		130	70 - 130
Pendimethalin (Penoxaline)	ND		1.97	2.14		ug/L		108	70 - 130
Phenanthrene	ND		1.97	1.84		ug/L		93	70 - 130
Propachlor	ND		1.97	2.10		ug/L		106	70 - 130
Pyrene	ND		1.97	2.16		ug/L		110	70 - 130
Simazine	ND		1.97	2.37		ug/L		120	70 - 130
Terbacil	ND		1.97	2.47		ug/L		125	70 - 130
Terbutylazine	ND		1.97	2.20		ug/L		112	70 - 130
Thiobencarb	ND		1.97	2.00		ug/L		102	70 - 130
trans-Nonachlor	ND		1.97	1.78		ug/L		91	70 - 130
Trifluralin	ND		1.97	2.15		ug/L		109	70 - 130
1-Methylnaphthalene	ND		1.97	1.84		ug/L		93	70 - 130
2-Methylnaphthalene	ND		1.97	1.86		ug/L		94	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Nitro-m-xylene	98		70 - 130
Perylene-d12	94		70 - 130
Triphenylphosphate	109		70 - 130

**Lab Sample ID: 380-24799-E-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2,4'-DDD	ND		ND		ug/L		NC	20
2,4'-DDE	ND		ND		ug/L		NC	20
2,4'-DDT	ND		ND		ug/L		NC	20
2,4-Dinitrotoluene	ND		ND		ug/L		NC	20
2,6-Dinitrotoluene	ND		ND		ug/L		NC	20
4,4'-DDD	ND		ND		ug/L		NC	20
4,4'-DDE	ND		ND		ug/L		NC	20
4,4'-DDT	ND		ND		ug/L		NC	20
Acenaphthene	ND		ND		ug/L		NC	20
Acenaphthylene	ND		ND		ug/L		NC	20

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# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24799-E-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Acetochlor	ND		ND		ug/L		NC	20
Alachlor	ND		ND		ug/L		NC	20
alpha-BHC	ND		ND		ug/L		NC	20
alpha-Chlordane	ND		ND		ug/L		NC	20
Anthracene	ND		ND		ug/L		NC	20
Atrazine	ND		ND		ug/L		NC	20
Benz(a)anthracene	ND		ND		ug/L		NC	20
Benzo[a]pyrene	ND		ND		ug/L		NC	20
Benzo[b]fluoranthene	ND		ND		ug/L		NC	20
Benzo[g,h,i]perylene	ND		ND		ug/L		NC	20
Benzo[k]fluoranthene	ND		ND		ug/L		NC	20
beta-BHC	ND		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Bromacil	ND	^3+ **	ND	*+	ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND		ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND		ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20
Dimethylphthalate	ND		ND		ug/L		NC	20
Di-n-butyl phthalate	ND		ND		ug/L		NC	20
Di-n-octyl phthalate	ND		ND		ug/L		NC	20
Endosulfan I (Alpha)	ND		ND		ug/L		NC	20
Endosulfan II (Beta)	ND		ND		ug/L		NC	20
Endosulfan sulfate	ND		ND		ug/L		NC	20
Endrin	ND		ND		ug/L		NC	20
Endrin aldehyde	ND		ND		ug/L		NC	20
EPTC	ND		ND		ug/L		NC	20
Fluoranthene	ND		ND		ug/L		NC	20
Fluorene	ND		ND		ug/L		NC	20
gamma-BHC (Lindane)	ND		ND		ug/L		NC	20
gamma-Chlordane	ND		ND		ug/L		NC	20
Heptachlor	ND		ND		ug/L		NC	20
Heptachlor epoxide (isomer B)	ND		ND		ug/L		NC	20
Hexachlorobenzene	ND		ND		ug/L		NC	20
Hexachlorocyclopentadiene	ND		ND		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	ND		ND		ug/L		NC	20
Isophorone	ND		ND		ug/L		NC	20
Malathion	ND		ND		ug/L		NC	20
Methoxychlor	ND		ND		ug/L		NC	20
Metolachlor	ND		ND		ug/L		NC	20

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# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24799-E-1-A DU**  
**Matrix: Water**  
**Analysis Batch: 21699**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 21477**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Metribuzin	ND		ND		ug/L		NC	20
Molinate	ND		ND		ug/L		NC	20
Naphthalene	ND		ND		ug/L		NC	20
Parathion	ND		ND		ug/L		NC	20
Pendimethalin (Penoxaline)	ND		ND		ug/L		NC	20
Phenanthrene	ND		ND		ug/L		NC	20
Propachlor	ND		ND		ug/L		NC	20
Pyrene	ND		ND		ug/L		NC	20
Simazine	ND		ND		ug/L		NC	20
Terbacil	ND		ND		ug/L		NC	20
Terbutylazine	ND		ND		ug/L		NC	20
Thiobencarb	ND		ND		ug/L		NC	20
Total Permethrin (mixed isomers)	ND		ND		ug/L		NC	20
trans-Nonachlor	ND		ND		ug/L		NC	20
Trifluralin	ND		ND		ug/L		NC	20
1-Methylnaphthalene	ND		ND		ug/L		NC	20
2-Methylnaphthalene	ND		ND		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	95		70 - 130
Perylene-d12	94		70 - 130
Triphenylphosphate	118		70 - 130

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MBL 380-21364/4-A**  
**Matrix: Water**  
**Analysis Batch: 21577**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 21364**

Analyte	MBL	MBL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
1,2,3-Trichloropropane	ND		0.040	ug/L		10/20/22 13:23	10/20/22 17:55	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		10/20/22 13:23	10/20/22 17:55	1
1,2-D bromoethane	ND		0.010	ug/L		10/20/22 13:23	10/20/22 17:55	1

Surrogate	MBL	MBL	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dibromopropane (Surr)	99		60 - 140	10/20/22 13:23	10/20/22 17:55	1

**Lab Sample ID: LCS 380-21364/3-A**  
**Matrix: Water**  
**Analysis Batch: 21577**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21364**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-D bromo-3-Chloropropane	0.200	0.199		ug/L		100	70 - 130
1,2-D bromoethane	0.200	0.227		ug/L		113	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dibromopropane (Surr)	113		60 - 140

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

**Lab Sample ID: MRL 380-21364/1-A**  
**Matrix: Water**  
**Analysis Batch: 21577**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21364**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.0400	0.0531		ug/L		133	60 - 140
<b>Surrogate</b>	<b>%Recovery</b>	<b>MRL</b>	<b>MRL Qualifier</b>	<b>Limits</b>			
1,2-Dibromopropane (Surr)	114			60 - 140			

**Lab Sample ID: MRL 380-21364/2-A**  
**Matrix: Water**  
**Analysis Batch: 21577**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21364**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.0500	0.0651		ug/L		130	60 - 140
1,2-D bromo-3-Chloropropane	0.0100	0.0137		ug/L		137	60 - 140
1,2-D bromoethane	0.0100	0.0110		ug/L		110	60 - 140
<b>Surrogate</b>	<b>%Recovery</b>	<b>MRL</b>	<b>MRL Qualifier</b>	<b>Limits</b>			
1,2-Dibromopropane (Surr)	111			60 - 140			

**Lab Sample ID: 380-23978-F-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 21577**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 21364**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	ND		1.25	1.29		ug/L		103	65 - 135
1,2-D bromo-3-Chloropropane	ND		0.250	0.256		ug/L		103	65 - 135
1,2-D bromoethane	ND		0.250	0.238		ug/L		95	65 - 135
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS</b>	<b>MS Qualifier</b>	<b>Limits</b>					
1,2-Dibromopropane (Surr)	111			60 - 140					

**Lab Sample ID: 380-23978-M-2-A DU**  
**Matrix: Water**  
**Analysis Batch: 21577**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 21364**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1,2,3-Trichloropropane	ND		ND		ug/L		NC	20
1,2-D bromo-3-Chloropropane	ND		ND		ug/L		6	20
1,2-D bromoethane	ND		ND		ug/L		NC	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>DU</b>	<b>DU Qualifier</b>	<b>Limits</b>				
1,2-Dibromopropane (Surr)	115			60 - 140				

**Lab Sample ID: MBL 380-22241/12-A**  
**Matrix: Water**  
**Analysis Batch: 22648**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22241**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.040	ug/L		10/27/22 12:27	10/27/22 22:33	1

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

**Lab Sample ID: MBL 380-22241/12-A**  
**Matrix: Water**  
**Analysis Batch: 22648**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22241**

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		10/27/22 12:27	10/27/22 22:33	1
1,2-D bromoethane	ND		0.010	ug/L		10/27/22 12:27	10/27/22 22:33	1
Surrogate	%Recovery	MBL Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	121		60 - 140			10/27/22 12:27	10/27/22 22:33	1

**Lab Sample ID: LCS 380-22241/11-A**  
**Matrix: Water**  
**Analysis Batch: 22648**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22241**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.200	0.223		ug/L		111	70 - 130
1,2-D bromo-3-Chloropropane	0.200	0.210		ug/L		105	70 - 130
1,2-D bromoethane	0.200	0.205		ug/L		103	70 - 130
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dibromopropane (Surr)	106		60 - 140				

**Lab Sample ID: MRL 380-22241/10-A**  
**Matrix: Water**  
**Analysis Batch: 22648**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22241**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.0500	0.0438		ug/L		88	60 - 140
1,2-D bromo-3-Chloropropane	0.0100	0.0130		ug/L		130	60 - 140
1,2-D bromoethane	0.0100	0.0106		ug/L		106	60 - 140
Surrogate	%Recovery	MRL Qualifier	Limits				
1,2-Dibromopropane (Surr)	113		60 - 140				

**Lab Sample ID: MRL 380-22241/9-A**  
**Matrix: Water**  
**Analysis Batch: 22648**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22241**

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.0400	0.0445		ug/L		111	60 - 140
Surrogate	%Recovery	MRL Qualifier	Limits				
1,2-Dibromopropane (Surr)	104		60 - 140				

**Lab Sample ID: 380-24862-K-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 22648**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 22241**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	ND		1.25	1.38		ug/L		110	65 - 135
1,2-D bromo-3-Chloropropane	ND		0.251	0.274		ug/L		109	65 - 135
1,2-D bromoethane	ND		0.251	0.235		ug/L		94	65 - 135

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 504.1 - EDB, DBCP and 1,2,3-TCP (GC) (Continued)

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dibromopropane (Surr)	105		60 - 140

Lab Sample ID: 380-25483-K-1-A DU  
Matrix: Water  
Analysis Batch: 22648

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 22241

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
1,2,3-Trichloropropane	ND		ND		ug/L		NC	20
1,2-D bromo-3-Chloropropane	ND		ND		ug/L		NC	20
1,2-D bromoethane	ND		ND		ug/L		NC	20

Surrogate	DU DU		Limits
	%Recovery	Qualifier	
1,2-Dibromopropane (Surr)	113		60 - 140

## Method: 505 - Organochlorine Pesticides/PCBs (GC)

Lab Sample ID: MB 380-21407/7-A  
Matrix: Water  
Analysis Batch: 22249

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 21407

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Alachlor	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
Aldrin	ND		0.0020	ug/L		10/20/22 13:52	10/20/22 19:10	1
Chlordane (n.o.s.)	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
Dieldrin	ND		0.0020	ug/L		10/20/22 13:52	10/20/22 19:10	1
Endrin	ND		0.0099	ug/L		10/20/22 13:52	10/20/22 19:10	1
gamma-BHC (Lindane)	ND		0.0099	ug/L		10/20/22 13:52	10/20/22 19:10	1
Heptachlor	ND		0.0099	ug/L		10/20/22 13:52	10/20/22 19:10	1
Heptachlor epoxide	ND		0.0099	ug/L		10/20/22 13:52	10/20/22 19:10	1
Methoxychlor	ND		0.050	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1016	ND		0.069	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1221	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1232	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1242	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1248	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1254	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
PCB-1260	ND		0.069	ug/L		10/20/22 13:52	10/20/22 19:10	1
Polychlorinated biphenyls, Total	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1
Toxaphene	ND		0.099	ug/L		10/20/22 13:52	10/20/22 19:10	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	79		70 - 130	10/20/22 13:52	10/20/22 19:10	1

Lab Sample ID: MRL 380-21407/2-A  
Matrix: Water  
Analysis Batch: 22249

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 21407

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Dieldrin	0.00200	0.00235		ug/L		118	50 - 150

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 505 - Organochlorine Pesticides/PCBs (GC) (Continued)

**Lab Sample ID: MRL 380-21407/2-A**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

<i>Surrogate</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>MRL Limits</i>
<i>Tetrachloro-m-xylene</i>	83		70 - 130

**Lab Sample ID: MRL 380-21407/3-A**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

<b>Analyte</b>	<b>Spike Added</b>	<b>MRL Result</b>	<b>MRL Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>
Alachlor	0.100	0.0928	J	ug/L		93	50 - 150
Aldrin	0.0100	0.0105		ug/L		105	50 - 150
Dieldrin	0.0100	0.00917		ug/L		92	50 - 150
Endrin	0.0100	0.0131		ug/L		131	50 - 150
gamma-BHC (Lindane)	0.0100	0.0121		ug/L		121	50 - 150
Heptachlor	0.0100	0.0119		ug/L		119	50 - 150
Heptachlor epoxide	0.0100	0.0126		ug/L		126	50 - 150
Methoxychlor	0.0500	0.0678		ug/L		136	50 - 150

<i>Surrogate</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>MRL Limits</i>
<i>Tetrachloro-m-xylene</i>	88		70 - 130

**Lab Sample ID: MRL 380-21407/4-A**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

<b>Analyte</b>	<b>Spike Added</b>	<b>MRL Result</b>	<b>MRL Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>
Toxaphene	0.100	0.108		ug/L		108	50 - 150

<i>Surrogate</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>MRL Limits</i>
<i>Tetrachloro-m-xylene</i>	94		70 - 130

**Lab Sample ID: MRL 380-21407/5-A**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

<b>Analyte</b>	<b>Spike Added</b>	<b>MRL Result</b>	<b>MRL Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>
Toxaphene	0.507	0.495		ug/L		98	50 - 150

<i>Surrogate</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>MRL Limits</i>
<i>Tetrachloro-m-xylene</i>	87		70 - 130

**Lab Sample ID: MRL 380-21407/6-A**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

<b>Analyte</b>	<b>Spike Added</b>	<b>MRL Result</b>	<b>MRL Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>
Chlordane (n.o.s.)	0.101	0.123		ug/L		122	50 - 150

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 505 - Organochlorine Pesticides/PCBs (GC) (Continued)

**Lab Sample ID: MRL 380-21407/6-A**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

<i>Surrogate</i>	<i>%Recovery</i>	<i>MRL Qualifier</i>	<i>MRL Limits</i>
<i>Tetrachloro-m-xylene</i>	91		70 - 130

**Lab Sample ID: 380-24762-B-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Alachlor	ND		0.997	0.852		ug/L		85	65 - 135
Aldrin	ND		0.0997	0.0941		ug/L		94	65 - 135
Dieldrin	ND		0.0997	0.0908		ug/L		91	65 - 135
Endrin	ND		0.0997	0.0876		ug/L		88	65 - 135
gamma-BHC (Lindane)	ND		0.0997	0.0815		ug/L		82	65 - 135
Heptachlor	ND		0.0997	0.0882		ug/L		88	65 - 135
Heptachlor epoxide	ND		0.0997	0.0867		ug/L		87	65 - 135
Methoxychlor	ND		0.499	0.494		ug/L		99	65 - 135
<i>Surrogate</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>MS Limits</i>						
<i>Tetrachloro-m-xylene</i>	90		70 - 130						

**Lab Sample ID: 380-24762-C-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chlordane (n.o.s.)	ND		0.499	0.492		ug/L		99	65 - 135
<i>Surrogate</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>MS Limits</i>						
<i>Tetrachloro-m-xylene</i>	90		70 - 130						

**Lab Sample ID: 380-24805-1 MS**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Alachlor	ND		0.199	0.173		ug/L		87	65 - 135
Aldrin	ND		0.0199	0.0189		ug/L		95	65 - 135
Dieldrin	0.0054		0.0199	0.0214		ug/L		80	65 - 135
Endrin	ND		0.0199	0.0202		ug/L		101	65 - 135
gamma-BHC (Lindane)	ND		0.0199	0.0187		ug/L		94	65 - 135
Heptachlor	ND		0.0199	0.0194		ug/L		97	65 - 135
Heptachlor epoxide	ND		0.0199	0.0204		ug/L		102	65 - 135
Methoxychlor	ND		0.0997	0.106		ug/L		106	65 - 135
<i>Surrogate</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>MS Limits</i>						
<i>Tetrachloro-m-xylene</i>	89		70 - 130						

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 505 - Organochlorine Pesticides/PCBs (GC) (Continued)

**Lab Sample ID: 380-24805-1 MS**  
**Matrix: Water**  
**Analysis Batch: 22249**

**Client Sample ID: AIEA GULCH WELLS PUMP 2 (331-202-TP072)**  
**Prep Type: Total/NA**  
**Prep Batch: 21407**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Toxaphene	ND		2.51	2.45		ug/L		98	65 - 135
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>MS Limits</b>						
Tetrachloro-m-xylene	83		70 - 130						

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 380-21137/4**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	mg/L			10/18/22 09:42	1
Nitrate Nitrite as N	ND		0.050	mg/L			10/18/22 09:42	1
Nitrite as N	ND		0.050	mg/L			10/18/22 09:42	1

**Lab Sample ID: MB 380-21137/41**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	mg/L			10/18/22 19:53	1
Nitrate Nitrite as N	ND		0.050	mg/L			10/18/22 19:53	1
Nitrite as N	ND		0.050	mg/L			10/18/22 19:53	1

**Lab Sample ID: LCS 380-21137/7**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.50	2.52		mg/L		101	90 - 110
Nitrate Nitrite as N	3.50	3.50		mg/L		100	90 - 110
Nitrite as N	1.00	0.981		mg/L		98	90 - 110

**Lab Sample ID: LCSD 380-21137/8**  
**Matrix: Water**  
**Analysis Batch: 21137**

**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
Nitrate as N	2.50	2.53		mg/L		101	90 - 110	1	20
Nitrate Nitrite as N	3.50	3.51		mg/L		100	90 - 110	0	20
Nitrite as N	1.00	0.984		mg/L		98	90 - 110	0	20

