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ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-34925-1

Eurofins Eaton Analytical Pomona

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: 380-34925-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
^3-	Reporting Limit Check Standard is outside acceptance limits, low 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
*1	LCS/LCSD RPD exceeds control limits.
^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
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.

General Chemistry

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.

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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit

Definitions/Glossary

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

Job ID: 380-34925-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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: 380-34925-1

Job ID: 380-34925-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-34925-1

Comments

No additional comments.

Receipt

The samples were received on 1/19/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.6° C, 1.6° C and 2.5° C

Receipt Exceptions

The following samples were received with ice present in the containers. The samples and containers appeared to be intact. AIE GULCH WELLS PUMP 2 (380-34925-1) and TB: AIEA GULCH WELLS PUMP 2 (380-34925-2)

Ice present in the following method containers:

Alkalinity/pH/Conductivity Plastic 250mL unpres.
200.8/200.7 Metals Plastic 500mL (Nitric Acid)
Total Dissolved Solids 2540 Plastic 500mL unpres.
525.2 1 of 3 Amber 1L (Sodium Sulfite/HCl)
Anions 2 of 2 Plastic 125mL unpres.
245.1 Hg Plastic 250mL (Nitric Acid)
8015 Jet Fuel 8 1 of 2 Amber 1L (NaThio/HCl)
8015 Jet Fuel 5 1 of 2 Amber 1L (NaThio/HCl)
8015 Gas 1 of 3 Voa Vial 40mL (SodiumThio/HCl dropper)
625 PAH 2 of 2 Amber 1L (SodiumThio)
625 Base Neutral 1 of 2 Amber 1L (SodiumThio)
625 Acid 1 of 2 Amber 1L (SodiumThio)

Client resampled Alkalinity, pH, Conductivity, 200.8, 200.7, 245.1, Total Dissolved Solids and Anions, these are logged under TA job number 380-43364-1.

GC/MS VOA

Method 524.2: The method reporting limit check (MRL) for analytical batch 380-30675 recovered outside control limits for the following analytes: Acetone. These analytes were biased low in the MRL and were not detected in the associated samples. The sample is the last vial and retest is not possible.

Method 524.2: The laboratory control sample duplicate (LCSD) for analytical batch 380-30675 recovered outside control limits for the following analytes: Naphthalene and 1,2,3-Trichlorobenzene. These analytes were biased high in the LCSD 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 380-30695 recovered above the upper control limit for 1,1,1-Trichloroethane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Bromobenzene, Bromodichloromethane, Bromoethane, Carbon disulfide, Carbon tetrachloride, Isopropylbenzene, m,p-Xylenes, m-Dichlorobenzene (1,3-DCB), N-Propylbenzene, o-Chlorotoluene, p-Chlorotoluene, p-Dichlorobenzene (1,4-DCB), p-Isopropyltoluene, sec-Butylbenzene, tert-Butylbenzene and Trichlorofluoromethane (Freon 11). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 524.2: The method blank for analytical batch 380-30695 contained 1,2,3-Trichlorobenzene above the reporting limit (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.

Case Narrative

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

Job ID: 380-34925-1

Job ID: 380-34925-1 (Continued)

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

GC/MS Semi VOA

Method 525.2: The continuing calibration verification (CCV) associated with batch 380-30427 recovered above the upper control limit for Dieldrin (DDVP) and Di-n-octyl phthalate. 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 Semi VOA

No analytical or quality issues were noted, other than those described 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: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	0.0051		0.0020	ug/L	1		505	Total/NA

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

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Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

Method: EPA-DW 524.2 - Total Trihalomethanes

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trihalomethanes, Total	ND		0.50	ug/L			01/27/23 09:38	1