**Lab Sample ID: MRL 380-21137/42**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.0125	0.0129	J	mg/L		103	50 - 150

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MRL 380-21137/42**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	0.0250	0.0239	J	mg/L		96	50 - 150
Nitrite as N	0.0125	0.0110	J	mg/L		88	50 - 150

**Lab Sample ID: MRL 380-21137/5**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.0125	0.0104	J	mg/L		83	50 - 150
Nitrate Nitrite as N	0.0250	0.0200	J	mg/L		80	50 - 150
Nitrite as N	0.0125	0.00956	J	mg/L		76	50 - 150

**Lab Sample ID: MRL 380-21137/6**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.0500	0.0576		mg/L		115	50 - 150
Nitrate Nitrite as N	0.100	0.104		mg/L		104	50 - 150
Nitrite as N	0.0500	0.0465	J	mg/L		93	50 - 150

**Lab Sample ID: 380-24805-1 MS**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.49		2.50	3.03		mg/L		102	80 - 120
Nitrate Nitrite as N	0.49		3.50	3.89		mg/L		97	80 - 120
Nitrite as N	ND		1.00	0.858		mg/L		86	80 - 120

**Lab Sample ID: 380-24805-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 21137**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.49		2.50	3.03		mg/L		101	80 - 120	0	20
Nitrate Nitrite as N	0.49		3.50	3.88		mg/L		97	80 - 120	0	20
Nitrite as N	ND		1.00	0.853		mg/L		85	80 - 120	1	20

**Lab Sample ID: MB 380-21138/4**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	mg/L			10/18/22 09:42	1
Sulfate	ND		0.25	mg/L			10/18/22 09:42	1

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 380-21138/41**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	mg/L			10/18/22 19:53	1
Sulfate	ND		0.25	mg/L			10/18/22 19:53	1

**Lab Sample ID: LCS 380-21138/7**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	25.3		mg/L		101	90 - 110
Sulfate	50.0	51.6		mg/L		103	90 - 110

**Lab Sample ID: LCSD 380-21138/8**  
**Matrix: Water**  
**Analysis Batch: 21138**

**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
Chloride	25.0	25.4		mg/L		102	90 - 110	1	20
Sulfate	50.0	51.9		mg/L		104	90 - 110	1	20

**Lab Sample ID: MRL 380-21138/42**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.125	0.100	J	mg/L		80	50 - 150
Sulfate	0.250	0.229	J	mg/L		92	50 - 150

**Lab Sample ID: MRL 380-21138/5**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.125	0.105	J	mg/L		84	50 - 150
Sulfate	0.250	0.222	J	mg/L		89	50 - 150

**Lab Sample ID: MRL 380-21138/6**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.500	0.420	J	mg/L		84	50 - 150
Sulfate	1.00	0.893		mg/L		89	50 - 150

**Lab Sample ID: 380-24805-1 MS**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	71		25.0	94.3		mg/L		94	80 - 120
Sulfate	9.7		50.0	62.4		mg/L		105	80 - 120

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: 380-24805-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 21138**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	71		25.0	94.4		mg/L		94	80 - 120	0	20
Sulfate	9.7		50.0	62.5		mg/L		106	80 - 120	0	20

**Lab Sample ID: MB 380-21948/4**  
**Matrix: Water**  
**Analysis Batch: 21948**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	ND		5.0	ug/L			10/24/22 20:23	1

**Lab Sample ID: LCS 380-21948/5**  
**Matrix: Water**  
**Analysis Batch: 21948**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	100	100		ug/L		100	90 - 110

**Lab Sample ID: LCSD 380-21948/6**  
**Matrix: Water**  
**Analysis Batch: 21948**

**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
Bromide	100	100		ug/L		100	90 - 110	0	10

**Lab Sample ID: MRL 380-21948/3**  
**Matrix: Water**  
**Analysis Batch: 21948**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	5.00	4.94	J	ug/L		99	75 - 125

**Lab Sample ID: 380-25485-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 21948**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	5.5		50.0	56.1		ug/L		101	80 - 120

**Lab Sample ID: 380-25485-A-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 21948**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	5.5		50.0	56.9		ug/L		103	80 - 120	1	20

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 200.7 Rev 4.4 - Metals (ICP)

**Lab Sample ID: MB 380-21742/18**  
**Matrix: Water**  
**Analysis Batch: 21742**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		1.0	mg/L			10/24/22 13:45	1
Magnesium	ND		0.10	mg/L			10/24/22 13:45	1
Potassium	ND		1.0	mg/L			10/24/22 13:45	1
Sodium	ND		1.0	mg/L			10/24/22 13:45	1

**Lab Sample ID: LCS 380-21742/20**  
**Matrix: Water**  
**Analysis Batch: 21742**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	50.0	51.0		mg/L		102	85 - 115
Magnesium	20.0	20.2		mg/L		101	85 - 115
Potassium	20.0	20.0		mg/L		100	85 - 115
Sodium	50.0	50.5		mg/L		101	85 - 115

**Lab Sample ID: LCSD 380-21742/21**  
**Matrix: Water**  
**Analysis Batch: 21742**

**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
Calcium	50.0	50.9		mg/L		102	85 - 115	0	20
Magnesium	20.0	20.2		mg/L		101	85 - 115	0	20
Potassium	20.0	20.1		mg/L		101	85 - 115	1	20
Sodium	50.0	50.3		mg/L		101	85 - 115	0	20

**Lab Sample ID: LLCS 380-21742/19**  
**Matrix: Water**  
**Analysis Batch: 21742**

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1.00	1.05		mg/L		105	50 - 150
Magnesium	0.100	0.105		mg/L		105	50 - 150
Potassium	1.00	0.685	J	mg/L		68	50 - 150
Sodium	1.00	1.12		mg/L		112	50 - 150

**Lab Sample ID: 380-24710-C-39 MS**  
**Matrix: Water**  
**Analysis Batch: 21742**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	69		50.0	120		mg/L		101	70 - 130
Magnesium	25		20.0	45.0		mg/L		100	70 - 130
Potassium	4.6		20.0	26.6		mg/L		110	70 - 130
Sodium	92		50.0	138		mg/L		92	70 - 130

# QC Sample Results

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

Job ID: 380-24805-1

## Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Lab Sample ID: 380-24710-C-39 MSD**  
**Matrix: Water**  
**Analysis Batch: 21742**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	69		50.0	120		mg/L		100	70 - 130	0	20
Magnesium	25		20.0	45.1		mg/L		101	70 - 130	0	20
Potassium	4.6		20.0	26.4		mg/L		109	70 - 130	1	20
Sodium	92		50.0	139		mg/L		93	70 - 130	0	20

## Method: 200.8 - Metals (ICP/MS)

**Lab Sample ID: MB 380-21413/1-A**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Arsenic	ND		1.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Beryllium	ND		1.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Cadmium	ND		0.50	ug/L		10/20/22 14:15	10/21/22 14:38	1
Chromium	ND		1.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Copper	ND		2.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Lead	ND		0.50	ug/L		10/20/22 14:15	10/21/22 14:38	1
Nickel	ND		5.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Selenium	ND		5.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Silver	ND		0.50	ug/L		10/20/22 14:15	10/21/22 14:38	1
Thallium	ND		1.0	ug/L		10/20/22 14:15	10/21/22 14:38	1
Zinc	ND		20	ug/L		10/20/22 14:15	10/21/22 14:38	1

**Lab Sample ID: LCS 380-21413/3-A**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	50.0	52.5		ug/L		105	85 - 115
Arsenic	50.0	50.6		ug/L		101	85 - 115
Beryllium	25.0	25.3		ug/L		101	85 - 115
Cadmium	25.0	25.7		ug/L		103	85 - 115
Chromium	50.0	51.9		ug/L		104	85 - 115
Copper	50.0	52.2		ug/L		104	85 - 115
Lead	50.0	52.5		ug/L		105	85 - 115
Nickel	50.0	51.0		ug/L		102	85 - 115
Selenium	50.0	53.5		ug/L		107	85 - 115
Silver	25.0	22.0		ug/L		88	85 - 115
Thallium	50.0	52.0		ug/L		104	85 - 115
Zinc	50.0	51.7		ug/L		103	85 - 115

**Lab Sample ID: LCSD 380-21413/4-A**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	50.0	51.9		ug/L		104	85 - 115	1	20

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCSD 380-21413/4-A**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	50.0	51.6		ug/L		103	85 - 115	2	20
Beryllium	25.0	24.9		ug/L		100	85 - 115	2	20
Cadmium	25.0	25.8		ug/L		103	85 - 115	0	20
Chromium	50.0	52.9		ug/L		106	85 - 115	2	20
Copper	50.0	53.0		ug/L		106	85 - 115	2	20
Lead	50.0	52.9		ug/L		106	85 - 115	1	20
Nickel	50.0	51.5		ug/L		103	85 - 115	1	20
Selenium	50.0	54.2		ug/L		108	85 - 115	1	20
Silver	25.0	22.7		ug/L		91	85 - 115	3	20
Thallium	50.0	51.8		ug/L		104	85 - 115	0	20
Zinc	50.0	52.4		ug/L		105	85 - 115	1	20

**Lab Sample ID: LLCS 380-21413/2-A**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	1.00	0.945	J	ug/L		95	50 - 150		
Arsenic	1.00	1.02		ug/L		102	50 - 150		
Beryllium	1.00	0.935	J	ug/L		94	50 - 150		
Cadmium	0.500	0.481	J	ug/L		96	50 - 150		
Chromium	1.00	1.04		ug/L		104	50 - 150		
Copper	2.00	2.03		ug/L		101	50 - 150		
Lead	0.500	0.488	J	ug/L		98	50 - 150		
Nickel	5.00	4.75	J	ug/L		95	50 - 150		
Selenium	5.00	4.98	J	ug/L		100	50 - 150		
Silver	0.500	0.405	J	ug/L		81	50 - 150		
Thallium	1.00	0.977	J	ug/L		98	50 - 150		
Zinc	20.0	19.8	J	ug/L		99	50 - 150		

**Lab Sample ID: 380-24931-Q-1-A MSD**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		50.0	53.5		ug/L		107	70 - 130	1	20
Arsenic	2.5		50.0	55.1		ug/L		105	70 - 130	1	20
Beryllium	ND		25.0	26.6		ug/L		106	70 - 130	2	20
Cadmium	ND		25.0	25.6		ug/L		102	70 - 130	0	20
Chromium	12		50.0	61.3		ug/L		98	70 - 130	0	20
Copper	ND		50.0	49.6		ug/L		98	70 - 130	1	20
Lead	ND		50.0	51.4		ug/L		103	70 - 130	1	20
Nickel	ND		50.0	53.1		ug/L		98	70 - 130	2	20
Selenium	8.4		50.0	62.1		ug/L		107	70 - 130	2	20
Silver	ND		25.0	20.8		ug/L		82	70 - 130	0	20
Thallium	ND		50.0	51.9		ug/L		104	70 - 130	4	20
Zinc	ND		50.0	54.1		ug/L		108	70 - 130	1	20

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: 200.8 - Metals (ICP/MS) (Continued)

**Lab Sample ID: 380-24931-AK-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 21591**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21413**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		50.0	53.8		ug/L		108	70 - 130
Arsenic	2.5		50.0	54.5		ug/L		104	70 - 130
Beryllium	ND		25.0	26.1		ug/L		104	70 - 130
Cadmium	ND		25.0	25.5		ug/L		102	70 - 130
Chromium	12		50.0	61.3		ug/L		98	70 - 130
Copper	ND		50.0	49.0		ug/L		97	70 - 130
Lead	ND		50.0	50.7		ug/L		101	70 - 130
Nickel	ND		50.0	52.3		ug/L		96	70 - 130
Selenium	8.4		50.0	61.1		ug/L		105	70 - 130
Silver	ND		25.0	20.8		ug/L		83	70 - 130
Thallium	ND		50.0	49.8		ug/L		100	70 - 130
Zinc	ND		50.0	53.6		ug/L		107	70 - 130

## Method: 245.1 - Mercury (CVAA)

**Lab Sample ID: MB 810-37635/1-A**  
**Matrix: Water**  
**Analysis Batch: 37693**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 37635**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.10	ug/L		11/07/22 10:10	11/07/22 15:03	1

**Lab Sample ID: LCS 810-37635/3-A**  
**Matrix: Water**  
**Analysis Batch: 37693**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 37635**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.00	1.10		ug/L		110	85 - 115

**Lab Sample ID: LLCS 810-37635/2-A**  
**Matrix: Water**  
**Analysis Batch: 37693**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 37635**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.100	0.137		ug/L		137	50 - 150

**Lab Sample ID: 380-24931-AX-1-B MSD**  
**Matrix: Water**  
**Analysis Batch: 37693**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 37635**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		1.00	1.03		ug/L		103	70 - 130	8	20

**Lab Sample ID: 380-24931-BR-1-B MS**  
**Matrix: Water**  
**Analysis Batch: 37693**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 37635**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		1.00	1.11		ug/L		111	70 - 130

# QC Sample Results

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

Job ID: 380-24805-1

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 380-22035/7**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
A kalinity	ND		2.0	mg/L			10/25/22 21:17	1
Bicarbonate Alkalinity as CaCO3	2.44	B	2.0	mg/L			10/25/22 21:17	1
Carbonate Alkalinity as CaCO3	ND		2.0	mg/L			10/25/22 21:17	1

**Lab Sample ID: LCS 380-22035/5**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity	100	80.9	*-	mg/L		81	90 - 110

**Lab Sample ID: LCSD 380-22035/22**  
**Matrix: Water**  
**Analysis Batch: 22035**

**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
A kalinity	100	99.0		mg/L		99	90 - 110	20	20

**Lab Sample ID: LLCS 380-22035/6**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity	20.0	17.1	*-	mg/L		85	90 - 110

**Lab Sample ID: MRL 380-22035/8**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity	2.00	2.68		mg/L		134	50 - 150

**Lab Sample ID: 380-24662-C-1 MS**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
A kalinity			100	142		mg/L			

**Lab Sample ID: 380-24662-C-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
A kalinity			100	143		mg/L					

# QC Sample Results

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

Job ID: 380-24805-1

## Method: SM 2320B - Alkalinity (Continued)

**Lab Sample ID: 380-24662-C-1 DU**  
**Matrix: Water**  
**Analysis Batch: 22035**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity			119	*-	mg/L			
Bicarbonate Alkalinity as CaCO3			119	B	mg/L			
Carbonate Alkalinity as CaCO3			ND		mg/L			

## Method: SM 2510B - Conductivity, Specific Conductance

**Lab Sample ID: MB 380-22036/7**  
**Matrix: Water**  
**Analysis Batch: 22036**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		2.0	umhos/cm			10/25/22 21:17	1

**Lab Sample ID: LCS 380-22036/10**  
**Matrix: Water**  
**Analysis Batch: 22036**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	1000	1000		umhos/cm		100	90 - 110

**Lab Sample ID: LCSD 380-22036/22**  
**Matrix: Water**  
**Analysis Batch: 22036**

**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
Specific Conductance	1000	996		umhos/cm		100	90 - 110	0	10

**Lab Sample ID: MRL 380-22036/8**  
**Matrix: Water**  
**Analysis Batch: 22036**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	2.00	1.90	J	umhos/cm		95	50 - 150

**Lab Sample ID: 380-24662-C-1 DU**  
**Matrix: Water**  
**Analysis Batch: 22036**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	970		966		umhos/cm		0.09	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 380-21094/1**  
**Matrix: Water**  
**Analysis Batch: 21094**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	mg/L			10/18/22 16:10	1

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# QC Sample Results

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

Job ID: 380-24805-1

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: HLCS 380-21094/5**  
**Matrix: Water**  
**Analysis Batch: 21094**

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

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	700	700		mg/L		100	80 - 114

**Lab Sample ID: LCS 380-21094/4**  
**Matrix: Water**  
**Analysis Batch: 21094**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	175	168		mg/L		96	80 - 114

**Lab Sample ID: MRL 380-21094/2**  
**Matrix: Water**  
**Analysis Batch: 21094**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	10.0	10.0		mg/L		100	50 - 150

**Lab Sample ID: MRL 380-21094/3**  
**Matrix: Water**  
**Analysis Batch: 21094**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	10.0	11.0		mg/L		110	50 - 150

**Lab Sample ID: 380-24662-G-1 DU**  
**Matrix: Water**  
**Analysis Batch: 21094**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	620		610		mg/L		2	10

## Method: SM 4500 F C - Fluoride

**Lab Sample ID: MB 380-22034/40**  
**Matrix: Water**  
**Analysis Batch: 22034**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.050	mg/L			10/25/22 23:28	1

**Lab Sample ID: MB 380-22034/6**  
**Matrix: Water**  
**Analysis Batch: 22034**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.050	mg/L			10/25/22 20:48	1

# QC Sample Results

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

Job ID: 380-24805-1

## Method: SM 4500 F C - Fluoride (Continued)

**Lab Sample ID: LCS 380-22034/42**  
**Matrix: Water**  
**Analysis Batch: 22034**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	1.00	1.07		mg/L		107	90 - 110

**Lab Sample ID: LCS 380-22034/8**  
**Matrix: Water**  
**Analysis Batch: 22034**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	1.00	1.08		mg/L		108	90 - 110

**Lab Sample ID: LCSD 380-22034/43**  
**Matrix: Water**  
**Analysis Batch: 22034**

**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
Fluoride	1.00	1.04		mg/L					

**Lab Sample ID: LCSD 380-22034/9**  
**Matrix: Water**  
**Analysis Batch: 22034**

**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
Fluoride	1.00	1.02		mg/L		102	90 - 110	6	10

**Lab Sample ID: MRL 380-22034/41**  
**Matrix: Water**  
**Analysis Batch: 22034**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.0500	0.0476	J	mg/L		95	50 - 150

**Lab Sample ID: MRL 380-22034/7**  
**Matrix: Water**  
**Analysis Batch: 22034**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.0500	0.0506		mg/L		101	50 - 150

## Method: SM 4500 H+ B - pH

**Lab Sample ID: MB 380-22037/9**  
**Matrix: Water**  
**Analysis Batch: 22037**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.3			SU			10/25/22 21:17	1

# QC Sample Results

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

Job ID: 380-24805-1

## Method: SM 4500 H+ B - pH (Continued)

**Lab Sample ID: LCS 380-22037/10**  
**Matrix: Water**  
**Analysis Batch: 22037**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	6.00	5.9		SU		98	98 - 102

**Lab Sample ID: LCSD 380-22037/23**  
**Matrix: Water**  
**Analysis Batch: 22037**

**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
pH	6.00	5.9		SU		98	98 - 102	0	2

**Lab Sample ID: 380-24662-C-1 DU**  
**Matrix: Water**  
**Analysis Batch: 22037**

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.9		8.0		SU		0.9	2

## Method: SM 4500 S2 D - Sulfide, Total

**Lab Sample ID: MB 380-21120/1**  
**Matrix: Water**  
**Analysis Batch: 21120**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.050	mg/L			10/18/22 20:31	1

**Lab Sample ID: LCS 380-21120/4**  
**Matrix: Water**  
**Analysis Batch: 21120**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	0.250	0.240		mg/L		96	90 - 110

**Lab Sample ID: LCSD 380-21120/11**  
**Matrix: Water**  
**Analysis Batch: 21120**

**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
Sulfide	0.250	0.235		mg/L		94	90 - 110	2	20

**Lab Sample ID: MRL 380-21120/10**  
**Matrix: Water**  
**Analysis Batch: 21120**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	0.0500	0.0530		mg/L		106	50 - 150

# QC Sample Results

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

Job ID: 380-24805-1

## Method: SM 4500 S2 D - Sulfide, Total (Continued)

**Lab Sample ID: MRL 380-21120/2**  
**Matrix: Water**  
**Analysis Batch: 21120**

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	0.0500	0.0560		mg/L		112	50 - 150

**Lab Sample ID: 810-41254-AD-1 MS**  
**Matrix: Water**  
**Analysis Batch: 21120**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	ND		0.250	0.205		mg/L		82	80 - 120

**Lab Sample ID: 810-41254-AD-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 21120**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	ND		0.250	0.205		mg/L		82	80 - 120	0	20

## Method: 625 Acid/Base/PAH + TICs - EPA 625 Base/Neutral and Acid Organics i

**Lab Sample ID: 100921-B1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-40006**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: O-40006\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,4,5-Trichlorophenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,4,6-Trichlorophenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,4-Dichlorophenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,4-Dinitrophenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,6-Dichlorophenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,6-Di-tert-butyl-4-methylphenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2,6-Di-tert-butylphenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Chloronaphthalene	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Chlorophenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Methyl-4,6-dinitrophenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Methylphenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Nitroaniline	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
2-Nitrophenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
3+4-Methylphenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
3-Nitroaniline	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
4-Bromophenylphenyl ether	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
4-Chloro-3-methylphenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
4-Chloroaniline	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
4-Chlorophenylphenyl ether	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
4-Nitroaniline	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
4-Nitrophenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1

Eurofins Eaton Monrovia



# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 100921-B1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-40006**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: O-40006\_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6-tert-butyl-2,4-dimethylphenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Acenaphthene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Acenaphthylene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Aniline	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Anthracene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzidine	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzoic Acid	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
Benzyl Alcohol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
Biphenyl	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Bis(2-Chloroethoxy) methane	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Bis(2-Chloroethyl) ether	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Bis(2-Chloroisopropyl) ether	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Chrysene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Dibenzo[a,i]pyrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Dibenzofuran	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Dibenzothiophene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Fluoranthene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Fluorene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Hexachloroethane	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Naphthalene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Nitrobenzene	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
N-Nitrosodi-n-propylamine	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
N-Nitrosodiphenylamine	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Pentachlorophenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Perylene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Phenanthrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1
Phenol	ND		0.2	0.1	µg/L		10/18/22 00:00	11/13/22 18:11	1
p-tert-Butylphenol	ND		0.1	0.05	µg/L		10/18/22 00:00	11/13/22 18:11	1
Pyrene	ND		0.005	0.001	µg/L		10/18/22 00:00	11/13/22 18:11	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(2,4,6-Tribromophenol)	73		30 - 130	10/18/22 00:00	11/13/22 18:11	1
(d10-Acenaphthene)	92		27 - 133	10/18/22 00:00	11/13/22 18:11	1
(d10-Phenanthrene)	92		43 - 129	10/18/22 00:00	11/13/22 18:11	1
(d12-Chrysene)	82		52 - 144	10/18/22 00:00	11/13/22 18:11	1
(d12-Perylene)	84		36 - 161	10/18/22 00:00	11/13/22 18:11	1
(d5-Phenol)	115		0 - 130	10/18/22 00:00	11/13/22 18:11	1
(d8-Naphthalene)	91		25 - 125	10/18/22 00:00	11/13/22 18:11	1

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 100921-BS1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-40006**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: O-40006\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.404		µg/L		81	31 - 128
1-Methylphenanthrene	0.5	0.46		µg/L		92	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.425		µg/L		85	55 - 122
2,4,5-Trichlorophenol	1	0.756		µg/L		76	30 - 130
2,4,6-Trichlorophenol	1	0.778		µg/L		78	30 - 130
2,4-Dichlorophenol	1	0.787		µg/L		79	51 - 117
2,4-Dinitrophenol	1	0.495		µg/L		50	0 - 152
2,6-Dichlorophenol	1	0.783		µg/L		78	30 - 130
2,6-Dimethylnaphthalene	0.5	0.416		µg/L		83	48 - 120
2,6-Di-tert-butyl-4-methylphenol	1	0.626		µg/L		63	50 - 150
2,6-Di-tert-butylphenol	1	0.688		µg/L		69	50 - 150
2-Chloronaphthalene	1	0.827		µg/L		83	53 - 130
2-Chlorophenol	1	0.794		µg/L		79	41 - 120
2-Methyl-4,6-dinitrophenol	1	0.706		µg/L		71	0 - 141
2-Methylnaphthalene	1.5	1.29		µg/L		86	47 - 130
2-Methylphenol	1	0.898		µg/L		90	40 - 117
2-Nitroaniline	1	0.824		µg/L		82	69 - 114
2-Nitrophenol	1	0.591		µg/L		59	40 - 117
3+4-Methylphenol	1	0.804		µg/L		80	0 - 130
3-Nitroaniline	1	0.735		µg/L		74	23 - 137
4-Bromophenylphenyl ether	1	0.931		µg/L		93	61 - 132
4-Chloro-3-methylphenol	1	0.716		µg/L		72	51 - 128
4-Chloroaniline	1	1.18		µg/L		118	50 - 150
4-Chlorophenylphenyl ether	1	0.921		µg/L		92	63 - 130
4-Nitroaniline	1	1.06		µg/L		106	10 - 159
4-Nitrophenol	1	0.423		µg/L		42	10 - 164
6-tert-butyl-2,4-dimethylphenol	1	0.68		µg/L		68	50 - 150
Acenaphthene	1.5	1.34		µg/L		89	53 - 131
Acenaphthylene	1.5	1.37		µg/L		91	43 - 140
Aniline	1	1.06		µg/L		106	50 - 150
Anthracene	1.5	1.47		µg/L		98	58 - 135
Benz[a]anthracene	1.5	1.53		µg/L		102	55 - 145
Benzo[a]pyrene	1.5	1.45		µg/L		97	51 - 143
Benzo[b]fluoranthene	1.5	1.51		µg/L		101	46 - 165
Benzo[e]pyrene	0.5	0.469		µg/L		94	42 - 152
Benzo[g,h,i]perylene	1.5	1.54		µg/L		103	63 - 133
Benzo[k]fluoranthene	1.5	1.41		µg/L		94	56 - 145
Benzyl Alcohol	1	0.816		µg/L		82	43 - 148
Biphenyl	0.5	0.434		µg/L		87	56 - 119
Bis(2-Chloroethoxy) methane	1	0.875		µg/L		88	66 - 122
Bis(2-Chloroethyl) ether	1	0.802		µg/L		80	43 - 127
Bis(2-Chloroisopropyl) ether	2	1.63		µg/L		81	49 - 128
Chrysene	1.5	1.46		µg/L		97	56 - 141
Dibenz[a,h]anthracene	1.5	1.53		µg/L		102	55 - 150
Dibenzo[a,l]pyrene	0.25	0.171		µg/L		68	50 - 150
Dibenzofuran	1	0.89		µg/L		89	50 - 150
Dibenzothiophene	0.5	0.457		µg/L		91	75 - 113
Disalicylidenepropanediamine	25	20.7		µg/L		83	50 - 150

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 100921-BS1**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-40006**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: O-40006\_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoranthene	1.5	1.59		µg/L		106	60 - 146
Fluorene	1.5	1.42		µg/L		95	58 - 131
Hexachloroethane	1	0.928		µg/L		93	27 - 130
Indeno[1,2,3-cd]pyrene	1.5	1.59		µg/L		106	50 - 151
Naphthalene	1.5	1.23		µg/L		82	41 - 126
Nitrobenzene	1	0.845		µg/L		85	54 - 111
N-Nitrosodi-n-propylamine	1	0.775		µg/L		77	61 - 152
N-Nitrosodiphenylamine	1	0.81		µg/L		81	49 - 142
Pentachlorophenol	1	0.525		µg/L		52	36 - 111
Perylene	0.5	0.476		µg/L		95	48 - 141
Phenanthrene	1.5	1.45		µg/L		97	67 - 127
Phenol	1	0.779		µg/L		78	29 - 114
p-tert-Butylphenol	1	0.798		µg/L		80	50 - 150
Pyrene	1.5	1.6		µg/L		107	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
(2,4,6-Tribromophenol)	79		30 - 130
(d10-Acenaphthene)	85		27 - 133
(d10-Phenanthrene)	91		43 - 129
(d12-Chrysene)	91		52 - 144
(d12-Perylene)	92		36 - 161
(d5-Phenol)	78		0 - 130
(d8-Naphthalene)	78		25 - 125

**Lab Sample ID: 100921-BS2**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-40006**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: O-40006\_P**

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.383		µg/L		77	31 - 128	5	30
1-Methylphenanthrene	0.5	0.465		µg/L		93	66 - 127	1	30
2,3,5-Trimethylnaphthalene	0.5	0.366		µg/L		73	55 - 122	15	30
2,4,5-Trichlorophenol	1	0.64		µg/L		64	30 - 130	17	30
2,4,6-Trichlorophenol	1	0.703		µg/L		70	30 - 130	11	30
2,4-Dichlorophenol	1	0.649		µg/L		65	51 - 117	19	30
2,4-Dinitrophenol	1	0.533		µg/L		53	0 - 152	6	30
2,6-Dichlorophenol	1	0.676		µg/L		68	30 - 130	14	30
2,6-Dimethylnaphthalene	0.5	0.399		µg/L		80	48 - 120	4	30
2,6-Di-tert-butyl-4-methylphenol	1	0.513		µg/L		51	50 - 150	21	30
2,6-Di-tert-butylphenol	1	0.598		µg/L		60	50 - 150	14	30
2-Chloronaphthalene	1	0.774		µg/L		77	53 - 130	8	30
2-Chlorophenol	1	0.629		µg/L		63	41 - 120	23	30
2-Methyl-4,6-dinitrophenol	1	0.743		µg/L		74	0 - 141	4	30
2-Methylnaphthalene	1.5	1.15		µg/L		77	47 - 130	11	30
2-Methylphenol	1	0.769		µg/L		77	40 - 117	16	30
2-Nitroaniline	1	0.815		µg/L		81	69 - 114	0	30
2-Nitrophenol	1	0.528		µg/L		53	40 - 117	11	30
3+4-Methylphenol	1	0.642		µg/L		64	0 - 130	22	30

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

**Lab Sample ID: 100921-BS2**  
**Matrix: BlankMatrix**  
**Analysis Batch: O-40006**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: O-40006\_P**

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
3-Nitroaniline	1	0.63		µg/L		63	23 - 137	16	30	
4-Bromophenylphenyl ether	1	0.917		µg/L		92	61 - 132	1	30	
4-Chloro-3-methylphenol	1	0.673		µg/L		67	51 - 128	7	30	
4-Chloroaniline	1	0.989		µg/L		99	50 - 150	18	30	
4-Chlorophenylphenyl ether	1	0.788		µg/L		79	63 - 130	15	30	
4-Nitroaniline	1	1.06		µg/L		106	10 - 159	0	30	
4-Nitrophenol	1	0.375		µg/L		38	10 - 164	10	30	
6-tert-butyl-2,4-dimethylphenol	1	0.671		µg/L		67	50 - 150	1	30	
Acenaphthene	1.5	1.13		µg/L		75	53 - 131	17	30	
Acenaphthylene	1.5	1.17		µg/L		78	43 - 140	15	30	
Aniline	1	0.889		µg/L		89	50 - 150	17	30	
Anthracene	1.5	1.52		µg/L		101	58 - 135	3	30	
Benz[a]anthracene	1.5	1.55		µg/L		103	55 - 145	1	30	
Benzo[a]pyrene	1.5	1.53		µg/L		102	51 - 143	5	30	
Benzo[b]fluoranthene	1.5	1.53		µg/L		102	46 - 165	1	30	
Benzo[e]pyrene	0.5	0.487		µg/L		97	42 - 152	3	30	
Benzo[g,h,i]perylene	1.5	1.57		µg/L		105	63 - 133	2	30	
Benzo[k]fluoranthene	1.5	1.42		µg/L		95	56 - 145	1	30	
Benzyl Alcohol	1	0.625		µg/L		62	43 - 148	28	30	
Biphenyl	0.5	0.418		µg/L		84	56 - 119	4	30	
Bis(2-Chloroethoxy) methane	1	0.723		µg/L		72	66 - 122	20	30	
Bis(2-Chloroethyl) ether	1	0.611		µg/L		61	43 - 127	27	30	
Bis(2-Chloroisopropyl) ether	2	1.24		µg/L		62	49 - 128	28	30	
Chrysene	1.5	1.46		µg/L		97	56 - 141	0	30	
Dibenz[a,h]anthracene	1.5	1.58		µg/L		105	55 - 150	3	30	
Dibenzo[a,l]pyrene	0.25	0.185		µg/L		74	50 - 150	8	30	
Dibenzofuran	1	0.689		µg/L		69	50 - 150	25	30	
Dibenzothiophene	0.5	0.478		µg/L		96	75 - 113	5	30	
Disalicylidenepropanediamine	25	24		µg/L		96	50 - 150	15	30	
Fluoranthene	1.5	1.63		µg/L		109	60 - 146	3	30	
Fluorene	1.5	1.25		µg/L		83	58 - 131	13	30	
Hexachloroethane	1	0.715		µg/L		71	27 - 130	25	30	
Indeno[1,2,3-cd]pyrene	1.5	1.67		µg/L		111	50 - 151	5	30	
Naphthalene	1.5	1.06		µg/L		71	41 - 126	14	30	
Nitrobenzene	1	0.656		µg/L		66	54 - 111	24	30	
N-Nitrosodi-n-propylamine	1	0.662		µg/L		66	61 - 152	17	30	
N-Nitrosodiphenylamine	1	0.775		µg/L		77	49 - 142	4	30	
Pentachlorophenol	1	0.563		µg/L		56	36 - 111	7	30	
Perylene	0.5	0.505		µg/L		101	48 - 141	6	30	
Phenanthrene	1.5	1.48		µg/L		99	67 - 127	2	30	
Phenol	1	0.59		µg/L		59	29 - 114	28	30	
p-tert-Butylphenol	1	0.718		µg/L		72	50 - 150	11	30	
Pyrene	1.5	1.6		µg/L		107	54 - 156	0	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(2,4,6-Tribromophenol)	77		30 - 130
(d10-Acenaphthene)	71		27 - 133
(d10-Phenanthrene)	93		43 - 129

Eurofins Eaton Monrovia

# QC Sample Results

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

Job ID: 380-24805-1

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

Lab Sample ID: 100921-BS2  
Matrix: BlankMatrix  
Analysis Batch: O-40006

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: O-40006\_P

Surrogate	LCS DUP	LCS DUP	Limits
	%Recovery	Qualifier	
(d12-Chrysene)	93		52 - 144
(d12-Perylene)	97		36 - 161
(d5-Phenol)	60		0 - 130
(d8-Naphthalene)	68		25 - 125

## Method: 8015 Ethanol - SW846 8015B Gasoline Range Organics

Lab Sample ID: 22MEJ004WB  
Matrix: WATER  
Analysis Batch: 22MEJ004W

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
ETHANOL	ND	U	2000		ug/L			10/21/22 13:33	1

Lab Sample ID: 22MEJ004WL  
Matrix: WATER  
Analysis Batch: 22MEJ004W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

Lab Sample ID: 22J272-01M  
Matrix: WATER  
Analysis Batch: 22MEJ004W

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
ETHANOL	ND		10000	10000		ug/L		100	60 - 130

Lab Sample ID: 22J272-01S  
Matrix: WATER  
Analysis Batch: 22MEJ004W

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

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Result	Qualifier		Result	Qualifier						
ETHANOL	ND		10000	11100		ug/L		111	60 - 130	10	30

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Lab Sample ID: 22VGH7J11B  
Matrix: WATER  
Analysis Batch: 22VGH7J11

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
GASOLINE	ND	U	0.020		mg/L			10/21/22 12:47	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOFLUOROBENZENE					10/21/22 12:47	1

# QC Sample Results

Client: City & County of Honolulu  
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Job ID: 380-24805-1

## Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics (Continued)

**Lab Sample ID: 22VGH7J11L**  
**Matrix: WATER**  
**Analysis Batch: 22VGH7J11**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	0.500	0.453		mg/L		91	60 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
BROMOFLUOROBENZENE	110		70 - 130				

**Lab Sample ID: 22J272-01M**  
**Matrix: WATER**  
**Analysis Batch: 22VGH7J11**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	ND		0.500	0.478		mg/L		96	50 - 130
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
BROMOFLUOROBENZENE	115		60 - 140						