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			01/20/23 18:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130		01/20/23 18:58	1
4-Bromofluorobenzene (Surr)	97		70 - 130		01/20/23 18:58	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		01/20/23 18:58	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			01/26/23 10:58	1
1,1,1-Trichloroethane	ND		0.50	ug/L			01/26/23 10:58	1
1,1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			01/26/23 10:58	1
1,1,2-Trichloroethane	ND		0.50	ug/L			01/26/23 10:58	1
1,1-Dichloroethylene	ND		0.50	ug/L			01/26/23 10:58	1
1,1-Dichloroethane	ND		0.50	ug/L			01/26/23 10:58	1
1,1-Dichloropropene	ND		0.50	ug/L			01/26/23 10:58	1
1,2,3-Trichlorobenzene	ND	B	0.50	ug/L			01/26/23 10:58	1
1,2,3-Trichloropropane	ND		0.50	ug/L			01/26/23 10:58	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			01/26/23 10:58	1
1,2,4-Trimethy benzene	ND	*+	0.50	ug/L			01/26/23 10:58	1
1,2-Dichloroethane	ND		0.50	ug/L			01/26/23 10:58	1
1,2-Dichloropropane	ND		0.50	ug/L			01/26/23 10:58	1
1,3,5-Trimethy benzene	ND	*+	0.50	ug/L			01/26/23 10:58	1
1,3-Dichloropropane	ND		0.50	ug/L			01/26/23 10:58	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			01/26/23 10:58	1
2,2-Dichloropropane	ND		0.50	ug/L			01/26/23 10:58	1
2-Butanone (MEK)	ND		5.0	ug/L			01/30/23 16:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			01/30/23 16:49	1
Acetone	ND		500	ug/L			01/30/23 16:49	1
Benzene	ND		0.50	ug/L			01/26/23 10:58	1
Bromobenzene	ND	*+	0.50	ug/L			01/26/23 10:58	1
Bromochloromethane	ND		0.50	ug/L			01/26/23 10:58	1
Bromodichloromethane	ND		0.50	ug/L			01/26/23 10:58	1
Bromoethane	ND	*+	0.50	ug/L			01/26/23 10:58	1
Bromoform	ND		0.50	ug/L			01/26/23 10:58	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			01/26/23 10:58	1
Carbon disulfide	ND	*+	0.50	ug/L			01/26/23 10:58	1
Carbon tetrachloride	ND		0.50	ug/L			01/26/23 10:58	1
Chlorobenzene	ND		0.50	ug/L			01/26/23 10:58	1
Chlorodibromomethane	ND		0.50	ug/L			01/26/23 10:58	1
Chloroethane	ND		0.50	ug/L			01/26/23 10:58	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			01/26/23 10:58	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			01/26/23 10:58	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			01/26/23 10:58	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			01/26/23 10:58	1
Dibromomethane	ND		0.50	ug/L			01/26/23 10:58	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.50	ug/L			01/26/23 10:58	1
Dichloromethane	ND		0.50	ug/L			01/26/23 10:58	1
Diisopropyl ether	ND		3.0	ug/L			01/26/23 10:58	1
Ethylbenzene	ND		0.50	ug/L			01/26/23 10:58	1
Hexachlorobutadiene	ND		0.50	ug/L			01/26/23 10:58	1
Isopropyl benzene	ND	*+	0.50	ug/L			01/26/23 10:58	1
m,p-Xylenes	ND		0.50	ug/L			01/26/23 10:58	1
m-Dichlorobenzene (1,3-DCB)	ND	*+	0.50	ug/L			01/26/23 10:58	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			01/26/23 10:58	1
Naphthalene	ND		0.50	ug/L			01/30/23 16:49	1
n-Butylbenzene	ND		0.50	ug/L			01/26/23 10:58	1
N-Propylbenzene	ND		0.50	ug/L			01/26/23 10:58	1
o-Chlorotoluene	ND	*+	0.50	ug/L			01/26/23 10:58	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			01/26/23 10:58	1
o-Xylene	ND		0.50	ug/L			01/26/23 10:58	1
p-Chlorotoluene	ND		0.50	ug/L			01/26/23 10:58	1
p-Dichlorobenzene (1,4-DCB)	ND	*+	0.50	ug/L			01/26/23 10:58	1
p-Isopropyltoluene	ND	*+	0.50	ug/L			01/26/23 10:58	1
sec-Butylbenzene	ND	*+	0.50	ug/L			01/26/23 10:58	1
Styrene	ND		0.50	ug/L			01/26/23 10:58	1
Tert-amyl methyl ether	ND		3.0	ug/L			01/26/23 10:58	1
Tert-butyl ethyl ether	ND		3.0	ug/L			01/26/23 10:58	1
tert-Butylbenzene	ND	*+	0.50	ug/L			01/26/23 10:58	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			01/26/23 10:58	1
Toluene	ND		0.50	ug/L			01/26/23 10:58	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			01/26/23 10:58	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			01/26/23 10:58	1
Trichloroethylene (TCE)	ND		0.50	ug/L			01/26/23 10:58	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			01/26/23 10:58	1
Trichlorotrifluoroethane	ND		0.50	ug/L			01/26/23 10:58	1
Vinyl Chloride (VC)	ND		0.30	ug/L			01/26/23 10:58	1
Xylenes, Total	ND		0.50	ug/L			01/26/23 10:58	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	15	T J	ug/L		0.98	N/A		01/30/23 16:49	1
Unknown	12	T J	ug/L		0.99	N/A		01/26/23 10:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		70 - 130		01/26/23 10:58	1
1,2-Dichloroethane-d4 (Surr)	108		70 - 130		01/30/23 16:49	1
4-Bromofluorobenzene (Surr)	128		70 - 130		01/26/23 10:58	1
4-Bromofluorobenzene (Surr)	105		70 - 130		01/30/23 16:49	1
Toluene-d8 (Surr)	96		70 - 130		01/26/23 10:58	1
Toluene-d8 (Surr)	88		70 - 130		01/30/23 16:49	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND	^3+	0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
2,4'-DDE	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
2,4'-DDT	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
2,6-Dinitrotoluene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
4,4'-DDD	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
4,4'-DDE	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
4,4'-DDT	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Acenaphthene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Acenaphthylene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Acetochlor	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Alachlor	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
alpha-BHC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
alpha-Chlordane	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Anthracene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 13:15	1
Atrazine	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Benz(a)anthracene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Benzo[a]pyrene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 13:15	1
Benzo[b]fluoranthene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 13:15	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Benzo[k]fluoranthene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 13:15	1
beta-BHC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Bromacil	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Butachlor	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Butylbenzylphthalate	ND		0.50	ug/L		01/21/23 11:03	01/23/23 13:15	1
Caffeine	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Chlorobenzilate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Chloroneb	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Chlorothalonil (Draconil, Bravo)	ND	^3+	0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Chlorpyrifos	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Chrysene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 13:15	1
delta-BHC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		01/21/23 11:03	01/23/23 13:15	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		01/21/23 11:03	01/23/23 13:15	1
Diazinon (Qualitative)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Diclorvos (DDVP)	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Dieldrin	ND		0.20	ug/L		01/21/23 11:03	01/23/23 13:15	1
Diethylphthalate	ND		0.50	ug/L		01/21/23 11:03	01/23/23 13:15	1
Dimethoate	ND	*1	0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Dimethylphthalate	ND		0.50	ug/L		01/21/23 11:03	01/23/23 13:15	1
Di-n-butyl phthalate	ND		0.99	ug/L		01/21/23 11:03	01/23/23 13:15	1
Di-n-octyl phthalate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Endosulfan I (Alpha)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Endosulfan II (Beta)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Endosulfan sulfate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Endrin	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Endrin aldehyde	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
EPTC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Fluoranthene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Fluorene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
gamma-Chlordane	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	ND		0.040	ug/L		01/21/23 11:03	01/23/23 13:15	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Hexachlorobenzene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Isophorone	ND		0.50	ug/L		01/21/23 11:03	01/23/23 13:15	1
Lindane	ND		0.040	ug/L		01/21/23 11:03	01/23/23 13:15	1
Malathion	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Methoxychlor	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Metolachlor	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Metribuzin	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Molinate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Naphthalene	ND		0.30	ug/L		01/21/23 11:03	01/23/23 13:15	1
Parathion	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		01/21/23 11:03	01/23/23 13:15	1
Phenanthrene	ND		0.040	ug/L		01/21/23 11:03	01/23/23 13:15	1
Propachlor	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Pyrene	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Simazine	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Terbacil	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Terbutylazine	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1
Thiobencarb	ND		0.20	ug/L		01/21/23 11:03	01/23/23 13:15	1
trans-Nonachlor	ND		0.050	ug/L		01/21/23 11:03	01/23/23 13:15	1
Trifluralin	ND		0.099	ug/L		01/21/23 11:03	01/23/23 13:15	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	01/21/23 11:03	01/23/23 13:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	109		70 - 130	01/21/23 11:03	01/23/23 13:15	1
Triphenylphosphate	97		70 - 130	01/21/23 11:03	01/23/23 13:15	1
Perylene-d12	96		70 - 130	01/21/23 11:03	01/23/23 13:15	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		01/23/23 14:25	01/24/23 04:00	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		01/23/23 14:25	01/24/23 04:00	1
1,2-D bromoethane	ND		0.010	ug/L		01/23/23 14:25	01/24/23 04:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	122		60 - 140	01/23/23 14:25	01/24/23 04:00	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alachlor	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
Aldrin	ND		0.0020	ug/L		01/20/23 14:15	01/20/23 21:26	1
Chlordane (n.o.s.)	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
Dieldrin	0.0051		0.0020	ug/L		01/20/23 14:15	01/20/23 21:26	1
Endrin	ND		0.010	ug/L		01/20/23 14:15	01/20/23 21:26	1
gamma-BHC (Lindane)	ND		0.010	ug/L		01/20/23 14:15	01/20/23 21:26	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	ND		0.010	ug/L		01/20/23 14:15	01/20/23 21:26	1
Heptachlor epoxide	ND		0.010	ug/L		01/20/23 14:15	01/20/23 21:26	1
Methoxychlor	ND		0.050	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1016	ND		0.070	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1221	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1232	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1242	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1248	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1254	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
PCB-1260	ND		0.070	ug/L		01/20/23 14:15	01/20/23 21:26	1
Polychlorinated biphenyls, Total	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1
Toxaphene	ND		0.10	ug/L		01/20/23 14:15	01/20/23 21:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	91		70 - 130	01/20/23 14:15	01/20/23 21:26	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SM 4500 S2 D)	ND		0.050	mg/L			01/24/23 12:17	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		01/20/23 00:00	02/14/23 05:00	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,4,5-Trichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,4,6-Trichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,4-Dichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,4-Dinitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,6-Dichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,6-Di-tert-butyl-4-methylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2,6-Di-tert-butylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Chloronaphthalene	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Chlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Methyl-4,6-dinitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Methylphenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Nitroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
2-Nitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
3+4-Methylphenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
3-Nitroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
4-Bromophenylphenyl ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
4-Chloro-3-methylphenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
4-Chloroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
4-Chlorophenylphenyl ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
4-Nitroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
4-Nitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
6-tert-butyl-2,4-dimethylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Acenaphthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