**Lab Sample ID: 22J272-01S**  
**Matrix: WATER**  
**Analysis Batch: 22VGH7J11**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
GASOLINE	ND		0.500	0.464		mg/L		93	50 - 130	3	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
BROMOFLUOROBENZENE	117		60 - 140								

## Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

**Lab Sample ID: 22DSJ049WB**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ049W**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			10/24/22 19:18	1
JP5	ND	U	0.050		mg/L			10/24/22 19:18	1
JP8	ND	U	0.050		mg/L			10/24/22 19:18	1
MOTOR OIL	ND	U	0.050		mg/L			10/24/22 19:18	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
BROMOBENZENE								10/24/22 19:18	1
HEXACOSANE								10/24/22 19:18	1

**Lab Sample ID: 22DSJ049WL**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ049W**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
DIESEL	2.50	2.70		mg/L		108	50 - 130

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# QC Sample Results

Client: City & County of Honolulu  
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Job ID: 380-24805-1

## Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

**Lab Sample ID: 22DSJ049WL**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ049W**

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

	LCS	LCS	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	103		60 - 130
HEXACOSANE	99		60 - 130

**Lab Sample ID: 22J5J049WL**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ049W**

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
JP5	2.50	2.20		mg/L		88	30 - 160

	LCS	LCS	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	102		60 - 130
HEXACOSANE	94		60 - 130

**Lab Sample ID: 22J8J049WL**  
**Matrix: WATER**  
**Analysis Batch: 22DSJ049W**

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
JP8	2.50	2.50		mg/L		100	30 - 160

	LCS	LCS	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	99		60 - 130
HEXACOSANE	101		60 - 130

# QC Association Summary

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

Job ID: 380-24805-1

## GC/MS VOA

### Analysis Batch: 21167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 380-21167/8	Method Blank	Total/NA	Water	524.2	
LCS 380-21167/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-21167/5	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-21167/3	Lab Control Sample	Total/NA	Water	524.2	
MRL 380-21167/7	Lab Control Sample	Total/NA	Water	524.2	

### Analysis Batch: 21256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	524.2	
MB 380-21256/5	Method Blank	Total/NA	Water	524.2	
LCS 380-21256/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-21256/4	Lab Control Sample Dup	Total/NA	Water	524.2	

### Analysis Batch: 21441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	524.2	
MB 380-21441/5	Method Blank	Total/NA	Water	524.2	
LCS 380-21441/2	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-21441/3	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-21441/4	Lab Control Sample	Total/NA	Water	524.2	

### Analysis Batch: 21526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	524.2	
MB 380-21526/15	Method Blank	Total/NA	Water	524.2	
LCS 380-21526/11	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-21526/12	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-21526/10	Lab Control Sample	Total/NA	Water	524.2	
MRL 380-21526/14	Lab Control Sample	Total/NA	Water	524.2	

### Analysis Batch: 22279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	524.2	
MB 380-22279/5	Method Blank	Total/NA	Water	524.2	
LCS 380-22279/2	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-22279/3	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-22279/4	Lab Control Sample	Total/NA	Water	524.2	

## GC/MS Semi VOA

### Prep Batch: 21477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	525.2	
MB 380-21477/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-21477/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-21477/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-21477/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-24730-AK-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-24799-E-1-A DU	Duplicate	Total/NA	Water	525.2	



# QC Association Summary

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Job ID: 380-24805-1

## GC/MS Semi VOA

### Analysis Batch: 21699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	525.2	21477
MB 380-21477/1-A	Method Blank	Total/NA	Water	525.2	21477
LCS 380-21477/3-A	Lab Control Sample	Total/NA	Water	525.2	21477
LCSD 380-21477/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	21477
MRL 380-21477/2-A	Lab Control Sample	Total/NA	Water	525.2	21477
380-24730-AK-1-A MS	Matrix Spike	Total/NA	Water	525.2	21477
380-24799-E-1-A DU	Duplicate	Total/NA	Water	525.2	21477

## GC Semi VOA

### Prep Batch: 21364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	504.1	
MBL 380-21364/4-A	Method Blank	Total/NA	Water	504.1	
LCS 380-21364/3-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-21364/1-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-21364/2-A	Lab Control Sample	Total/NA	Water	504.1	
380-23978-F-1-A MS	Matrix Spike	Total/NA	Water	504.1	
380-23978-M-2-A DU	Duplicate	Total/NA	Water	504.1	

### Prep Batch: 21407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	505	
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	505	
MB 380-21407/7-A	Method Blank	Total/NA	Water	505	
MRL 380-21407/2-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-21407/3-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-21407/4-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-21407/5-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-21407/6-A	Lab Control Sample	Total/NA	Water	505	
380-24762-B-1-A MS	Matrix Spike	Total/NA	Water	505	
380-24762-C-1-A MS	Matrix Spike	Total/NA	Water	505	
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	505	
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	505	

### Analysis Batch: 21577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	504.1	21364
MBL 380-21364/4-A	Method Blank	Total/NA	Water	504.1	21364
LCS 380-21364/3-A	Lab Control Sample	Total/NA	Water	504.1	21364
MRL 380-21364/1-A	Lab Control Sample	Total/NA	Water	504.1	21364
MRL 380-21364/2-A	Lab Control Sample	Total/NA	Water	504.1	21364
380-23978-F-1-A MS	Matrix Spike	Total/NA	Water	504.1	21364
380-23978-M-2-A DU	Duplicate	Total/NA	Water	504.1	21364

### Prep Batch: 22241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	504.1	
MBL 380-22241/12-A	Method Blank	Total/NA	Water	504.1	
LCS 380-22241/11-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-22241/10-A	Lab Control Sample	Total/NA	Water	504.1	

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# QC Association Summary

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

Job ID: 380-24805-1

## GC Semi VOA (Continued)

### Prep Batch: 22241 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 380-22241/9-A	Lab Control Sample	Total/NA	Water	504.1	
380-24862-K-1-A MS	Matrix Spike	Total/NA	Water	504.1	
380-25483-K-1-A DU	Duplicate	Total/NA	Water	504.1	

### Analysis Batch: 22249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	505	21407
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	505	21407
MB 380-21407/7-A	Method Blank	Total/NA	Water	505	21407
MRL 380-21407/2-A	Lab Control Sample	Total/NA	Water	505	21407
MRL 380-21407/3-A	Lab Control Sample	Total/NA	Water	505	21407
MRL 380-21407/4-A	Lab Control Sample	Total/NA	Water	505	21407
MRL 380-21407/5-A	Lab Control Sample	Total/NA	Water	505	21407
MRL 380-21407/6-A	Lab Control Sample	Total/NA	Water	505	21407
380-24762-B-1-A MS	Matrix Spike	Total/NA	Water	505	21407
380-24762-C-1-A MS	Matrix Spike	Total/NA	Water	505	21407
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	505	21407
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	505	21407

### Analysis Batch: 22648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	504.1	22241
MBL 380-22241/12-A	Method Blank	Total/NA	Water	504.1	22241
LCS 380-22241/11-A	Lab Control Sample	Total/NA	Water	504.1	22241
MRL 380-22241/10-A	Lab Control Sample	Total/NA	Water	504.1	22241
MRL 380-22241/9-A	Lab Control Sample	Total/NA	Water	504.1	22241
380-24862-K-1-A MS	Matrix Spike	Total/NA	Water	504.1	22241
380-25483-K-1-A DU	Duplicate	Total/NA	Water	504.1	22241

## HPLC/IC

### Analysis Batch: 21137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	
MB 380-21137/4	Method Blank	Total/NA	Water	300.0	
MB 380-21137/41	Method Blank	Total/NA	Water	300.0	
LCS 380-21137/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 380-21137/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 380-21137/42	Lab Control Sample	Total/NA	Water	300.0	
MRL 380-21137/5	Lab Control Sample	Total/NA	Water	300.0	
MRL 380-21137/6	Lab Control Sample	Total/NA	Water	300.0	
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	
380-24805-1 MSD	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	

### Analysis Batch: 21138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	
MB 380-21138/4	Method Blank	Total/NA	Water	300.0	
MB 380-21138/41	Method Blank	Total/NA	Water	300.0	
LCS 380-21138/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 380-21138/8	Lab Control Sample Dup	Total/NA	Water	300.0	

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# QC Association Summary

Client: City & County of Honolulu  
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## HPLC/IC (Continued)

### Analysis Batch: 21138 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 380-21138/42	Lab Control Sample	Total/NA	Water	300.0	
MRL 380-21138/5	Lab Control Sample	Total/NA	Water	300.0	
MRL 380-21138/6	Lab Control Sample	Total/NA	Water	300.0	
380-24805-1 MS	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	
380-24805-1 MSD	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	

### Analysis Batch: 21948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	300.0	
MB 380-21948/4	Method Blank	Total/NA	Water	300.0	
LCS 380-21948/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 380-21948/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 380-21948/3	Lab Control Sample	Total/NA	Water	300.0	
380-25485-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
380-25485-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

## Metals

### Prep Batch: 21413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total Recoverable	Water	200.8	
MB 380-21413/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 380-21413/3-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 380-21413/4-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
LLCS 380-21413/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
380-24931-Q-1-A MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	
380-24931-AK-1-A MS	Matrix Spike	Total Recoverable	Water	200.8	

### Analysis Batch: 21591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total Recoverable	Water	200.8	21413
MB 380-21413/1-A	Method Blank	Total Recoverable	Water	200.8	21413
LCS 380-21413/3-A	Lab Control Sample	Total Recoverable	Water	200.8	21413
LCSD 380-21413/4-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	21413
LLCS 380-21413/2-A	Lab Control Sample	Total Recoverable	Water	200.8	21413
380-24931-Q-1-A MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	21413
380-24931-AK-1-A MS	Matrix Spike	Total Recoverable	Water	200.8	21413

### Analysis Batch: 21742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	200.7 Rev 4.4	
MB 380-21742/18	Method Blank	Total/NA	Water	200.7 Rev 4.4	
LCS 380-21742/20	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
LCSD 380-21742/21	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	
LLCS 380-21742/19	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	
380-24710-C-39 MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	
380-24710-C-39 MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	

### Prep Batch: 37635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	245.1	

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# QC Association Summary

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

Job ID: 380-24805-1

## Metals (Continued)

### Prep Batch: 37635 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 810-37635/1-A	Method Blank	Total/NA	Water	245.1	
LCS 810-37635/3-A	Lab Control Sample	Total/NA	Water	245.1	
LLCS 810-37635/2-A	Lab Control Sample	Total/NA	Water	245.1	
380-24931-AX-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
380-24931-BR-1-B MS	Matrix Spike	Total/NA	Water	245.1	

### Analysis Batch: 37693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	245.1	37635
MB 810-37635/1-A	Method Blank	Total/NA	Water	245.1	37635
LCS 810-37635/3-A	Lab Control Sample	Total/NA	Water	245.1	37635
LLCS 810-37635/2-A	Lab Control Sample	Total/NA	Water	245.1	37635
380-24931-AX-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	37635
380-24931-BR-1-B MS	Matrix Spike	Total/NA	Water	245.1	37635

## General Chemistry

### Analysis Batch: 21094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	SM 2540C	
MB 380-21094/1	Method Blank	Total/NA	Water	SM 2540C	
HLCS 380-21094/5	Lab Control Sample	Total/NA	Water	SM 2540C	
LCS 380-21094/4	Lab Control Sample	Total/NA	Water	SM 2540C	
MRL 380-21094/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MRL 380-21094/3	Lab Control Sample	Total/NA	Water	SM 2540C	
380-24662-G-1 DU	Duplicate	Total/NA	Water	SM 2540C	

### Analysis Batch: 21120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	SM 4500 S2 D	
MB 380-21120/1	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 380-21120/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 380-21120/11	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
MRL 380-21120/10	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MRL 380-21120/2	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
810-41254-AD-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
810-41254-AD-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

### Analysis Batch: 22034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	SM 4500 F C	
MB 380-22034/40	Method Blank	Total/NA	Water	SM 4500 F C	
MB 380-22034/6	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 380-22034/42	Lab Control Sample	Total/NA	Water	SM 4500 F C	
LCS 380-22034/8	Lab Control Sample	Total/NA	Water	SM 4500 F C	
LCSD 380-22034/43	Lab Control Sample Dup	Total/NA	Water	SM 4500 F C	
LCSD 380-22034/9	Lab Control Sample Dup	Total/NA	Water	SM 4500 F C	
MRL 380-22034/41	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MRL 380-22034/7	Lab Control Sample	Total/NA	Water	SM 4500 F C	

# QC Association Summary

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

Job ID: 380-24805-1

## General Chemistry

### Analysis Batch: 22035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	SM 2320B	
MB 380-22035/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 380-22035/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 380-22035/22	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LLCS 380-22035/6	Lab Control Sample	Total/NA	Water	SM 2320B	
MRL 380-22035/8	Lab Control Sample	Total/NA	Water	SM 2320B	
380-24662-C-1 MS	Matrix Spike	Total/NA	Water	SM 2320B	
380-24662-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 2320B	
380-24662-C-1 DU	Duplicate	Total/NA	Water	SM 2320B	

### Analysis Batch: 22036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	SM 2510B	
MB 380-22036/7	Method Blank	Total/NA	Water	SM 2510B	
LCS 380-22036/10	Lab Control Sample	Total/NA	Water	SM 2510B	
LCSD 380-22036/22	Lab Control Sample Dup	Total/NA	Water	SM 2510B	
MRL 380-22036/8	Lab Control Sample	Total/NA	Water	SM 2510B	
380-24662-C-1 DU	Duplicate	Total/NA	Water	SM 2510B	

### Analysis Batch: 22037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	SM 4500 H+ B	
MB 380-22037/9	Method Blank	Total/NA	Water	SM 4500 H+ B	
LCS 380-22037/10	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSD 380-22037/23	Lab Control Sample Dup	Total/NA	Water	SM 4500 H+ B	
380-24662-C-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

## Subcontract

### Analysis Batch: O-40006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	625 Acid/Base/PAH + TICs	O-40006_P
100921-B1	Method Blank	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-40006_P
100921-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-40006_P
100921-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-40006_P

### Analysis Batch: 22DSJ049W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	8015 LL DRO/MRO/JP5/J P8	
22DSJ049WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Eurofins Eaton Monrovia

# QC Association Summary

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

Job ID: 380-24805-1

## Subcontract (Continued)

### Analysis Batch: 22DSJ049W (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
22DSJ049WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
22J5J049WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
22J8J049WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

### Analysis Batch: 22MEJ004W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	8015 Ethanol	
22MEJ004WB	Method Blank	Total/NA	WATER	8015 Ethanol	
22MEJ004WL	Lab Control Sample	Total/NA	WATER	8015 Ethanol	
22J272-01M	Matrix Spike	Total/NA	WATER	8015 Ethanol	
22J272-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Ethanol	

### Analysis Batch: 22VGH7J11

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VGH7J11B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22VGH7J11L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22J272-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22J272-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

### Prep Batch: O-40006\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Water	EPA_625	
100921-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
100921-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
100921-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	



# Lab Chronicle

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-1**

**Date Collected: 10/17/22 11:04**

**Matrix: Water**

**Date Received: 10/18/22 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	21526	AAE8	EA MON	10/21/22 16:58
Total/NA	Analysis	524.2		1	21441	P3EE	EA MON	10/20/22 23:34
Total/NA	Prep	525.2			21477	OTM3	EA MON	10/21/22 07:31
Total/NA	Analysis	525.2		1	21699	UJC9	EA MON	10/24/22 23:51
Total/NA	Prep	504.1			21364	K9GY	EA MON	10/20/22 13:23 - 10/20/22 14:28 <sup>1</sup>
Total/NA	Analysis	504.1		1	21577	K9GY	EA MON	10/21/22 05:34
Total/NA	Prep	505			21407	DR5R	EA MON	10/20/22 13:52 - 10/20/22 16:00 <sup>1</sup>
Total/NA	Analysis	505		1	22249	ULRL	EA MON	10/20/22 19:33
Total/NA	Analysis	300.0		1	21948	UNJR	EA MON	10/24/22 23:54
Total/NA	Analysis	300.0		2	21137	LM8C	EA MON	10/18/22 16:52
Total/NA	Analysis	300.0		2	21138	LM8C	EA MON	10/18/22 16:52
Total/NA	Analysis	200.7 Rev 4.4		1	21742	UNSI	EA MON	10/24/22 14:11
Total Recoverable	Prep	200.8			21413	NQM8	EA MON	10/20/22 14:15
Total Recoverable	Analysis	200.8		1	21591	DHX7	EA MON	10/21/22 15:03
Total/NA	Prep	245.1			37635	AC	EA SB	11/07/22 10:10
Total/NA	Analysis	245.1		1	37693	AC	EA SB	11/07/22 16:00
Total/NA	Analysis	SM 2320B		1	22035	ZYV7	EA MON	10/26/22 01:56
Total/NA	Analysis	SM 2510B		1	22036	ZYV7	EA MON	10/26/22 01:56
Total/NA	Analysis	SM 2540C		1	21094	XLG4	EA MON	10/18/22 16:10
Total/NA	Analysis	SM 4500 F C		1	22034	ZYV7	EA MON	10/25/22 22:53
Total/NA	Analysis	SM 4500 H+ B		1	22037	ZYV7	EA MON	10/26/22 01:56
Total/NA	Analysis	SM 4500 S2 D		1	21120	PK4Q	EA MON	10/18/22 20:31
Total/NA	Prep	EPA_625		1	O-40006_P			10/20/22 00:00
Total/NA	Analysis	625 Acid/Base/PAH + TICs		1	O-40006	YC		11/14/22 15:54
Total/NA	Analysis	8015 Ethanol		1	22MEJ004W	ASitu		10/21/22 14:13
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7J11	SCerva		10/21/22 15:54
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	22DSJ049W	SDees		10/25/22 01:08

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

**Lab Sample ID: 380-24805-2**

**Date Collected: 10/17/22 11:04**

**Matrix: Water**

**Date Received: 10/18/22 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	21256	AAE8	EA MON	10/20/22 01:31
Total/NA	Analysis	524.2		1	22279	P3EE	EA MON	10/27/22 16:43
Total/NA	Prep	504.1			22241	K9GY	EA MON	10/27/22 12:27 - 10/27/22 13:49 <sup>1</sup>
Total/NA	Analysis	504.1		1	22648	K9GY	EA MON	10/27/22 23:09
Total/NA	Prep	505			21407	DR5R	EA MON	10/20/22 13:52 - 10/20/22 16:00 <sup>1</sup>
Total/NA	Analysis	505		1	22249	ULRL	EA MON	10/20/22 20:42

Eurofins Eaton Monrovia

# Lab Chronicle

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

Job ID: 380-24805-1

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

**Lab Sample ID: 380-24805-2**

**Date Collected: 10/17/22 11:04**

**Matrix: Water**

**Date Received: 10/18/22 09:40**

<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	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7J11	SCerva		10/21/22 17:46

\* Completion dates and times are reported or not reported per method requirements or individual lab discretion.