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
Acenaphthylene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Aniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Anthracene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzidine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzoic Acid	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
Benzyl Alcohol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
Biphenyl	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Bis(2-Chloroethoxy) methane	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Bis(2-Chloroethyl) ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Bis(2-Chloroisopropyl) ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Chrysene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Dibenzo[a,i]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Dibenzofuran	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Fluoranthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Fluorene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Hexachloroethane	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Naphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Nitrobenzene	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
N-Nitrosodi-n-propylamine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
N-Nitrosodiphenylamine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Pentachlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Perylene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Phenanthrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1
Phenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/14/23 05:00	1
p-tert-Butylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/14/23 05:00	1
Pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/14/23 05:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(2,4,6-Tribromophenol)	90		31 - 143	01/20/23 00:00	02/14/23 05:00	1
(d10-Acenaphthene)	94		27 - 133	01/20/23 00:00	02/14/23 05:00	1
(d10-Phenanthrene)	95		43 - 129	01/20/23 00:00	02/14/23 05:00	1
(d12-Chrysene)	105		52 - 144	01/20/23 00:00	02/14/23 05:00	1
(d12-Perylene)	99		36 - 161	01/20/23 00:00	02/14/23 05:00	1
(d5-Phenol)	23		0 - 85	01/20/23 00:00	02/14/23 05:00	1
(d8-Naphthalene)	83		25 - 125	01/20/23 00:00	02/14/23 05:00	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			01/20/23 19:16	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

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	0.02		mg/L			01/24/23 14:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	80		60 - 140					01/24/23 14:43	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	0.025		mg/L			01/24/23 23:54	1
JP5	ND	U	0.05		mg/L			01/24/23 23:54	1
JP8	ND	U	0.05		mg/L			01/24/23 23:54	1
MOTOR OIL	ND	U	0.05		mg/L			01/24/23 23:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE	97		60 - 130					01/24/23 23:54	1
HEXACOSANE	121		60 - 130					01/24/23 23:54	1

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-2

Date Collected: 01/18/23 08:30

Matrix: Water

Date Received: 01/19/23 10:00

Method: EPA-DW 524.2 - Total Trihalomethanes

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trihalomethanes, Total	ND		0.50	ug/L			01/27/23 11:48	1

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			01/20/23 19:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130				01/20/23 19:21	1
4-Bromofluorobenzene (Surr)	101		70 - 130				01/20/23 19:21	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				01/20/23 19:21	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			01/25/23 22:52	1
1,1,1-Trichloroethane	ND		0.50	ug/L			01/25/23 22:52	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			01/25/23 22:52	1
1,1,2-Trichloroethane	ND		0.50	ug/L			01/25/23 22:52	1
1,1-Dichloroethane	ND		0.50	ug/L			01/25/23 22:52	1
1,1-Dichloroethylene	ND		0.50	ug/L			01/25/23 22:52	1
1,1-Dichloropropene	ND		0.50	ug/L			01/25/23 22:52	1
1,2,3-Trichlorobenzene	ND	+	0.50	ug/L			01/25/23 22:52	1
1,2,3-Trichloropropane	ND		0.50	ug/L			01/25/23 22:52	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			01/25/23 22:52	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			01/25/23 22:52	1
1,2-Dichloroethane	ND		0.50	ug/L			01/25/23 22:52	1
1,2-Dichloropropane	ND		0.50	ug/L			01/25/23 22:52	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			01/25/23 22:52	1
1,3-Dichloropropane	ND		0.50	ug/L			01/25/23 22:52	1
2,2-Dichloropropane	ND		0.50	ug/L			01/25/23 22:52	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-2