### Laboratory References:

- = Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806
- EA MON = Eurofins Eaton Monrovia, 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016, TEL (626)386-1100
- EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777





# Accreditation/Certification Summary

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

Job ID: 380-24805-1

## Laboratory: Eurofins Eaton Monrovia

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-23

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
300.0		Water	Nitrate Nitrite as N
505	505	Water	Polychlorinated biphenyls, Total
524.2		Water	1,3-Dichloropropene, Total
524.2		Water	2-Butanone (MEK)
524.2		Water	4-Methyl-2-pentanone (MIBK)
524.2		Water	Acetone
524.2		Water	Bromoethane
524.2		Water	m,p-Xylenes
524.2		Water	o-Xylene
525.2	525.2	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4'-DDT
525.2	525.2	Water	Acenaphthene
525.2	525.2	Water	Acenaphthylene
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	Anthracene
525.2	525.2	Water	Benz(a)anthracene
525.2	525.2	Water	Benzo[b]fluoranthene
525.2	525.2	Water	Benzo[g,h,i]perylene
525.2	525.2	Water	Benzo[k]fluoranthene
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Bromacil
525.2	525.2	Water	Butylbenzylphthalate
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	Chrysene
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Dibenz(a,h)anthracene
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Diethylphthalate
525.2	525.2	Water	Dimethylphthalate
525.2	525.2	Water	Di-n-butyl phthalate
525.2	525.2	Water	Di-n-octyl phthalate
525.2	525.2	Water	Endosulfan I (Alpha)

# Accreditation/Certification Summary

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

Job ID: 380-24805-1

## Laboratory: Eurofins Eaton Monrovia (Continued)

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

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	Fluoranthene
525.2	525.2	Water	Fluorene
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Molinate
525.2	525.2	Water	Naphthalene
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Phenanthrene
525.2	525.2	Water	Pyrene
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbutylazine
525.2	525.2	Water	Thiobencarb
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor
525.2	525.2	Water	Trifluralin
SM 2320B		Water	Bicarbonate Alkalinity as CaCO <sub>3</sub>
SM 2320B		Water	Carbonate Alkalinity as CaCO <sub>3</sub>
SM 4500 S2 D		Water	Sulfide

## Laboratory: Eurofins Eaton South Bend

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

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-24
Alabama	State	40700	06-30-23
Alaska	State	IN00035	06-30-23
Arizona	State	AZ0432	07-26-23
Arkansas (DW)	State	EPA IN00035	06-30-23
California	State	2920	06-30-23
Colorado	State	IN00035	02-28-23
Connecticut	State	PH-0132	03-31-22 *
Delaware (DW)	State	IN00035	06-30-23
Florida	NELAP	E87775	06-30-23
Georgia (DW)	State	929	06-30-23
Hawaii	State	IN035	06-30-23
Idaho (DW)	State	IN00035	12-31-22
IL Dept. of Public Health (Micro)	State	17767	12-31-22
Illinois	NELAP	200001	09-30-23
Indiana	State	C-71-01	12-31-22
Indiana (Micro)	State	M-76-07	11-30-22

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Accreditation/Certification Summary

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

Job ID: 380-24805-1

## Laboratory: Eurofins Eaton South Bend (Continued)

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	IA Lab #098	11-01-23
Kansas	NELAP	E-10233	10-31-23
Kentucky (DW)	State	KY90056	12-31-22
Louisiana (DW)	State	LA014	12-31-22
Maine	State	IN00035	05-01-23
Maryland	State	209	03-31-23
Massachusetts	State	M-IN035	06-30-23
MI - RadChem Recognition	State	9926	06-30-23
Michigan	State	9926	12-31-22
Minnesota	NELAP	1989807	11-14-22
Mississippi	State	IN00035	06-30-22 *
Missouri	State	880	09-30-24
Montana (DW)	State	CERT0026	01-01-23
Nebraska	State	NE-OS-05-04	06-30-23
Nevada	State	IN000352021-2	07-31-23
New Hampshire	NELAP	2124	11-05-23
New Jersey	NELAP	IN598	06-30-23
New Mexico	State	IN00035	06-30-23
New York	NELAP	11398	04-01-23
North Carolina (DW)	State	18700	07-31-23
North Dakota	State	R-035	06-30-23
Ohio	State	87775	06-30-23
Oklahoma	NELAP	D9508	08-31-23
Oregon	NELAP	4156	09-16-23
Pennsylvania	NELAP	68-00466	04-30-23
Puerto Rico	State	IN00035	04-01-23
Rhode Island	State	LAO00343	12-30-22
South Carolina	State	95005001	06-30-23
South Dakota (DW)	State	IN00035	12-31-22
Tennessee	State	TN02973	06-30-23
Texas	NELAP	T104704187-22-16	12-31-22
Texas	TCEQ Water Supply	TX207	06-30-23
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25
Utah	NELAP	IN00035	07-31-23
Vermont	State	VT-8775	11-14-22
Virginia	NELAP	460275	03-14-23
Washington	State	C837	01-01-23
West Virginia (DW)	State	9927 C	12-31-22
Wisconsin	State	999766900	08-31-23
Wisconsin (Micro)	State	10121	12-31-22
Wyoming	State	8TMS-L	06-30-23

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

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

Job ID: 380-24805-1

Method	Method Description	Protocol	Laboratory
524.2	Volatile Organic Compounds (GC/MS SIM)	EPA-DW	EA MON
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	EA MON
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA MON
504.1	EDB, DBCP and 1,2,3-TCP (GC)	EPA-DW2	EA MON
505	Organochlorine Pesticides/PCBs (GC)	EPA	EA MON
300.0	Anions, Ion Chromatography	EPA	EA MON
200.7 Rev 4.4	Metals (ICP)	EPA	EA MON
200.8	Metals (ICP/MS)	EPA	EA MON
245.1	Mercury (CVAA)	EPA	EA SB
SM 2320B	Alkalinity	SM	EA MON
SM 2510B	Conductivity, Specific Conductance	SM	EA MON
SM 2540C	Solids, Total Dissolved (TDS)	SM	EA MON
SM 4500 F C	Fluoride	SM	EA MON
SM 4500 H+ B	pH	SM	EA MON
SM 4500 S2 D	Sulfide, Total	SM	EA MON
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
200.8	Preparation, Total Recoverable Metals	EPA	EA MON
245.1	Preparation, Mercury	EPA	EA SB
504.1	Microextraction	EPA-DW	EA MON
505	Extraction, Organochlorine Pesticides/PCBs	EPA	EA MON
525.2	Extraction of Semivolatile Compounds	EPA	EA MON
None	Autocomplete Prep - Metals - No Digestion required	None	EA MON

## Protocol References:

EPA = US Environmental Protection Agency

EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.

EPA-DW2 = "Methods For The Determination of Organic Compounds in Drinking Water - Supplement III ", EPA/600/R-95-131, August 1995

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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 MON = Eurofins Eaton Monrovia, 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016, TEL (626)386-1100

EA SB = Eurofins Eaton South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

# Sample Summary

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

Job ID: 380-24805-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-24805-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	10/17/22 11:04	10/18/22 09:40
380-24805-2	TB: AIEA GULCH WELLS PUMP 2	Water	10/17/22 11:04	10/18/22 09:40

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



3051 Fujita Street  
 Torrance, CA 90505  
 Tel: (310)-618-8889

Date: 11-10-2022  
 EMAX Batch No.: 22J272

Attn: Jackie Contreras

Eurofins Eaton Analytical  
 750 Royal Oaks Dr., Suite 100  
 Monrovia, CA 91016-3629

Subject: Laboratory Report  
 Project: 380-24805

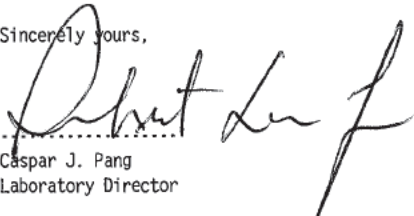
Enclosed is the Laboratory report for samples received on 10/19/22.  
 The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-24805-1	J272-01	10/17/22	WATER	TPH GASOLINE TPH
380-24805-2	J272-02	10/17/22	WATER	TPH GASOLINE ETHANOL
380-24805-1MS	J272-01M	10/17/22	WATER	TPH GASOLINE ETHANOL
380-24805-1MSD	J272-01S	10/17/22	WATER	TPH GASOLINE ETHANOL

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,



Caspar J. Pang  
 Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912022-22  
 ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing  
 California ELAP Accredited Certificate Number 2672



Chain of Custody Record

22J272  
Monrovia, CA (Suite 100)  
750 Royal Oaks Drive Suite 100  
Monrovia, CA 91016  
Phone: 626-386-1100

<b>Client Information (Sub Contract Lab)</b> Company: EMAX Laboratories Inc Address: 3051 Fujita Street, Torrance, CA, 90505 City: Torrance State, Zip: CA, 90505 Phone: Email: Project Name: RED-HILL Site: Honolulu BWS Sites		Lab PM: Arada, Rachelle E-Mail: Rachelle.Arada@et.eurofins.com Accreditations Required (See note): State - Hawaii		Carrier Tracking No(s): State of Origin: Hawaii		COC No: 390-24905-1 Page: Page 1 of 1 Job #: 390-24905-1	
Due Date Requested: 11/11/2022 TAT Requested (days):		<b>Analysis Requested</b>		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 P - Na2O4S D - Nitric Acid Q - Na2SO3 E - NaHSO4 R - Na2S2O3 F - MeOH S - H2SO4 G - Amchlor H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - pH 4-5 W - EDTA Y - Trizma L - EDA Z - other (specify) Other:		Total Number of containers: 12	
Sample Date: 10/17/22 Sample Time: 11:04 Hawaiian Sample Type (C=Comp, G=grab): Matrix (W=water, S=solid, O=soil, BT=Blood, A=Air): Preservation Code:		Field Filtered Sample (Yes or No): Form MS/MSD (Yes or No): SUB (8015 Gas (Furgeable) LL (EAL)) 8015 Gas (Furgeable) LL (EAL) SUB (8015 LL DRO/MRO/JPS/JPB) 8015 LL DRO/MRO/JPS/JPB SUB (8015 Ethanol) 8015 Ethanol		Special Instructions/Note: See Attached Instructions 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/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.	
Sample Identification - Client ID (Lab ID) AIEA GULCH WELLS PUMP 2 (331-202-TP072) (390-24805-1) TB: AIEA GULCH WELLS PUMP 2 (390-24805-2)		Sample Date: 10/17/22 Sample Time: 11:04 Hawaiian Sample Type (C=Comp, G=grab): Matrix (W=water, S=solid, O=soil, BT=Blood, A=Air): Preservation Code:		Field Filtered Sample (Yes or No): Form MS/MSD (Yes or No): SUB (8015 Gas (Furgeable) LL (EAL)) 8015 Gas (Furgeable) LL (EAL) SUB (8015 LL DRO/MRO/JPS/JPB) 8015 LL DRO/MRO/JPS/JPB SUB (8015 Ethanol) 8015 Ethanol		Special Instructions/Note: See Attached Instructions See Attached Instructions	
Possible Hazard Identification Unconfirmed		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:		Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	
Empty Kit Relinquished by:		Date: 10/19/22 Time: 10:58 Company: EMAX		Method of Shipment:		Date/Time: 10/19/22 10:58 Company: EMAX	
Relinquished by:		Date/Time: 10/19/22 10:58 Company: EMAX		Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:		Relinquished by:		Date/Time:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: Temp. 2.4		Page 2 of 4	







Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others <input checked="" type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery	Airbill / Tracking Number	ECN <b>22J272</b> Recipient <b>Johwin Zamora</b> Date <b>10/19/22</b> Time <b>10:58</b>
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**COC INSPECTION**

<input checked="" type="checkbox"/> Client Name	<input checked="" type="checkbox"/> Client PM/FC	<input type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input type="checkbox"/> Matrix
<input checked="" type="checkbox"/> Address	<input checked="" type="checkbox"/> Tel # / Fax #	<input type="checkbox"/> Courier Signature	<input checked="" type="checkbox"/> Analysis Required	<input type="checkbox"/> Preservative (if any)	<input checked="" type="checkbox"/> TAT
Safety Issues (if any) Note:	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

**PACKAGING INSPECTION**

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, 56 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <b>24</b> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer:	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
	<input type="checkbox"/> Cooler 9 _____ °C	<input type="checkbox"/> Cooler 10 _____ °C	
	A - S/N _____	B - S/N <b>210760297</b>	C - S/N _____
			<b>D - S/N 210760272</b>

Comments:  Temperature is out of range. PM was informed IMMEDIATELY.  
 Note:

**DISCREPANCIES**

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<b>2</b>	<b>13,14</b>	<b>D22</b>	<b>2nd Date reads 09/21/22</b>	<b>RI</b>

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. NB 10/26/22

**NOTES/OBSERVATIONS:**  
 SAMPLE MATRIX IS DRINKING WATER?  YES  NO

- LEGEND:**
- |   |   |  |
|---|---|--|
| <p><b>Code Description-Sample Management</b></p> <p>D1 Analysis is not indicated in _____</p> <p>D2 Analysis mismatch COC vs label</p> <p>D3 Sample ID mismatch COC vs label</p> <p>D4 Sample ID is not indicated in _____</p> <p>D5 Container -[improper] [leaking] [broken]</p> <p>D6 Date/Time is not indicated in _____</p> <p>D7 Date/Time mismatch COC vs label</p> <p>D8 Sample listed in COC is not received</p> <p>D9 Sample received is not listed in COC</p> <p>D10 No initial/date on corrections in COC/label</p> <p>D11 Container count mismatch COC vs received</p> <p>D12 Container size mismatch COC vs received</p> | <p><b>Code Description-Sample Management</b></p> <p>D13 Out of Holding Time</p> <p>D14 Bubble is &gt;6mm</p> <p>D15 No trip blank in cooler</p> <p>D16 Preservation not indicated in _____</p> <p>D17 Preservation mismatch COC vs label</p> <p>D18 Insufficient chemical preservative</p> <p>D19 Insufficient Sample</p> <p>D20 No filtration info for dissolved analysis</p> <p>D21 No sample for moisture determination</p> <p><b>D22 2nd Date on label is incorrect</b></p> <p>D23 _____</p> <p>D24 _____</p> | <p><input type="checkbox"/> Continue to next page.</p> <p><b>Code Description-Sample Management</b></p> <p>R1 Proceed as indicated in COC <input checked="" type="checkbox"/> COC <input type="checkbox"/> Label</p> <p>R2 Refer to attached instruction</p> <p>R3 Cancel the analysis</p> <p>R4 Use vial with smallest bubble first</p> <p>R5 Log-in with latest sampling date and time+1 min</p> <p>R6 Adjust pH as necessary</p> <p>R7 Filter and preserved as necessary</p> <p>R8 _____</p> <p>R9 _____</p> <p>R10 _____</p> <p>R11 _____</p> <p>R12 _____</p> |
|---|---|--|

**REVIEWS:**

Sample Labeling <b>Maria Rivera</b>	SRF <b>Cepeda</b>	PM <b>NB</b>
Date <b>10/19/22</b>	Date <b>10/19/22</b>	Date <b>10/26/22</b>



## REPORTING CONVENTIONS

### DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
<b>J</b>	<b>F</b>	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
<b>N</b>		Indicates presumptive evidence of a compound.
<b>B</b>	<b>B</b>	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
<b>E</b>	<b>J</b>	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

**Note:** The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

### ACRONYMS AND ABBREVIATIONS:

<b>CRDL</b>	Contract Required Detection Limit
<b>RL</b>	Reporting Limit
<b>MRL</b>	Method Reporting Limit
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>DO</b>	Diluted out

### DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-24805

METHOD 5030B/8015B  
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 22J272



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-24805

SDG : 22J272

METHOD 5030B/8015B  
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of two(2) water samples were received on 10/19/22 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7J11B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VGH7J11L/VGH7J11C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in J272-01M/J272-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE  
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL  
 Project : 380-24805  
 SDG NO. : 22J272  
 Instrument ID : H7

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
									WATER
MBLK1W	VGH7J11B	1	NA	10/21/2212:47	10/21/2212:47	AJ21005A	AJ21004A	22VGH7J11	Method Blank
LCS1W	VGH7J11L	1	NA	10/21/2214:40	10/21/2214:40	AJ21008A	AJ21004A	22VGH7J11	Lab Control Sample (LCS)
LCD1W	VGH7J11C	1	NA	10/21/2215:17	10/21/2215:17	AJ21009A	AJ21004A	22VGH7J11	LCS Duplicate
380-24805-1	J272-01	1	NA	10/21/2215:54	10/21/2215:54	AJ21010A	AJ21004A	22VGH7J11	Field Sample
380-24805-1MS	J272-01M	1	NA	10/21/2216:32	10/21/2216:32	AJ21011A	AJ21004A	22VGH7J11	Matrix Spike Sample (MS)
380-24805-1MSD	J272-01S	1	NA	10/21/2217:09	10/21/2217:09	AJ21012A	AJ21004A	22VGH7J11	MS Duplicate (MSD)
380-24805-2	J272-02	1	NA	10/21/2217:46	10/21/2217:46	AJ21013A	AJ21004A	22VGH7J11	Field Sample

FN - Filename  
 % Moist - Percent Moisture



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# SAMPLE RESULTS





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# QC SUMMARIES



METHOD 5030B/8015B  
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/21/22 12:47
Project    : 380-24805                   Date Received: 10/21/22
Batch No.  : 22J272                       Date Extracted: 10/21/22 12:47
Sample ID  : MBLK1W                       Date Analyzed: 10/21/22 12:47
Lab Samp ID: VGH7J11B                     Dilution Factor: 1
Lab File ID: AJ21005A                     Matrix: WATER
Ext Btch ID: 22VGH7J11                   % Moisture: NA
Calib. Ref.: AJ21004A                    Instrument ID: H7
=====

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PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0313	0.0400	78	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-24805  
BATCH NO. : 22J272  
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7J11B	VGH7J11L	VGH7J11C
LAB FILE ID	: AJ21005A	AJ21008A	AJ21009A
DATE PREPARED	: 10/21/22 12:47	10/21/22 14:40	10/21/22 15:17
DATE ANALYZED	: 10/21/22 12:47	10/21/22 14:40	10/21/22 15:17
PREP BATCH	: 22VGH7J11	22VGH7J11	22VGH7J11
CALIBRATION REF:	AJ21004A	AJ21004A	AJ21004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.453	91	0.500	0.460	92	2	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0439	110	0.0400	0.0418	105	70-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-24805  
BATCH NO. : 22J272  
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-24805-1	380-24805-1MS	380-24805-1MSD
LAB SAMPLE ID	: J272-01	J272-01M	J272-01S
LAB FILE ID	: AJ21010A	AJ21011A	AJ21012A
DATE PREPARED	: 10/21/22 15:54	10/21/22 16:32	10/21/22 17:09
DATE ANALYZED	: 10/21/22 15:54	10/21/22 16:32	10/21/22 17:09
PREP BATCH	: 22VGH7J11	22VGH7J11	22VGH7J11
CALIBRATION REF:	AJ21004A	AJ21004A	AJ21004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.478	96	0.500	0.464	93	3	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0461	115	0.0400	0.0467	117	60-140

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-24805

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22J272



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-24805

SDG : 22J272

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 10/19/22 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSJ049WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSJ049WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 22J162-01M/22J162-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-24805

SDG : 22J272

METHOD 3520C/8015B  
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 10/19/22 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSJ049WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for JP5 was within LCS QC limits in J5J049WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP5 was within MS QC limits in 22J162-01M/22J162-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-24805

SDG : 22J272

METHOD 3520C/8015B  
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 10/19/22 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSJ049WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for JP8 was within LCS QC limits in J8J049WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP8 was within MS QC limits in 22J197-01M/22J197-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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Client : EUROFINS EATON ANALYTICAL
Project : 380-24805
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SDG NO. : 22J272
Instrument ID : D5
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Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSJ049WB	1	NA	10/24/2219:18	10/22/2213:30	LJ24029A	LJ24023A	22DSJ049W	Method Blank
LCS1W	DSJ049WL	1	NA	10/24/2219:36	10/22/2213:30	LJ24030A	LJ24023A	22DSJ049W	Lab Control Sample (LCS)
380-24805-1	J272-01	1	NA	10/25/2201:08	10/22/2213:30	LJ24048A	LJ24023A	22DSJ049W	Field Sample

FN - Filename  
% Moist - Percent Moisture









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# SAMPLE RESULTS

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/17/22 11:04
Project     : 380-24805                   Date Received: 10/19/22
Batch No.   : 22J272                      Date Extracted: 10/22/22 13:30
Sample ID   : 380-24805-1                 Date Analyzed: 10/25/22 01:08
Lab Samp ID: 22J272-01                    Dilution Factor: 1
Lab File ID: LJ24048A                      Matrix: WATER
Ext Btch ID: 22DSJ049W                    % Moisture: NA
Calib. Ref.: LJ24023A                     Instrument ID: D5
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.030	0.015
Motor Oil	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.570	0.595	96	60-130
Hexacosane	0.149	0.149	100	60-130

Notes:

Parameter      H-C Range  
Diesel            C10-C24  
Motor Oil        C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 840ml                      Final Volume : 5ml  
Prepared by    : DLi                                Analyzed by : SDeeso

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/17/22 11:04
Project     : 380-24805                   Date Received: 10/19/22
Batch No.   : 22J272                       Date Extracted: 10/22/22 13:30
Sample ID   : 380-24805-1                 Date Analyzed: 10/25/22 01:08
Lab Samp ID: 22J272-01                    Dilution Factor: 1
Lab File ID: LJ24048A                      Matrix: WATER
Ext Btch ID: 22DSJ049W                     % Moisture: NA
Calib. Ref.: LJ24024A                      Instrument ID: D5
=====
    
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.570	0.595	96	60-130
Hexacosane	0.149	0.149	100	60-130

Notes:

RL : Reporting Limit  
 Parameter H-C Range  
 JP5 C8-C18  
 Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.  
 Sample Amount : 840ml Final Volume : 5ml  
 Prepared by : DLi Analyzed by : SDeeso

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/17/22 11:04
Project    : 380-24805                   Date Received: 10/19/22
Batch No.  : 22J272                       Date Extracted: 10/22/22 13:30
Sample ID  : 380-24805-1                 Date Analyzed: 10/25/22 01:08
Lab Samp ID: 22J272-01                   Dilution Factor: 1
Lab File ID: LJ24048A                     Matrix: WATER
Ext Btch ID: 22DSJ049W                   % Moisture: NA
Calib. Ref.: LJ24025A                     Instrument ID: D5
=====
  
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.059	0.030

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.570	0.595	96	60-130
Hexacosane	0.149	0.149	100	60-130

Notes:

RL : Reporting Limit  
 Parameter H-C Range  
 JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.  
 Sample Amount : 840ml Final Volume : 5ml  
 Prepared by : DLi Analyzed by : SDeeso

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# QC SUMMARIES

METHOD 3520C/8015B  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL    Date Collected: 10/22/22 13:30
Project    : 380-24805                    Date Received: 10/22/22
Batch No.  : 22J272                       Date Extracted: 10/22/22 13:30
Sample ID  : MBLK1W                       Date Analyzed: 10/24/22 19:18
Lab Samp ID: DSJ049WB                    Dilution Factor: 1
Lab File ID: LJ24029A                    Matrix: WATER
Ext Btch ID: 22DSJ049W                  % Moisture: NA
Calib. Ref.: LJ24023A                   Instrument ID: D5
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.025	0.012
Motor Oil	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.493	0.500	99	60-130
Hexacosane	0.132	0.125	106	60-130

Notes:

Parameter H-C Range  
Diesel C10-C24  
Motor Oil C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml                      Final Volume : 5ml  
Prepared by : DLi                              Analyzed by : SDeeso



EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-24805  
BATCH NO. : 22J272  
METHOD : 3520C/8015B

=====

MATRIX : WATER % MOISTURE:NA  
DILUTION FACTOR: 1 1  
SAMPLE ID : MBLK1W LCS1W  
LAB SAMPLE ID : DSJ049WB DSJ049WL  
LAB FILE ID : LJ24029A LJ24030A  
DATE PREPARED : 10/22/22 13:30 10/22/22 13:30  
DATE ANALYZED : 10/24/22 19:18 10/24/22 19:36  
PREP BATCH : 22DSJ049W 22DSJ049W  
CALIBRATION REF: LJ24023A LJ24023A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.70	108	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.517	103	60-130
Hexacosane	0.125	0.124	99	60-130

=====

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-23784  
BATCH NO. : 22J162  
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-23784-1	380-23784-1MS	380-23784-1MSD
LAB SAMPLE ID	: 22J162-01	22J162-01M	22J162-01S
LAB FILE ID	: LJ24033A	LJ24034A	LJ24035A
DATE PREPARED	: 10/22/22 13:30	10/22/22 13:30	10/22/22 13:30
DATE ANALYZED	: 10/24/22 20:32	10/24/22 20:50	10/24/22 21:09
PREP BATCH	: 22DSJ049W	22DSJ049W	22DSJ049W
CALIBRATION REF:	LJ24023A	LJ24023A	LJ24023A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.38	2.64	111	2.40	2.69	112	2	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.475	0.435	92	0.480	0.513	107	60-130
Hexacosane	0.119	0.122	103	0.120	0.129	108	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/22/22 13:30
Project     : 380-24805                   Date Received: 10/22/22
Batch No.   : 22J272                       Date Extracted: 10/22/22 13:30
Sample ID   : MBLK1W                       Date Analyzed: 10/24/22 19:18
Lab Samp ID: DSJ049WB                     Dilution Factor: 1
Lab File ID: LJ24029A                     Matrix: WATER
Ext Btch ID: 22DSJ049W                   % Moisture: NA
Calib. Ref.: LJ24024A                     Instrument ID: D5
=====
    
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.493	0.500	99	60-130
Hexacosane	0.132	0.125	106	60-130

Notes:

RL : Reporting Limit  
 Parameter H-C Range  
 JP5 C8-C18  
 Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.  
 Sample Amount : 1000ml Final Volume : 5ml  
 Prepared by : DLi Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-24805  
BATCH NO. : 22J272  
METHOD : 3520C/8015B

=====

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSJ049WB	J5J049WL
LAB FILE ID	: LJ24029A	LJ24031A
DATE PREPARED	: 10/22/22 13:30	10/22/22 13:30
DATE ANALYZED	: 10/24/22 19:18	10/24/22 19:55
PREP BATCH	: 22DSJ049W	22DSJ049W
CALIBRATION REF:	LJ24024A	LJ24024A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP5	ND	2.50	2.20	88	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.510	102	60-130
Hexacosane	0.125	0.118	94	60-130

=====

MB: Method Blank sample    LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-23784  
BATCH NO. : 22J162  
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-23784-1	380-23784-1MS	380-23784-1MSD
LAB SAMPLE ID	: 22J162-01	22J162-01M	22J162-01S
LAB FILE ID	: LJ24033A	LJ24036A	LJ24037A
DATE PREPARED	: 10/22/22 13:30	10/22/22 13:30	10/22/22 13:30
DATE ANALYZED	: 10/24/22 20:32	10/24/22 21:27	10/24/22 21:46
PREP BATCH	: 22DSJ049W	22DSJ049W	22DSJ049W
CALIBRATION REF:	LJ24024A	LJ24024A	LJ24024A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.65	2.19	83	2.72	2.40	88	9	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.530	0.562	106	0.545	0.581	107	60-130
Hexacosane	0.132	0.131	99	0.136	0.129	95	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

METHOD 3520C/8015B  
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/22/22 13:30
Project     : 380-24805                   Date Received: 10/22/22
Batch No.   : 22J272                       Date Extracted: 10/22/22 13:30
Sample ID   : MBLK1W                       Date Analyzed: 10/24/22 19:18
Lab Samp ID: DSJ049WB                       Dilution Factor: 1
Lab File ID: LJ24029A                       Matrix: WATER
Ext Btch ID: 22DSJ049W                     % Moisture: NA
Calib. Ref.: LJ24025A                       Instrument ID: D5
=====
    
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.493	0.500	99	60-130
Hexacosane	0.132	0.125	106	60-130

Notes:

RL : Reporting Limit  
 Parameter H-C Range  
 JP8 C8-C18  
 Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.  
 Sample Amount : 1000ml Final Volume : 5ml  
 Prepared by : DLi Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA  
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-24805  
BATCH NO. : 22J272  
METHOD : 3520C/8015B

=====

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSJ049WB	J8J049WL
LAB FILE ID	: LJ24029A	LJ24032A
DATE PREPARED	: 10/22/22 13:30	10/22/22 13:30
DATE ANALYZED	: 10/24/22 19:18	10/24/22 20:13
PREP BATCH	: 22DSJ049W	22DSJ049W
CALIBRATION REF:	LJ24025A	LJ24025A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JPB	ND	2.50	2.50	100	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.494	99	60-130
Hexacosane	0.125	0.127	102	60-130

=====

MB: Method Blank sample    LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL  
PROJECT : 380-24009  
BATCH NO. : 22J197  
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-24009-1	380-24009-1MS	380-24009-1MSD
LAB SAMPLE ID	: 22J197-01	22J197-01M	22J197-01S
LAB FILE ID	: LJ24044A	LJ24045A	LJ24046A
DATE PREPARED	: 10/22/22 13:30	10/22/22 13:30	10/22/22 13:30
DATE ANALYZED	: 10/24/22 23:55	10/25/22 00:13	10/25/22 00:32
PREP BATCH	: 22DSJ049W	22DSJ049W	22DSJ049W
CALIBRATION REF:	LJ24025A	LJ24025A	LJ24025A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.65	2.71	102	2.80	2.97	106	9	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.530	0.540	102	0.560	0.534	95	60-130
Hexacosane	0.132	0.147	111	0.140	0.152	109	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate



LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-24805

METHOD SW8015C  
ALCOHOLS BY GC

SDG#: 22J272

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CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-24805

SDG : 22J272

METHOD SW8015C  
ALCOHOLS BY GC

One(1) water sample was received on 10/19/22 to be analyzed for Alcohols by GC in accordance with Method SW8015C and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. MEJ004WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. MEJ004WL/MEJ004WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Ethanol was within MS QC limits in J272-01M/J272-01S. Refer to Matrix QC summary form for details.

Sample Analysis

The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.



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# SAMPLE RESULTS

METHOD SW8015C  
ALCOHOLS BY GC

```

=====
Client      : EUROFINS EATON ANALYTICAL      Date Collected: 10/17/22
Project     : 380-24805                      Date Received: 10/19/22
Batch No.   : 22J272                        Date Extracted: NA
Sample ID   : 380-24805-1                   Date Analyzed: 10/21/22 14:13
Lab Samp ID: J272-01                        Dilution Factor: 1
Lab File ID: TJ21007A                      Matrix          : WATER
Ext Btch ID: MEJ004W                       % Moisture      : NA
Calib. Ref.: TJ21002A                      Instrument ID   : GCT050
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANOL	ND	2000	500

RL : Reporting Limit



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# QC SUMMARIES

METHOD SW8015C  
ALCOHOLS BY GC

```

=====
Client      : EUROFINS EATON ANALYTICAL      Date Collected: NA
Project     : 380-24805                      Date Received: NA
Batch No.   : 22J272                          Date Extracted: NA
Sample ID   : MBLK1W                          Date Analyzed: 10/21/22 13:33
Lab Samp ID: MEJ004WB                         Dilution Factor: 1
Lab File ID: TJ21004A                         Matrix          : WATER
Ext Btch ID: MEJ004W                           % Moisture     : NA
Calib. Ref.: TJ21002A                         Instrument ID   : GCT050
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANOL	ND	2000	500

RL : Reporting Limit



EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL  
PROJECT: 380-24805  
BATCH NO.: 22J272  
METHOD: METHOD SW8015C

=====

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: MBLK1W  
LAB SAMP ID: MEJ004WB MEJ004WL MEJ004WC  
LAB FILE ID: TJ21004A TJ21005A TJ21006A  
DATE EXTRACTED: NA NA NA DATE COLLECTED: NA  
DATE ANALYZED: 10/21/2213:33 10/21/2213:47 10/21/2214:00 DATE RECEIVED: NA  
PREP. BATCH: MEJ004W MEJ004W MEJ004W  
CALIB. REF: TJ21002A TJ21002A TJ21002A

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD ( % )	QC LIMIT ( % )	MAX RPD ( % )
Ethanol	ND	10000	10300	103	10000	10300	103	0	60-130	30



EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL  
PROJECT: 380-24805  
BATCH NO.: 22J272  
METHOD: METHOD SW8015C

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: 380-24805-1  
LAB SAMP ID: J272-01 J272-01M J272-01S  
LAB FILE ID: TJ21007A TJ21008A TJ21009A  
DATE EXTRACTED: NA NA NA DATE COLLECTED: 10/17/22  
DATE ANALYZED: 10/21/2214:13 10/21/2214:40 10/21/2214:56 DATE RECEIVED: 10/19/22  
PREP. BATCH: MEJ004W MEJ004W MEJ004W  
CALIB. REF: TJ21002A TJ21002A TJ21002A

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD ( % )	QC LIMIT ( % )	MAX RPD ( % )
Ethanol	ND	10000	10000	100	10000	11100	111	10	60-130	30

December 07, 2022

Debbie Frank  
 Eurofins Eaton Analytical  
 750 Royal Oaks Drive  
 Suite 100  
 Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-24805-1  
 Physis Project ID: 1407003-322

Dear Debbie,


Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 10/19/2022. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was 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
Base/Neutral Extractable Compounds by EPA 625.1
Acid Extractable Compounds w/ PAHs by EPA 625.1
6-tert-Butyl-2,4-dimethylphenol by EPA 625.1
2,6-Di-tert-butylphenol by EPA 625.1
2,6-Di-tert-butyl-4-methylphenol by EPA 625.1
p-tert-Butylphenol 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,

  
 Misty Mercier  
 714 602-5320  
 Extension 202  
 mistymercier@physislabs.com

## PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-322

RED-HILL Project # 38001111 Job # 380-24805-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
100922	AIEA GULCH WELLS PUMP	331-202-TP072 (380-24805-1)	10/17/202	11:04	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.