Date Collected: 01/18/23 08:30

Matrix: Water

Date Received: 01/19/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND		5.0	ug/L			01/25/23 22:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			01/25/23 22:52	1
Acetone	ND	^3- *1	500	ug/L			01/25/23 22:52	1
Benzene	ND		0.50	ug/L			01/25/23 22:52	1
Bromobenzene	ND		0.50	ug/L			01/25/23 22:52	1
Bromochloromethane	ND		0.50	ug/L			01/25/23 22:52	1
Bromodichloromethane	ND		0.50	ug/L			01/25/23 22:52	1
Bromoform	ND		0.50	ug/L			01/25/23 22:52	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			01/25/23 22:52	1
Carbon disulfide	ND		0.50	ug/L			01/25/23 22:52	1
Carbon tetrachloride	ND		0.50	ug/L			01/25/23 22:52	1
Chlorobenzene	ND		0.50	ug/L			01/25/23 22:52	1
Chlorodibromomethane	ND		0.50	ug/L			01/25/23 22:52	1
Chloroethane	ND		0.50	ug/L			01/25/23 22:52	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			01/25/23 22:52	1
Dichloromethane	ND		0.50	ug/L			01/25/23 22:52	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			01/25/23 22:52	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			01/25/23 22:52	1
Dibromomethane	ND		0.50	ug/L			01/25/23 22:52	1
Dichlorodifluoromethane	ND		0.50	ug/L			01/25/23 22:52	1
Ethylbenzene	ND		0.50	ug/L			01/25/23 22:52	1
Hexachlorobutadiene	ND		0.50	ug/L			01/25/23 22:52	1
Isopropyl benzene	ND		0.50	ug/L			01/25/23 22:52	1
m,p-Xylenes	ND		0.50	ug/L			01/25/23 22:52	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			01/25/23 22:52	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			01/25/23 22:52	1
Naphthalene	ND	*+	0.50	ug/L			01/25/23 22:52	1
n-Butylbenzene	ND		0.50	ug/L			01/25/23 22:52	1
N-Propylbenzene	ND		0.50	ug/L			01/25/23 22:52	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			01/25/23 22:52	1
o-Chlorotoluene	ND		0.50	ug/L			01/25/23 22:52	1
o-Xylene	ND		0.50	ug/L			01/25/23 22:52	1
p-Chlorotoluene	ND		0.50	ug/L			01/25/23 22:52	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			01/25/23 22:52	1
p-Isopropyltoluene	ND		0.50	ug/L			01/25/23 22:52	1
sec-Butylbenzene	ND		0.50	ug/L			01/25/23 22:52	1
Styrene	ND		0.50	ug/L			01/25/23 22:52	1
Tert-amyl methyl ether	ND		3.0	ug/L			01/25/23 22:52	1
Tert-butyl ethyl ether	ND		3.0	ug/L			01/25/23 22:52	1
tert-Butylbenzene	ND		0.50	ug/L			01/25/23 22:52	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			01/25/23 22:52	1
Toluene	ND		0.50	ug/L			01/25/23 22:52	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			01/25/23 22:52	1
Xylenes, Total	ND		0.50	ug/L			01/25/23 22:52	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			01/25/23 22:52	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			01/25/23 22:52	1
Trichloroethylene (TCE)	ND		0.50	ug/L			01/25/23 22:52	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			01/25/23 22:52	1
Vinyl Chloride (VC)	ND		0.30	ug/L			01/25/23 22:52	1

Client Sample Results

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

Job ID: 380-34925-1

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-2

Date Collected: 01/18/23 08:30

Matrix: Water

Date Received: 01/19/23 10:00

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorotrifluoroethane	ND		0.50	ug/L			01/25/23 22:52	1
Bromoethane	ND		0.50	ug/L			01/25/23 22:52	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			01/25/23 22:52	1
Diisopropyl ether	ND		3.0	ug/L			01/25/23 22:52	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	8.7	T J	ug/L		0.98	N/A		01/25/23 22:52	1
Acetaldehyde	8.5	T J N	ug/L		1.43	75-07-0		01/25/23 22:52	1
Furfural	6.8	T J N	ug/L		9.77	98-01-1		01/25/23 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		70 - 130		01/25/23 22:52	1
4-Bromofluorobenzene (Surr)	106		70 - 130		01/25/23 22:52	1
Toluene-d8 (Surr)	91		70 - 130		01/25/23 22:52	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		01/23/23 14:25	01/24/23 04:34	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		01/23/23 14:25	01/24/23 04:34	1
1,2-D bromoethane	ND		0.010	ug/L		01/23/23 14:25	01/24/23 04:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	118		60 - 140	01/23/23 14:25	01/24/23 04:34	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	0.02		mg/L			01/24/23 15:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140		01/24/23 15:20	1

Action Limit Summary

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

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	HI Org Limit	EPAMCL Limit	RL	Method	Prep Type
Trihalomethanes, Total	ND		ug/L		80	0.50	524.2	Total/NA
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			0.50	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
cis-1,2-Dichloroethylene	ND		ug/L	70.00	70	0.50	524.2	Total/NA
Dichloromethane	ND		ug/L	5.000	5	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
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		ug/L	2.000	2	0.30	524.2	Total/NA
Xylenes, Total	ND		ug/L	10000	10000	0.50	524.2	Total/NA
Alachlor	ND		ug/L		2	0.050	525.2	Total/NA
Atrazine	ND		ug/L		3	0.050	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L		0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L		400	0.59	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L		6	0.59	525.2	Total/NA
Endrin	ND		ug/L		2	0.099	525.2	Total/NA
Heptachlor	ND		ug/L		0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L		0.2	0.050	525.2	Total/NA
Hexachlorobenzene	ND		ug/L		1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L		50	0.050	525.2	Total/NA
Lindane	ND		ug/L		0.2	0.040	525.2	Total/NA
Methoxychlor	ND		ug/L		40	0.099	525.2	Total/NA
Simazine	ND		ug/L		4	0.050	525.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L			0.041	504.1	Total/NA
1,2-D bromo-3-Chloropropane	ND		ug/L		0.2	0.010	504.1	Total/NA
1,2-D bromoethane	ND		ug/L		0.05	0.010	504.1	Total/NA
Alachlor	ND		ug/L		2	0.10	505	Total/NA
Endrin	ND		ug/L		2	0.010	505	Total/NA
gamma-BHC (Lindane)	ND		ug/L		0.2	0.010	505	Total/NA
Heptachlor	ND		ug/L		0.4	0.010	505	Total/NA
Heptachlor epoxide	ND		ug/L		0.2	0.010	505	Total/NA
Methoxychlor	ND		ug/L		40	0.050	505	Total/NA
Polychlorinated biphenyls, Total	ND		ug/L		0.5	0.10	505	Total/NA
Toxaphene	ND		ug/L		3	0.10	505	Total/NA

Eurofins Eaton Analytical Pomona

Action Limit Summary

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

Job ID: 380-34925-1

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-2

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
Trihalomethanes, Total	ND		ug/L		80	0.50	524.2	Total/NA
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			0.50	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		ug/L	2.000	2	0.30	524.2	Total/NA
1,2,3-Trichloropropane	ND		ug/L			0.040	504.1	Total/NA
1,2-D bromo-3-Chloropropane	ND		ug/L		0.2	0.010	504.1	Total/NA
1,2-D bromoethane	ND		ug/L		0.05	0.010	504.1	Total/NA

Surrogate Summary

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

Job ID: 380-34925-1

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

Matrix: Drinking 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)
380-34925-1	AIEA GULCH WELLS PUMP 2	97	97	102

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 (70-130)	BFB (70-130)	DCA (70-130)
380-34925-2	TB: AIEA GULCH WELLS PUMF	96	101	101
LCS 380-30366/2	Lab Control Sample	102	97	98
LCS 380-30366/3	Lab Control Sample Dup	101	98	99
MB 380-30366/5	Method Blank	98	96	100

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 380-30366/4	Lab Control Sample	100	98	99

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: Drinking 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)
380-34925-1	AIEA GULCH WELLS PUMP 2	112	128	96
380-34925-1	AIEA GULCH WELLS PUMP 2	108	105	88

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

Surrogate Summary

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

Job ID: 380-34925-1

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)
380-34925-2	TB: AIEA GULCH WELLS PUMF	119	106	91
LCS 380-30675/11	Lab Control Sample	98	108	99
LCS 380-30695/3	Lab Control Sample	96	129	107
LCS 380-30956/4	Lab Control Sample	99	99	102
LCSD 380-30675/12	Lab Control Sample Dup	96	101	100
LCSD 380-30695/4	Lab Control Sample Dup	99	120	101
LCSD 380-30956/5	Lab Control Sample Dup	96	98	100
MB 380-30675/15	Method Blank	111	107	92
MB 380-30695/5	Method Blank	102	129	95
MB 380-30956/8	Method Blank	101	92	79
MRL 380-30675/10	Lab Control Sample	97	99	92
MRL 380-30675/14	Lab Control Sample	96	130	97
MRL 380-30956/3	Lab Control Sample	99	104	89
MRL 380-30956/7	Lab Control Sample	102	97	91

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: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-34925-1	AIEA GULCH WELLS PUMP 2	109	97	96

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-35010-B-1-A DU	Duplicate	107	102	89
380-34961-AR-1-A MS	Matrix Spike	103	103	97
LCS 380-30404/3-A	Lab Control Sample	101	102	95
LCSD 380-30404/4-A	Lab Control Sample Dup	103	97	92
MB 380-30404/1-A	Method Blank	105	100	83
MRL 380-30404/2-A	Lab Control Sample	104	102	93

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

Surrogate Summary

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

Job ID: 380-34925-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DBPP1 (60-140)
380-34925-1	AIEA GULCH WELLS PUMP 2	122

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)
380-34654-B-1-A MS	Matrix Spike	109
380-34654-J-2-A DU	Duplicate	111
380-34925-2	TB: AIEA GULCH WELLS PUMF 2	118
LCS 380-30432/3-A	Lab Control Sample	110
MBL 380-30432/4-A	Method Blank	105
MRL 380-30432/1-A	Lab Control Sample	113
MRL 380-30432/2-A	Lab Control Sample	112

Surrogate Legend

DBPP = 1,2-D bromopropane (Surr)

Method: 505 - Organochlorine Pesticides/PCBs (GC)

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (70-130)
380-34925-1	AIEA GULCH WELLS PUMP 2	91

Surrogate Legend

TCX = Tetrachloro-m-xylene

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)
380-34454-P-1-A MS	Matrix Spike	99
380-34454-Q-1-A MS	Matrix Spike	91
380-34654-E-1-A MS	Matrix Spike	99
380-34654-F-1-A MS	Matrix Spike	94
MB 380-30329/7-A	Method Blank	101
MRL 380-30329/2-A	Lab Control Sample	94
MRL 380-30329/3-A	Lab Control Sample	100
MRL 380-30329/4-A	Lab Control Sample	99
MRL 380-30329/5-A	Lab Control Sample	94
MRL 380-30329/6-A	Lab Control Sample	93

Surrogate Legend

TCX = Tetrachloro-m-xylene

Surrogate Summary

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

Job ID: 380-34925-1

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PHL (0-130)	PRY (36-161)	TBP (30-130)
103757-B1	Method Blank	98	97	104	86	76	96	93
103757-BS1	Lab Control Sample	93	93	102	80	82	95	108
103757-BS2	Lab Control Sample Dup	96	96	105	93	95	92	107

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: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)						
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PHL (0-85)	PRY (36-161)	TBP (31-143)
380-34925-1	AIEA GULCH WELLS PUMP 2	94	95	105	83	23	99	90

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-34925-1	AIEA GULCH WELLS PUMP 2	80

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-34925-2	TB: AIEA GULCH WELLS PUMI	79

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-34925-1

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		
23VG39A11B	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)		
23VG39A11C	LCD	101		
23VG39A11L	Lab Control Sample	103		
Surrogate Legend				
BFB = BROMOFLUOROBENZENE				

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)		
380-34925-1	AIEA GULCH WELLS PUMP 2	97	121		
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	XACOSAI		
23DSA029WB	Method Blank				
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)	XACOSAI (60-130)		
23DSA029WL	Lab Control Sample	102	115		
23J5A029WL	Lab Control Sample	103	115		
23J8A029WL	Lab Control Sample	105	120		
Surrogate Legend					
BB = BROMOBENZENE					
HEXACOSANE = HEXACOSANE					

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30675/15
Matrix: Water
Analysis Batch: 30675

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			01/25/23 19:55	1
1,1,1-Trichloroethane	ND		0.50	ug/L			01/25/23 19:55	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			01/25/23 19:55	1
1,1,2-Trichloroethane	ND		0.50	ug/L			01/25/23 19:55	1
1,1-Dichloroethane	ND		0.50	ug/L			01/25/23 19:55	1
1,1-Dichlorethylene	ND		0.50	ug/L			01/25/23 19:55	1
1,1-Dichloropropene	ND		0.50	ug/L			01/25/23 19:55	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			01/25/23 19:55	1
1,2,3-Trichloropropane	ND		0.50	ug/L			01/25/23 19:55	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			01/25/23 19:55	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			01/25/23 19:55	1
1,2-Dichloroethane	ND		0.50	ug/L			01/25/23 19:55	1
1,2-Dichloropropane	ND		0.50	ug/L			01/25/23 19:55	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			01/25/23 19:55	1
1,3-Dichloropropane	ND		0.50	ug/L			01/25/23 19:55	1
2,2-Dichloropropane	ND		0.50	ug/L			01/25/23 19:55	1
2-Butanone (MEK)	ND		5.0	ug/L			01/25/23 19:55	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			01/25/23 19:55	1
Acetone	ND		500	ug/L			01/25/23 19:55	1
Benzene	ND		0.50	ug/L			01/25/23 19:55	1
Bromobenzene	ND		0.50	ug/L			01/25/23 19:55	1
Bromochloromethane	ND		0.50	ug/L			01/25/23 19:55	1
Bromodichloromethane	ND		0.50	ug/L			01/25/23 19:55	1
Bromoform	ND		0.50	ug/L			01/25/23 19:55	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			01/25/23 19:55	1
Carbon disulfide	ND		0.50	ug/L			01/25/23 19:55	1
Carbon tetrachloride	ND		0.50	ug/L			01/25/23 19:55	1
Chlorobenzene	ND		0.50	ug/L			01/25/23 19:55	1
Chlorodibromomethane	ND		0.50	ug/L			01/25/23 19:55	1
Chloroethane	ND		0.50	ug/L			01/25/23 19:55	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			01/25/23 19:55	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			01/25/23 19:55	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			01/25/23 19:55	1
Dibromomethane	ND		0.50	ug/L			01/25/23 19:55	1
Dichlorodifluoromethane	ND		0.50	ug/L			01/25/23 19:55	1
Dichloromethane	ND		0.50	ug/L			01/25/23 19:55	1
Ethylbenzene	ND		0.50	ug/L			01/25/23 19:55	1
Hexachlorobutadiene	ND		0.50	ug/L			01/25/23 19:55	1
Isopropy benzene	ND		0.50	ug/L			01/25/23 19:55	1
m,p-Xylenes	ND		0.50	ug/L			01/25/23 19:55	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			01/25/23 19:55	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			01/25/23 19:55	1
Naphthalene	ND		0.50	ug/L			01/25/23 19:55	1
n-Butylbenzene	ND		0.50	ug/L			01/25/23 19:55	1
N-Propylbenzene	ND		0.50	ug/L			01/25/23 19:55	1
o-Chlorotoluene	ND		0.50	ug/L			01/25/23 19:55	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			01/25/23 19:55	1
o-Xylene	ND		0.50	ug/L			01/25/23 19:55	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30675/15
Matrix: Water
Analysis Batch: 30675