## 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.



# ANALYTICALS

# REPORT

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## Acid Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 100922-R1</b>	<b>AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater</b>						<b>Sampled:</b>	<b>17-Oct-22 11:04</b>	<b>Received:</b>	<b>19-Oct-22</b>	
(2,4,6-Tribromophenol)	EPA 625.1	% Recovery	95	1			Total		O-40006	20-Oct-22	14-Nov-22
(d5-Phenol)	EPA 625.1	% Recovery	33	1			Total		O-40006	20-Oct-22	14-Nov-22
2,4,5-Trichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2,4,6-Trichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2,4-Dichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2,4-Dinitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
2,6-Dichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2,6-Di-tert-butyl-4-methylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2,6-Di-tert-butylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2-Chlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2-Methyl-4,6-dinitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
2-Methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
2-Nitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
3+4-Methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
4-Chloro-3-methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
4-Nitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
6-tert-butyl-2,4-dimethylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Benzoic Acid	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
Benzyl Alcohol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
Pentachlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Phenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40006	20-Oct-22	14-Nov-22
p-tert-Butylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22

## Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 100922-R1</b>	<b>AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater</b>						<b>Sampled:</b>	<b>17-Oct-22 11:04</b>	<b>Received:</b>	<b>19-Oct-22</b>	
2-Chloronaphthalene	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
2-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
3-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
4-Bromophenylphenyl ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
4-Chloroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
4-Chlorophenylphenyl ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
4-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Aniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Benzidine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Bis(2-Chloroethoxy) methane	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Bis(2-Chloroethyl) ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Bis(2-Chloroisopropyl) ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
D benzofuran	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Hexachloroethane	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
Nitrobenzene	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
N-Nitrosodi-n-propylamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22
N-Nitrosodiphenylamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40006	20-Oct-22	14-Nov-22

## Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
<b>Sample ID: 100922-R1</b>	<b>AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater</b>						<b>Sampled:</b>	<b>17-Oct-22 11:04</b>	<b>Received:</b>	<b>19-Oct-22</b>	
(d10-Acenaphthene)	EPA 625.1	% Recovery	78	1			Total		O-40006	20-Oct-22	14-Nov-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	94	1			Total		O-40006	20-Oct-22	14-Nov-22
(d12-Chrysene)	EPA 625.1	% Recovery	106	1			Total		O-40006	20-Oct-22	14-Nov-22
(d12-Perylene)	EPA 625.1	% Recovery	97	1			Total		O-40006	20-Oct-22	14-Nov-22
(d8-Naphthalene)	EPA 625.1	% Recovery	69	1			Total		O-40006	20-Oct-22	14-Nov-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22

### 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-40006	20-Oct-22	14-Nov-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40006	20-Oct-22	14-Nov-22



# QUALITY CONTROL REPORT

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## Acid Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE
							LEVEL	RESULT	% LIMITS	% LIMITS	
<b>Sample ID: 100921-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>		
		Method: EPA 625.1				Batch ID: O-40006	Prepared: 18-Oct-22		Analyzed: 13-Nov-22		
(2,4,6-Tribromophenol)	Total	73	1			% Recovery	100	73	30 - 130%	PASS	
(d5-Phenol)	Total	115	1			% Recovery	100	115	0 - 130%	PASS	
2,4,5-Trichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,4,6-Trichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,4-Dichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,4-Dinitrophenol	Total	ND	1	0.1	0.2	µg/L					
2,6-Dichlorophenol	Total	ND	1	0.05	0.1	µg/L					
2,6-Di-tert-butyl-4-methylphenol	Total	ND	1	0.05	0.1	µg/L					
2,6-Di-tert-butylphenol	Total	ND	1	0.05	0.1	µg/L					
2-Chlorophenol	Total	ND	1	0.05	0.1	µg/L					
2-Methyl-4,6-dinitrophenol	Total	ND	1	0.1	0.2	µg/L					
2-Methylphenol	Total	ND	1	0.1	0.2	µg/L					
2-Nitrophenol	Total	ND	1	0.1	0.2	µg/L					
3+4-Methylphenol	Total	ND	1	0.1	0.2	µg/L					
4-Chloro-3-methylphenol	Total	ND	1	0.1	0.2	µg/L					
4-Nitrophenol	Total	ND	1	0.1	0.2	µg/L					
6-tert-butyl-2,4-dimethylphenol	Total	ND	1	0.05	0.1	µg/L					
Benzoic Acid	Total	ND	1	0.1	0.2	µg/L					
Benzyl Alcohol	Total	ND	1	0.1	0.2	µg/L					
Pentachlorophenol	Total	ND	1	0.05	0.1	µg/L					
Phenol	Total	ND	1	0.1	0.2	µg/L					
p-tert-Butylphenol	Total	ND	1	0.05	0.1	µg/L					



## Acid Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODE
							LEVEL	RESULT	%	LIMITS	%	LIMITS
<b>Sample ID: 100921-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
Method: EPA 625.1		Batch ID: O-40006			Prepared: 18-Oct-22		Analyzed: 13-Nov-22					
(2,4,6-Tribromophenol)	Total	79	1			% Recovery	100	0	79	30 - 130%	PASS	
(d5-Phenol)	Total	78	1			% Recovery	100	0	78	0 - 130%	PASS	
2,4,5-Trichlorophenol	Total	0.756	1	0.05	0.1	µg/L	1	0	76	30 - 130%	PASS	
2,4,6-Trichlorophenol	Total	0.778	1	0.05	0.1	µg/L	1	0	78	56 - 118%	PASS	
2,4-Dichlorophenol	Total	0.787	1	0.05	0.1	µg/L	1	0	79	51 - 117%	PASS	
2,4-Dinitrophenol	Total	0.495	1	0.1	0.2	µg/L	1	0	50	0 - 152%	PASS	
2,6-Dichlorophenol	Total	0.783	1	0.05	0.1	µg/L	1	0	78	30 - 130%	PASS	
2,6-Di-tert-butyl-4-methylphenol	Total	0.626	1	0.05	0.1	µg/L	1	0	63	50 - 150%	PASS	
2,6-Di-tert-butylphenol	Total	0.688	1	0.05	0.1	µg/L	1	0	69	50 - 150%	PASS	
2-Chlorophenol	Total	0.794	1	0.05	0.1	µg/L	1	0	79	41 - 110%	PASS	
2-Methyl-4,6-dinitrophenol	Total	0.706	1	0.1	0.2	µg/L	1	0	71	0 - 141%	PASS	
2-Methylphenol	Total	0.898	1	0.1	0.2	µg/L	1	0	90	40 - 117%	PASS	
2-Nitrophenol	Total	0.591	1	0.1	0.2	µg/L	1	0	59	40 - 117%	PASS	
3+4-Methylphenol	Total	0.804	1	0.1	0.2	µg/L	1	0	80	0 - 130%	PASS	
4-Chloro-3-methylphenol	Total	0.716	1	0.1	0.2	µg/L	1	0	72	51 - 128%	PASS	
4-Nitrophenol	Total	0.423	1	0.1	0.2	µg/L	1	0	42	10 - 164%	PASS	
6-tert-butyl-2,4-dimethylphenol	Total	0.68	1	0.05	0.1	µg/L	1	0	68	50 - 150%	PASS	
Benzyl Alcohol	Total	0.816	1	0.1	0.2	µg/L	1	0	82	43 - 148%	PASS	
Pentachlorophenol	Total	0.525	1	0.05	0.1	µg/L	1	0	52	36 - 111%	PASS	
Phenol	Total	0.779	1	0.1	0.2	µg/L	1	0	78	29 - 114%	PASS	
p-tert-Butylphenol	Total	0.798	1	0.05	0.1	µg/L	1	0	80	50 - 150%	PASS	



## Acid 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: 100921-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>			<b>Received:</b>				
		Method: EPA 625.1			Batch ID: O-40006			Prepared: 18-Oct-22			Analyzed: 13-Nov-22				
(2,4,6-Tribromophenol)	Total	77	1				% Recovery	100	0	77	30 - 130%	PASS	3	30	PASS
(d5-Phenol)	Total	60	1				% Recovery	100	0	60	0 - 130%	PASS	26	30	PASS
2,4,5-Trichlorophenol	Total	0.64	1	0.05	0.1	µg/L		1	0	64	30 - 130%	PASS	17	30	PASS
2,4,6-Trichlorophenol	Total	0.703	1	0.05	0.1	µg/L		1	0	70	56 - 118%	PASS	11	30	PASS
2,4-Dichlorophenol	Total	0.649	1	0.05	0.1	µg/L		1	0	65	51 - 117%	PASS	19	30	PASS
2,4-Dinitrophenol	Total	0.533	1	0.1	0.2	µg/L		1	0	53	0 - 152%	PASS	6	30	PASS
2,6-Dichlorophenol	Total	0.676	1	0.05	0.1	µg/L		1	0	68	30 - 130%	PASS	14	30	PASS
2,6-Di-tert-butyl-4-methylphenol	Total	0.513	1	0.05	0.1	µg/L		1	0	51	50 - 150%	PASS	21	30	PASS
2,6-Di-tert-butylphenol	Total	0.598	1	0.05	0.1	µg/L		1	0	60	50 - 150%	PASS	14	30	PASS
2-Chlorophenol	Total	0.629	1	0.05	0.1	µg/L		1	0	63	41 - 110%	PASS	23	30	PASS
2-Methyl-4,6-dinitrophenol	Total	0.743	1	0.1	0.2	µg/L		1	0	74	0 - 141%	PASS	4	30	PASS
2-Methylphenol	Total	0.769	1	0.1	0.2	µg/L		1	0	77	40 - 117%	PASS	16	30	PASS
2-Nitrophenol	Total	0.528	1	0.1	0.2	µg/L		1	0	53	40 - 117%	PASS	11	30	PASS
3+4-Methylphenol	Total	0.642	1	0.1	0.2	µg/L		1	0	64	0 - 130%	PASS	22	30	PASS
4-Chloro-3-methylphenol	Total	0.673	1	0.1	0.2	µg/L		1	0	67	51 - 128%	PASS	7	30	PASS
4-Nitrophenol	Total	0.375	1	0.1	0.2	µg/L		1	0	38	10 - 164%	PASS	10	30	PASS
6-tert-butyl-2,4-dimethylphenol	Total	0.671	1	0.05	0.1	µg/L		1	0	67	50 - 150%	PASS	1	30	PASS
Benzyl Alcohol	Total	0.625	1	0.1	0.2	µg/L		1	0	62	43 - 148%	PASS	28	30	PASS
Pentachlorophenol	Total	0.563	1	0.05	0.1	µg/L		1	0	56	36 - 111%	PASS	7	30	PASS
Phenol	Total	0.59	1	0.1	0.2	µg/L		1	0	59	29 - 114%	PASS	28	30	PASS
p-tert-Butylphenol	Total	0.718	1	0.05	0.1	µg/L		1	0	72	50 - 150%	PASS	11	30	PASS

## Base/Neutral Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE
							LEVEL	RESULT	%	LIMITS	%
<b>Sample ID: 100921-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>		<b>Sampled:</b>		<b>Received:</b>		
		Method: EPA 625.1			Batch ID: O-40006		Prepared: 18-Oct-22		Analyzed: 13-Nov-22		
2-Chloronaphthalene	Total	ND	1	0.05	0.1	µg/L					
2-Nitroaniline	Total	ND	1	0.05	0.1	µg/L					
3-Nitroaniline	Total	ND	1	0.05	0.1	µg/L					
4-Bromophenylphenyl ether	Total	ND	1	0.05	0.1	µg/L					
4-Chloroaniline	Total	ND	1	0.05	0.1	µg/L					
4-Chlorophenylphenyl ether	Total	ND	1	0.05	0.1	µg/L					
4-Nitroaniline	Total	ND	1	0.05	0.1	µg/L					
Aniline	Total	ND	1	0.05	0.1	µg/L					
Benzidine	Total	ND	1	0.05	0.1	µg/L					
Bis(2-Chloroethoxy) methane	Total	ND	1	0.05	0.1	µg/L					
Bis(2-Chloroethyl) ether	Total	ND	1	0.05	0.1	µg/L					
Bis(2-Chloroisopropyl) ether	Total	ND	1	0.05	0.1	µg/L					
Dibenzofuran	Total	ND	1	0.05	0.1	µg/L					
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L					
Hexachloroethane	Total	ND	1	0.05	0.1	µg/L					
Nitrobenzene	Total	ND	1	0.05	0.1	µg/L					
N-Nitrosodi-n-propylamine	Total	ND	1	0.05	0.1	µg/L					
N-Nitrosodiphenylamine	Total	ND	1	0.05	0.1	µg/L					

## Base/Neutral Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc
									%	LIMITS	%	LIMITS	
<b>Sample ID: 100921-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>			
		Method: EPA 625.1			Batch ID: O-40006			Prepared: 18-Oct-22		Analyzed: 13-Nov-22			
2-Chloronaphthalene	Total	0.827	1	0.05	0.1	µg/L	1	0	83	53 - 130%	PASS		
2-Nitroaniline	Total	0.824	1	0.05	0.1	µg/L	1	0	82	69 - 114%	PASS		
3-Nitroaniline	Total	0.735	1	0.05	0.1	µg/L	1	0	74	23 - 137%	PASS		
4-Bromophenylphenyl ether	Total	0.931	1	0.05	0.1	µg/L	1	0	93	61 - 132%	PASS		
4-Chloroaniline	Total	1.18	1	0.05	0.1	µg/L	1	0	118	50 - 150%	PASS		
4-Chlorophenylphenyl ether	Total	0.921	1	0.05	0.1	µg/L	1	0	92	63 - 130%	PASS		
4-Nitroaniline	Total	1.06	1	0.05	0.1	µg/L	1	0	106	10 - 159%	PASS		
Aniline	Total	1.06	1	0.05	0.1	µg/L	1	0	106	50 - 150%	PASS		
Bis(2-Chloroethoxy) methane	Total	0.875	1	0.05	0.1	µg/L	1	0	88	66 - 122%	PASS		
Bis(2-Chloroethyl) ether	Total	0.802	1	0.05	0.1	µg/L	1	0	80	43 - 127%	PASS		
Bis(2-Chloroisopropyl) ether	Total	1.63	1	0.05	0.1	µg/L	2	0	81	49 - 128%	PASS		
Dibenzofuran	Total	0.89	1	0.05	0.1	µg/L	1	0	89	50 - 150%	PASS		
Disalicylidenepropanediamin	Total	20.7	1	0.05	0.1	µg/L	25	0	83	50 - 150%	PASS		
Hexachloroethane	Total	0.928	1	0.05	0.1	µg/L	1	0	93	27 - 130%	PASS		
Nitrobenzene	Total	0.845	1	0.05	0.1	µg/L	1	0	85	54 - 111%	PASS		
N-Nitrosodi-n-propylamine	Total	0.775	1	0.05	0.1	µg/L	1	0	77	61 - 152%	PASS		
N-Nitrosodiphenylamine	Total	0.81	1	0.05	0.1	µg/L	1	0	81	49 - 142%	PASS		

## Base/Neutral Extractable Compounds

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc	
									%	LIMITS	%	LIMITS		
<b>Sample ID: 100921-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>				
		Method: EPA 625.1			Batch ID: O-40006			Prepared: 18-Oct-22		Analyzed: 13-Nov-22				
2-Chloronaphthalene	Total	0.774	1	0.05	0.1	µg/L	1	0	77	53 - 130%	PASS	8	30	PASS
2-Nitroaniline	Total	0.815	1	0.05	0.1	µg/L	1	0	81	69 - 114%	PASS	0	30	PASS
3-Nitroaniline	Total	0.63	1	0.05	0.1	µg/L	1	0	63	23 - 137%	PASS	16	30	PASS
4-Bromophenylphenyl ether	Total	0.917	1	0.05	0.1	µg/L	1	0	92	61 - 132%	PASS	1	30	PASS
4-Chloroaniline	Total	0.989	1	0.05	0.1	µg/L	1	0	99	50 - 150%	PASS	18	30	PASS
4-Chlorophenylphenyl ether	Total	0.788	1	0.05	0.1	µg/L	1	0	79	63 - 130%	PASS	15	30	PASS
4-Nitroaniline	Total	1.06	1	0.05	0.1	µg/L	1	0	106	10 - 159%	PASS	0	30	PASS
Aniline	Total	0.889	1	0.05	0.1	µg/L	1	0	89	50 - 150%	PASS	17	30	PASS
Bis(2-Chloroethoxy) methane	Total	0.723	1	0.05	0.1	µg/L	1	0	72	66 - 122%	PASS	20	30	PASS
Bis(2-Chloroethyl) ether	Total	0.611	1	0.05	0.1	µg/L	1	0	61	43 - 127%	PASS	27	30	PASS
Bis(2-Chloroisopropyl) ether	Total	1.24	1	0.05	0.1	µg/L	2	0	62	49 - 128%	PASS	28	30	PASS
Dibenzofuran	Total	0.689	1	0.05	0.1	µg/L	1	0	69	50 - 150%	PASS	25	30	PASS
Disalicylidenepropanediamin	Total	24	1	0.05	0.1	µg/L	25	0	96	50 - 150%	PASS	15	30	PASS
Hexachloroethane	Total	0.715	1	0.05	0.1	µg/L	1	0	71	27 - 130%	PASS	25	30	PASS
Nitrobenzene	Total	0.656	1	0.05	0.1	µg/L	1	0	66	54 - 111%	PASS	24	30	PASS
N-Nitrosodi-n-propylamine	Total	0.662	1	0.05	0.1	µg/L	1	0	66	61 - 152%	PASS	17	30	PASS
N-Nitrosodiphenylamine	Total	0.775	1	0.05	0.1	µg/L	1	0	77	49 - 142%	PASS	4	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: 100921-B1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
Method: EPA 625.1		Batch ID: O-40006			Prepared: 18-Oct-22		Analyzed: 13-Nov-22					
(d10-Acenaphthene)	Total	92	1			% Recovery	100	92	27 - 133%	PASS		
(d10-Phenanthrene)	Total	92	1			% Recovery	100	92	43 - 129%	PASS		
(d12-Chrysene)	Total	82	1			% Recovery	100	82	52 - 144%	PASS		
(d12-Perylene)	Total	84	1			% Recovery	100	84	36 - 161%	PASS		
(d8-Naphthalene)	Total	91	1			% Recovery	100	91	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						
Dibenzothiophene	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 CODE <sub>c</sub>
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
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 CODE <sub>c</sub>
							LEVEL	RESULT	%	LIMITS	%	LIMITS
<b>Sample ID: 100921-BS1</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>		<b>Received:</b>		
Method: EPA 625.1		Batch ID: O-40006			Prepared: 18-Oct-22		Analyzed: 13-Nov-22					
(d10-Acenaphthene)	Total	85	1			% Recovery	100	0	85	27 - 133%	PASS	
(d10-Phenanthrene)	Total	91	1			% Recovery	100	0	91	43 - 129%	PASS	
(d12-Chrysene)	Total	91	1			% Recovery	100	0	91	52 - 144%	PASS	
(d12-Perylene)	Total	92	1			% Recovery	100	0	92	36 - 161%	PASS	
(d8-Naphthalene)	Total	78	1			% Recovery	100	0	78	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.404	1	0.001	0.005	µg/L	0.5	0	81	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.425	1	0.001	0.005	µg/L	0.5	0	85	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.416	1	0.001	0.005	µg/L	0.5	0	83	48 - 120%	PASS	
2-Methylnaphthalene	Total	1.29	1	0.001	0.005	µg/L	1.5	0	86	47 - 130%	PASS	
Acenaphthene	Total	1.34	1	0.001	0.005	µg/L	1.5	0	89	53 - 131%	PASS	
Acenaphthylene	Total	1.37	1	0.001	0.005	µg/L	1.5	0	91	43 - 140%	PASS	
Anthracene	Total	1.47	1	0.001	0.005	µg/L	1.5	0	98	58 - 135%	PASS	
Benz[a]anthracene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	55 - 145%	PASS	
Benzo[a]pyrene	Total	1.45	1	0.001	0.005	µg/L	1.5	0	97	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	1.51	1	0.001	0.005	µg/L	1.5	0	101	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	1.54	1	0.001	0.005	µg/L	1.5	0	103	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	1.41	1	0.001	0.005	µg/L	1.5	0	94	56 - 145%	PASS	
Biphenyl	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	56 - 119%	PASS	
Chrysene	Total	1.46	1	0.001	0.005	µg/L	1.5	0	97	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.171	1	0.001	0.005	µg/L	0.25	0	68	50 - 150%	PASS	
Dibenzothiophene	Total	0.457	1	0.001	0.005	µg/L	0.5	0	91	75 - 113%	PASS	