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			01/25/23 19:55	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			01/25/23 19:55	1
p-Isopropyltoluene	ND		0.50	ug/L			01/25/23 19:55	1
sec-Butylbenzene	ND		0.50	ug/L			01/25/23 19:55	1
Styrene	ND		0.50	ug/L			01/25/23 19:55	1
Tert-amyl methyl ether	ND		3.0	ug/L			01/25/23 19:55	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			01/25/23 19:55	1
Tert-butyl ethyl ether	ND		3.0	ug/L			01/25/23 19:55	1
tert-Butylbenzene	ND		0.50	ug/L			01/25/23 19:55	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			01/25/23 19:55	1
Toluene	ND		0.50	ug/L			01/25/23 19:55	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			01/25/23 19:55	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			01/25/23 19:55	1
Trichloroethylene (TCE)	ND		0.50	ug/L			01/25/23 19:55	1
Bromoethane	ND		0.50	ug/L			01/25/23 19:55	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			01/25/23 19:55	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			01/25/23 19:55	1
Trichlorotrifluoroethane	ND		0.50	ug/L			01/25/23 19:55	1
Diisopropyl ether	ND		3.0	ug/L			01/25/23 19:55	1
Vinyl Chloride (VC)	ND		0.30	ug/L			01/25/23 19:55	1
Xylenes, Total	ND		0.50	ug/L			01/25/23 19:55	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A		01/25/23 19:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		70 - 130		01/25/23 19:55	1
4-Bromofluorobenzene (Surr)	107		70 - 130		01/25/23 19:55	1
Toluene-d8 (Surr)	92		70 - 130		01/25/23 19:55	1

Lab Sample ID: LCS 380-30675/11
Matrix: Water
Analysis Batch: 30675

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	5.40		ug/L		108	70 - 130
1,1,1-Trichloroethane	5.00	5.45		ug/L		109	70 - 130
1,1,2,2-Tetrachloroethane	5.00	5.56		ug/L		111	70 - 130
1,1,2-Trichloroethane	5.00	5.07		ug/L		101	70 - 130
1,1-Dichloroethane	5.00	5.16		ug/L		103	70 - 130
1,1-Dichlorethylene	5.00	5.01		ug/L		100	70 - 130
1,1-Dichloropropene	5.00	5.16		ug/L		103	70 - 130
1,2,3-Trichlorobenzene	5.00	5.90		ug/L		118	70 - 130
1,2,3-Trichloropropane	5.00	5.66		ug/L		113	70 - 130
1,2,4-Trichlorobenzene	5.00	5.62		ug/L		112	70 - 130
1,2,4-Trimethy benzene	5.00	6.02		ug/L		120	70 - 130
1,2-Dichloroethane	5.00	5.32		ug/L		106	70 - 130
1,2-Dichloropropane	5.00	5.19		ug/L		104	70 - 130

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30675/11
Matrix: Water
Analysis Batch: 30675

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	5.70		ug/L		114	70 - 130
1,3-Dichloropropane	5.00	5.29		ug/L		106	70 - 130
2,2-Dichloropropane	5.00	4.30		ug/L		86	70 - 130
2-Butanone (MEK)	50.0	52.3		ug/L		105	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	52.6		ug/L		105	70 - 130
Acetone	50.0	45.1	J	ug/L		90	70 - 130
Benzene	5.00	5.41		ug/L		108	70 - 130
Bromobenzene	5.00	5.69		ug/L		114	70 - 130
Bromochloromethane	5.00	5.21		ug/L		104	70 - 130
Bromodichloromethane	5.00	5.53		ug/L		111	70 - 130
Bromoform	5.00	5.84		ug/L		117	70 - 130
Bromomethane (Methyl Bromide)	5.00	5.54		ug/L		111	70 - 130
Carbon disulfide	5.00	5.23		ug/L		105	70 - 130
Carbon tetrachloride	5.00	5.21		ug/L		104	70 - 130
Chlorobenzene	5.00	5.54		ug/L		111	70 - 130
Chlorodibromomethane	5.00	5.48		ug/L		110	70 - 130
cis-1,3-Dichloropropene	5.00	5.37		ug/L		107	70 - 130
Dichloromethane	5.00	5.52		ug/L		110	70 - 130
Ethylbenzene	5.00	5.48		ug/L		110	70 - 130
Hexachlorobutadiene	5.00	5.64		ug/L		113	70 - 130
Isopropyl benzene	5.00	6.17		ug/L		123	70 - 130
m,p-Xylenes	10.0	11.5		ug/L		115	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	5.91		ug/L		118	70 - 130
Methyl-tert-butyl Ether (MTBE)	5.00	5.34		ug/L		107	70 - 130
Naphthalene	5.00	6.31		ug/L		126	70 - 130
n-Butylbenzene	5.00	5.47		ug/L		109	70 - 130
N-Propylbenzene	5.00	5.70		ug/L		114	70 - 130
o-Chlorotoluene	5.00	6.10		ug/L		122	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	5.49		ug/L		110	70 - 130
o-Xylene	5.00	5.39		ug/L		108	70 - 130
p-Chlorotoluene	5.00	5.65		ug/L		113	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	6.04		ug/L		121	70 - 130
p-Isopropyltoluene	5.00	5.73		ug/L		115	70 - 130
sec-Butylbenzene	5.00	5.71		ug/L		114	70 - 130
Styrene	5.00	5.20		ug/L		104	70 - 130
Tert-amyl methyl ether	5.00	5.43		ug/L		109	70 - 130
1,3-Dichloropropene, Total	10.0	10.6		ug/L		106	70 - 130
Tert-butyl ethyl ether	5.00	5.33		ug/L		107	70 - 130
tert-Butylbenzene	5.00	6.09		ug/L		122	70 - 130
Tetrachloroethene (PCE)	5.00	5.13		ug/L		103	70 - 130
Toluene	5.00	5.43		ug/L		109	70 - 130
trans-1,2-Dichloroethylene	5.00	5.50		ug/L		110	70 - 130
trans-1,3-Dichloropropene	5.00	5.25		ug/L		105	70 - 130
Trichloroethylene (TCE)	5.00	5.08		ug/L		102	70 - 130
Bromoethane	5.00	5.13		ug/L		103	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	6.02		ug/L		120	70 - 130
Trichlorotrifluoroethane	5.00	5.41		ug/L		108	70 - 130
Diisopropyl ether	5.00	5.08		ug/L		102	70 - 130

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30675/11
Matrix: Water
Analysis Batch: 30675

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	5.20		ug/L		104	70 - 130
Xylenes, Total	15.0	16.9		ug/L		113	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	108		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: LCSD 380-30675/12
Matrix: Water
Analysis Batch: 30675

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	5.46		ug/L		109	70 - 130	1	20
1,1,1-Trichloroethane	5.00	5.35		ug/L		107	70 - 130	2	20
1,1,2,2-Tetrachloroethane	5.00	6.20		ug/L		124	70 - 130	11	20
1,1,2-Trichloroethane	5.00	5.22		ug/L		104	70 - 130	3	20
1,1-Dichloroethane	5.00	5.47		ug/L		109	70 - 130	6	20
1,1-Dichlorethylene	5.00	5.19		ug/L		104	70 - 130	3	20
1,1-Dichloropropene	5.00	5.33		ug/L		107	70 - 130	3	20
1,2,3-Trichlorobenzene	5.00	6.74	*+	ug/L		135	70 - 130	13	20
1,2,3-Trichloropropane	5.00	5.98		ug/L		120	70 - 130	6	20
1,2,4-Trichlorobenzene	5.00	6.29		ug/L		126	70 - 130	11	20
1,2,4-Trimethy benzene	5.00	6.50		ug/L		130	70 - 130	8	20
1,2-Dichloroethane	5.00	5.53		ug/L		111	70 - 130	4	20
1,2-Dichloropropane	5.00	5.79		ug/L		116	70 - 130	11	20
1,3,5-Trimethy benzene	5.00	6.03		ug/L		121	70 - 130	6	20
1,3-Dichloropropane	5.00	5.43		ug/L		109	70 - 130	2	20
2,2-Dichloropropane	5.00	4.23		ug/L		85	70 - 130	2	20
2-Butanone (MEK)	50.0	54.0		ug/L		108	70 - 130	3	20
4-Methyl-2-pentanone (MIBK)	50.0	54.7		ug/L		109	70 - 130	4	20
Acetone	50.0	55.6	J *1	ug/L		111	70 - 130	21	20
Benzene	5.00	5.73		ug/L		115	70 - 130	6	20
Bromobenzene	5.00	6.02		ug/L		120	70 - 130	6	20
Bromochloromethane	5.00	5.66		ug/L		113	70 - 130	8	20
Bromodichloromethane	5.00	5.65		ug/L		113	70 - 130	2	20
Bromoform	5.00	6.47		ug/L		129	70 - 130	10	20
Bromomethane (Methyl Bromide)	5.00	5.33		ug/L		107	70 - 130	4	20
Carbon disulfide	5.00	5.73		ug/L		115	70 - 130	9	20
Carbon tetrachloride	5.00	5.36		ug/L		107	70 - 130	3	20
Chlorobenzene	5.00	5.57		ug/L		111	70 - 130	1	20
Chlorodibromomethane	5.00	5.64		ug/L		113	70 - 130	3	20
cis-1,3-Dichloropropene	5.00	5.35		ug/L		107	70 - 130	0	20
Dichloromethane	5.00	5.68		ug/L		114	70 - 130	3	20
Ethylbenzene	5.00	5.35		ug/L		107	70 - 130	2	20
Hexachlorobutadiene	5.00	5.81		ug/L		116	70 - 130	3	20
Isopropy benzene	5.00	6.29		ug/L		126	70 - 130	2	20
m,p-Xylenes	10.0	11.7		ug/L		117	70 - 130	2	20

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCSD 380-30675/12
Matrix: Water
Analysis Batch: 30675

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	6.32		ug/L		126	70 - 130	7	20
Methyl-tert-butyl Ether (MTBE)	5.00	5.64		ug/L		113	70 - 130	5	20
Naphthalene	5.00	6.98	*+	ug/L		140	70 - 130	10	20
n-Butylbenzene	5.00	6.22		ug/L		124	70 - 130	13	20
N-Propylbenzene	5.00	5.64		ug/L		113	70 - 130	1	20
o-Chlorotoluene	5.00	6.27		ug/L		125	70 - 130	3	20
o-Dichlorobenzene (1,2-DCB)	5.00	6.11		ug/L		122	70 - 130	11	20
o-Xylene	5.00	5.45		ug/L		109	70 - 130	1	20
p-Chlorotoluene	5.00	5.86		ug/L		117	70 - 130	4	20
p-Dichlorobenzene (1,4-DCB)	5.00	6.46		ug/L		129	70 - 130	7	20
p-Isopropyltoluene	5.00	5.89		ug/L		118	70 - 130	3	20
sec-Butylbenzene	5.00	5.91		ug/L		118	70 - 130	3	20
Styrene	5.00	5.17		ug/L		103	70 - 130	1	20
Tert-amyl methyl ether	5.00	5.84		ug/L		117	70 - 130	7	20
1,3-Dichloropropene, Total	10.0	10.7		ug/L		107	70 - 130	0	20
Tert-butyl ethyl ether	5.00	5.72		ug/L		114	70 - 130	7	20
tert-Butylbenzene	5.00	6.48		ug/L		130	70 - 130	6	20
Tetrachloroethene (PCE)	5.00	5.43		ug/L		109	70 - 130	6	20
Toluene	5.00	5.45		ug/L		109	70 - 130	0	20
trans-1,2-Dichloroethylene	5.00	5.59		ug/L		112	70 - 130	1	20
trans-1,3-Dichloropropene	5.00	5.31		ug/L		106	70 - 130	1	20
Trichloroethylene (TCE)	5.00	5.59		ug/L		112	70 - 130	10	20
Bromoethane	5.00	5.92		ug/L		118	70 - 130	14	20
Trichlorofluoromethane (Freon 11)	5.00	6.21		ug/L		124	70 - 130	3	20
Trichlorotrifluoroethane	5.00	5.26		ug/L		105	70 - 130	3	20
Diisopropyl ether	5.00	5.48		ug/L		110	70 - 130	7	20
Vinyl Chloride (VC)	5.00	5.20		ug/L		104	70 - 130	0	20
Xylenes, Total	15.0	17.2		ug/L		114	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	101		70 - 130
Toluene-d8 (Surr)	100		70 - 130