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE <sub>c</sub>
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	60 - 146%	PASS		
Fluorene	Total	1.42	1	0.001	0.005	µg/L	1.5	0	95	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	50 - 151%	PASS		
Naphthalene	Total	1.23	1	0.001	0.005	µg/L	1.5	0	82	41 - 126%	PASS		
Perylene	Total	0.476	1	0.001	0.005	µg/L	0.5	0	95	48 - 141%	PASS		
Phenanthrene	Total	1.45	1	0.001	0.005	µg/L	1.5	0	97	67 - 127%	PASS		
Pyrene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	54 - 156%	PASS		



## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc	
									%	LIMITS	%	LIMITS		
<b>Sample ID: 100921-BS2</b>		<b>QAQC Procedural Blank</b>			<b>Matrix: BlankMatrix</b>			<b>Sampled:</b>			<b>Received:</b>			
Method: EPA 625.1		Batch ID: O-40006			Prepared: 18-Oct-22			Analyzed: 13-Nov-22						
(d10-Acenaphthene)	Total	71	1			% Recovery	100	0	71	27 - 133%	PASS	18	30	PASS
(d10-Phenanthrene)	Total	93	1			% Recovery	100	0	93	43 - 129%	PASS	2	30	PASS
(d12-Chrysene)	Total	93	1			% Recovery	100	0	93	52 - 144%	PASS	2	30	PASS
(d12-Perylene)	Total	97	1			% Recovery	100	0	97	36 - 161%	PASS	5	30	PASS
(d8-Naphthalene)	Total	68	1			% Recovery	100	0	68	25 - 125%	PASS	14	30	PASS
1-Methylnaphthalene	Total	0.383	1	0.001	0.005	µg/L	0.5	0	77	31 - 128%	PASS	5	30	PASS
1-Methylphenanthrene	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	66 - 127%	PASS	1	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.366	1	0.001	0.005	µg/L	0.5	0	73	55 - 122%	PASS	15	30	PASS
2,6-Dimethylnaphthalene	Total	0.399	1	0.001	0.005	µg/L	0.5	0	80	48 - 120%	PASS	4	30	PASS
2-Methylnaphthalene	Total	1.15	1	0.001	0.005	µg/L	1.5	0	77	47 - 130%	PASS	11	30	PASS
Acenaphthene	Total	1.13	1	0.001	0.005	µg/L	1.5	0	75	53 - 131%	PASS	17	30	PASS
Acenaphthylene	Total	1.17	1	0.001	0.005	µg/L	1.5	0	78	43 - 140%	PASS	15	30	PASS
Anthracene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	58 - 135%	PASS	3	30	PASS
Benz[a]anthracene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	55 - 145%	PASS	1	30	PASS
Benzo[a]pyrene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	51 - 143%	PASS	5	30	PASS
Benzo[b]fluoranthene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	46 - 165%	PASS	1	30	PASS
Benzo[e]pyrene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	42 - 152%	PASS	3	30	PASS
Benzo[g,h,i]perylene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	63 - 133%	PASS	2	30	PASS
Benzo[k]fluoranthene	Total	1.42	1	0.001	0.005	µg/L	1.5	0	95	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	56 - 119%	PASS	4	30	PASS
Chrysene	Total	1.46	1	0.001	0.005	µg/L	1.5	0	97	56 - 141%	PASS	0	30	PASS
Dibenz[a,h]anthracene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	55 - 150%	PASS	3	30	PASS
Dibenzo[a,l]pyrene	Total	0.185	1	0.001	0.005	µg/L	0.25	0	74	50 - 150%	PASS	8	30	PASS
Dibenzothiophene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	75 - 113%	PASS	5	30	PASS

## Polynuclear Aromatic Hydrocarbons

## QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE <sub>c</sub>	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	1.63	1	0.001	0.005	µg/L	1.5	0	109	60 - 146%	PASS	3	30	PASS
Fluorene	Total	1.25	1	0.001	0.005	µg/L	1.5	0	83	58 - 131%	PASS	13	30	PASS
Indeno[1,2,3-cd]pyrene	Total	1.67	1	0.001	0.005	µg/L	1.5	0	111	50 - 151%	PASS	5	30	PASS
Naphthalene	Total	1.06	1	0.001	0.005	µg/L	1.5	0	71	41 - 126%	PASS	14	30	PASS
Perylene	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	48 - 141%	PASS	6	30	PASS
Phenanthrene	Total	1.48	1	0.001	0.005	µg/L	1.5	0	99	67 - 127%	PASS	2	30	PASS
Pyrene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	54 - 156%	PASS	0	30	PASS

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**PHYSICS**

**TENTATIVELY**

**IDENTIFIED COMPOUNDS**

ENVIRONMENTAL LABORATORIES, INC.

*Innovative Solutions for Nature*

Sample ID: 100922

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.2430	7.5826	1111	Anthracene-D10-	1517-22-2	96
29.2433	4.4005	645	Benzoic acid, 2-ethylhexyl ester	5444-75-7	99
41.3279	1.5052	221	Cyclic octaatomic sulfur	10544-50-0	98

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank B1\_40006

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.2467	6.6606	1111	Anthracene-D10-	1517-22-2	96
No TICs met the search criteria in this sample					

Concentration estimated using the response for Anthracene-d10

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# PERFORMANCE CHAIN OF CUSTODY

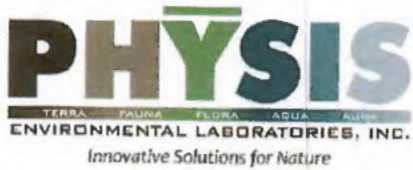
TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

*Innovative Solutions for Nature*

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Project Iteration ID: 1407003-322  
 Client Name: Eurofins Eaton Analytical  
 Project Name: RED-HILL Project # 38001111 Job # 380-24805-1  
 COC Page Number: 2 of 2  
 Bottle Label Color: NA

### Sample Receipt Summary

#### Receiving Info

- Initials Received By: AG
- Date Received: 10/19/22
- Time Received: 13:49
- Client Name: Eurofins (Red Hill)
- Courier Information: (Please circle)
  - Client
  - UPS
  - Area Fast
  - DRS
  - FedEx
  - GSO/GLS
  - Ontrac
  - PAMS
  - PHYSIS Driver:
    - Start Time: \_\_\_\_\_
    - End Time: \_\_\_\_\_
    - Total Mileage: \_\_\_\_\_
    - Number of Pickups: \_\_\_\_\_
- Container Information: (Please put the # of containers or circle none)
  - Cooler
  - Styrofoam Cooler
  - Boxes
  - None
  - Carboy(s)
  - Carboy Trash Can(s)
  - Carboy Cap(s)
  - Other \_\_\_\_\_
- What type of ice was used: (Please circle any that apply)
  - Wet Ice
  - Blue Ice
  - Dry Ice
  - Water
  - None
- Randomly Selected Samples Temperature (°C): 1.8 Used I/R Thermometer # 1

#### Inspection Info

- Initials Inspected By: RGH

#### Sample Integrity Upon Receipt:

- COC(s) included and completely filled out.....  Yes / No
- All sample containers arrived intact.....  Yes / No
- All samples listed on COC(s) are present.....  Yes / No
- Information on containers consistent with information on COC(s).....  Yes / No
- Correct containers and volume for all analyses indicated.....  Yes / No
- All samples received within method holding time.....  Yes / No
- Correct preservation used for all analyses indicated.....  Yes / No
- Name of sampler included on COC(s)..... Yes /  No

Notes:









**Bottle Order Information**

Bottle Order: RED-HILL - Quarterly  
 Bottle Order #: 1845  
 Request From Client: 9/14/2022  
 Date Order Posted: 6/23/2022 7:29:27AM  
 Order Status: Ready To Process  
 Prepared By: Davis Haley  
 Deliver By Date: 9/23/2022 11:59:00PM  
 Lab Project Number: 38001111  
 PWSID: HI00000331-201-TP071, HI00000331-202-TP072, HI00000

**Order Completion Information**

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

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
7	6	42	Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	504.1_PREC - Local Method	Water	Normal		
					505_LL_PREC - (MOD) ML505 +505-EAL Aldrin Dieldrin Tox	Water	Normal		
7	1	7	Plastic 250ml - unpreserved	None	2320B - (MOD) Total Alkalinity	Water	Normal		
					SM4500_H+ - Local Method	Water	Normal		
					2510B - Conductivity	Water	Normal		
7	1	7	Plastic 500ml - with Nitric Acid	Nitric Acid	200.8 - Metals, Priority Pollutant by 200.8	Water	Normal		
					200.7 - (MOD) Custom	Water	Normal		
7	1	7	Plastic 500ml - unpreserved	None	2540C_Calcd - Total Dissolved Solids (TDS)	Water	Normal		
7	1	7	Plastic 250ml - with Zinc Acetate & NaOH	Zinc Acetate and Sodium Hydroxide	SM4500_S2_D - Sulfide, Total	Water	Normal		
7	6	42	Voa Vial 40ml Amber - Ascor. Acid & HCL	Ascorbic Acid and Hydrochloric Acid	524.2_Pres_PREC - VOASDWA plus TICs + Acetone	Water	Normal		
					524.2_SIM_PREC - TBA by 524.2 SIM	Water	Normal		
7	3	21	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - 525plus Plus TICs	Water	Normal		
7	2	14	Plastic 125mL - unpreserved	None	300_OF_28D_B - Bromide	Water	Normal		
					4500_F_C - Fluoride	Water	Normal		
					300_OF_28D_PREC - Chloride and Sulfate	Water	Normal		
					300_OF_48H_PREC - Nitrite, Nitrate, and Nitrite+Nitrate	Water	Normal		
7	1	7	Plastic 250ml - with Nitric Acid	Nitric Acid	245.1 - Local Method	Water	Normal		

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





7	2	14	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Jet Fuel 8 (JP8)	Water	Normal		
7	2	14	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Jet Fuel 5 (JP5)	Water	Normal		
7	2	14	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
7	3	21	Voa Vial 40ml - SodiumThio w/HCL-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
7	3	21	Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 8015 Ethanol	Water	Normal		
7	2	14	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal		
7	2	14	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 Base Neutral LL (EAL) Physis	Water	Normal		
7	2	14	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 Acid LL (EAL) Physis	Water	Normal		
7	3	21	Voa Vial 40ml Amber - Ascorbic & Maleic	Ascorbic Acid/Maleic	524.3_SIM_PREC - Low Level TCP/EDB/DBCP	Water	Normal		
7	2	14	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/H ydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
7	6	42	Voa Vial 40ml Amber - Ascor. Acid & HCL	Ascorbic Acid and Hydrochloric Acid	524.2_Pres_PREC - VOASDWA plus TICs + Acetone	Water	Trip Blank		
					524.2_SIM_PREC - TBA by 524.2 SIM	Water	Trip Blank		
7	3	21	Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	504.1_PREC - Local Method	Water	Trip Blank		
7	2	14	Voa Vial 40ml Amber - Ascorbic & Maleic	Ascorbic Acid/Maleic	524.3_SIM_PREC - Low Level TCP/EDB/DBCP	Water	Trip Blank		

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**Total Bottle Summary**

<b>Bottle Type Description</b>	<b>Preservative</b>	<b>Bottle Count</b>
Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	42
Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	42
Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	21
Plastic 125mL - unpreserved	None	14
Plastic 250ml - unpreserved	None	7
Plastic 250ml - with Nitric Acid	Nitric Acid	7
Plastic 250ml - with Zinc Acetate & NaOH	Zinc Acetate and Sodium Hydroxide	7
Plastic 500ml - unpreserved	None	7
Plastic 500ml - with Nitric Acid	Nitric Acid	7
VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	14
Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	21
Voa Vial 40ml Amber - Ascor. Acid & HCL	Ascorbic Acid and Hydrochloric Acid	84
Voa Vial 40ml Amber - Ascorbic & Maleic	Ascorbic Acid/Maleic	35
Voa Vial 40ml Amber - Sodium thiosulfate	Sodium Thiosulfate	84
<b>Total Bottles:</b>		<b>392</b>

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**Notes to Field Staff:**



Scan QR code for field sampler instructions

SAMPLER FOLLOW 2 STAGE FIELD PRESERVATION FOR 625, 8015, 524.2, and 525.2

FOLLOW 2 STAGE FIELD PRESERVATION FOR 8015, 525.2, 524.2

USE ALTERNATE SAMPLING POINTS FOR:

(331-203-TP400) AIEA WELLS PUMPS 1&2 (260)  
 AIEA WELLS P\_ (260)-331-00\_-WL10\_ UPDATE  
 BLANKS WITH APPROPRIATE SAMPLE POINT  
 DESCRIPTORS. USE FULL CORRECT ID ON CHAIN OF  
 CUSTODY

AIEA WELLS P1 (260)-331-003-WL102

AIEA WELLS P2 (260)-331-004-WL103

(331-241-TP401) HALAWA SHAFT

Halawa Shaft Viewing Pool

**Health and Safety Notes:**

Preservative	Comment
Ascorbic Acid and Hydrochloric Acid	Contains 25mg/ml Ascorbic Acid. May cause mild irritation to skin and eyes. CAUTION! CONTAINS 1:1 HYDROCHLORIC ACID. Avoid skin and eye contact. If contact made, FLUSH IMMEDIATELY with water.
Ascorbic Acid/Maleic Nitric Acid	CAUTION! May cause eye, skin, and respiratory tract irritation CAUTION! STRONG OXIDIZER! CONTAINS 1:1 NITRIC ACID. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Sulfite w/HCl	CAUTION! CONTAINS SODIUM SULFITE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Thiosulfate	CAUTION! CONTAINS 10% SODIUM THIOSULFATE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Thiosulfate/Hydrochloric Acid	CAUTION! CONTAINS 10% SODIUM THIOSULFATE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. Contains 13.3% Monochloroacetic Acid. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. CAUTION! CONTAINS 1:1 HYDROCHLORIC ACID. Avoid skin and eye contact. If contact made, FLUSH IMMEDIATELY with water.
Zinc Acetate and Sodium Hydroxide	Contains 2N Zinc Acetate. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. CAUTION! STRONG CAUSTIC! CONTAINS SODIUM HYDROXIDE PELLETS. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.

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Relinquished By	Company	Date	Time	Received By	Company	Seal #:
Relinquished By	Company	Date	Time	Received By	Company	Seal #:
						Seal #:
						Seal #:

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# Shipping Order Form - Bottle Order



Environment Testing  
America



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

Shipping Order ID: 15739

Ship Via: FedEx

Due On: 9/23/2022 11:59:00PM

## Ship To Information

Project Manager: *Rachelle Arada*  
Tel: (626) 386-1106 Em: *Rachelle.Arada@et.eurofinsus.com*  
Company Name: *City & County of Honolulu*  
Attention: *Ron Fenstemacher*  
Address 1: *630 South Beretania Street*  
Address 2: *Chemistry Lab*  
Address 3:  
City: *Honolulu*  
State: *HI*  
Zip: *96843*  
Phone #: *+1-808-748-5841*  
Project Ref: *RED-HILL*

## Notes to Bottle/Shipping Department

Pack with Gel Ice  
Label the cooler under the left hand handle with the ID of the samples that are in the cooler (If more than 1 cooler is used per 1 sample ID label cooler with "sample ID x of y")  
Pack by Sample ID on the bottle labels (with one full set of tests per sample ID)  
Send only medium to large coolers  
Travel Blanks must be packed in same cooler with their respective field test (524 travel blanks must be packed with 524 vials)

CALL ROBERT DEAN IF THERE ARE QUESTIONS.

## Shipping Method: Pack by sample set (affixed TALS labels)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Ready to Fill                            | <input type="checkbox"/> Return Shipment Labels         |
| <input checked="" type="checkbox"/> Preprinted COC                           | <input type="checkbox"/> Prepaid Return                 |
| <input type="checkbox"/> <input type="text" value="1"/> Number of COC Copies | Monrovia, CA (Suite 100)                                |
| <input type="checkbox"/> Seals on Bottle                                     | <input type="checkbox"/> Short Hold Times               |
| <input type="checkbox"/> Seals on Coolers                                    | <input checked="" type="checkbox"/> Temperature Control |
| <input type="checkbox"/> Priority  | <input type="checkbox"/> Rush                           |

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### Shipping Assets

Assets	Quantity	Description	Filled
Gel Ice	1	Pack with Gel Ice	<input type="checkbox"/>

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





# Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-24805-1

**Login Number: 24805**

**List Number: 1**

**Creator: Elyas, Matthew**

**List Source: Eurofins Eaton Monrovia**

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

## Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-24805-1

**Login Number: 24805**  
**List Number: 2**  
**Creator: Spurgeon, Sheri**

**List Source: Eurofins Eaton South Bend**  
**List Creation: 10/20/22 01:34 PM**

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