Lab Sample ID: MRL 380-30675/10
Matrix: Water
Analysis Batch: 30675

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	0.556		ug/L		111	50 - 150
Vinyl Chloride (VC)	0.250	0.295	J	ug/L		118	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Toluene-d8 (Surr)	92		70 - 130

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MRL 380-30675/14
Matrix: Water
Analysis Batch: 30675

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	0.652		ug/L		130	50 - 150
1,1,1-Trichloroethane	0.500	0.473	J	ug/L		95	50 - 150
1,1,2,2-Tetrachloroethane	0.500	0.422	J	ug/L		84	50 - 150
1,1,2-Trichloroethane	0.500	0.437	J	ug/L		87	50 - 150
1,1-Dichloroethane	0.500	0.576		ug/L		115	50 - 150
1,1-Dichlorethylene	0.500	0.622		ug/L		124	50 - 150
1,1-Dichloropropene	0.500	0.512		ug/L		102	50 - 150
1,2,3-Trichlorobenzene	0.500	0.511		ug/L		102	50 - 150
1,2,3-Trichloropropane	0.500	0.425	J	ug/L		85	50 - 150
1,2,4-Trichlorobenzene	0.500	0.540		ug/L		108	50 - 150
1,2,4-Trimethy benzene	0.500	0.477	J	ug/L		95	50 - 150
1,2-Dichloroethane	0.500	0.527		ug/L		105	50 - 150
1,2-Dichloropropane	0.500	0.555		ug/L		111	50 - 150
1,3,5-Trimethy benzene	0.500	0.624		ug/L		125	50 - 150
1,3-Dichloropropane	0.500	0.383	J	ug/L		77	50 - 150
2,2-Dichloropropane	0.500	0.420	J	ug/L		84	50 - 150
2-Butanone (MEK)	5.00	3.32	J	ug/L		66	50 - 150
4-Methyl-2-pentanone (MIBK)	5.00	4.36	J	ug/L		87	50 - 150
Acetone	5.00	ND	^3-	ug/L		0	50 - 150
Benzene	0.500	0.505		ug/L		101	50 - 150
Bromobenzene	0.500	0.576		ug/L		115	50 - 150
Bromochloromethane	0.500	0.546		ug/L		109	50 - 150
Bromodichloromethane	0.500	0.628		ug/L		126	50 - 150
Bromoform	0.500	0.498	J	ug/L		100	50 - 150
Bromomethane (Methyl Bromide)	0.500	0.505		ug/L		101	50 - 150
Carbon disulfide	0.500	0.568		ug/L		114	50 - 150
Carbon tetrachloride	0.500	0.526		ug/L		105	50 - 150
Chlorobenzene	0.500	0.496	J	ug/L		99	50 - 150
Chlorodibromomethane	0.500	0.642		ug/L		128	50 - 150
cis-1,3-Dichloropropene	0.500	0.586		ug/L		117	50 - 150
Dichloromethane	0.500	0.744		ug/L		149	50 - 150
Ethylbenzene	0.500	0.631		ug/L		126	50 - 150
Hexachlorobutadiene	0.500	0.589		ug/L		118	50 - 150
Isopropy benzene	0.500	0.584		ug/L		117	50 - 150
m,p-Xylenes	1.00	0.798		ug/L		80	50 - 150
m-Dichlorobenzene (1,3-DCB)	0.500	0.648		ug/L		130	50 - 150
Methyl-tert-butyl Ether (MTBE)	0.500	0.443	J	ug/L		89	50 - 150
Naphthalene	0.500	0.398	J	ug/L		80	50 - 150
n-Butylbenzene	0.500	0.497	J	ug/L		99	50 - 150
N-Propylbenzene	0.500	0.450	J	ug/L		90	50 - 150
o-Chlorotoluene	0.500	0.612		ug/L		122	50 - 150
o-Dichlorobenzene (1,2-DCB)	0.500	0.519		ug/L		104	50 - 150
o-Xylene	0.500	0.605		ug/L		121	50 - 150
p-Chlorotoluene	0.500	0.449	J	ug/L		90	50 - 150
p-Dichlorobenzene (1,4-DCB)	0.500	0.671		ug/L		134	50 - 150
p-Isopropyltoluene	0.500	0.667		ug/L		133	50 - 150
sec-Butylbenzene	0.500	0.717		ug/L		143	50 - 150
Styrene	0.500	0.566		ug/L		113	50 - 150

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MRL 380-30675/14
Matrix: Water
Analysis Batch: 30675

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	0.383	J	ug/L		77	50 - 150
1,3-Dichloropropene, Total	1.00	1.18		ug/L		118	50 - 150
Tert-butyl ethyl ether	0.500	0.491	J	ug/L		98	50 - 150
tert-Butylbenzene	0.500	0.547		ug/L		109	50 - 150
Tetrachloroethene (PCE)	0.500	0.524		ug/L		105	50 - 150
Toluene	0.500	0.614		ug/L		123	50 - 150
trans-1,2-Dichloroethylene	0.500	0.564		ug/L		113	50 - 150
trans-1,3-Dichloropropene	0.500	0.589		ug/L		118	50 - 150
Trichloroethylene (TCE)	0.500	0.479	J	ug/L		96	50 - 150
Bromoethane	0.500	0.695		ug/L		139	50 - 150
Trichlorofluoromethane (Freon 11)	0.500	0.545		ug/L		109	50 - 150
Trichlorotrifluoroethane	0.500	0.507		ug/L		101	50 - 150
Diisopropyl ether	0.500	0.516	J	ug/L		103	50 - 150
Vinyl Chloride (VC)	0.500	0.489		ug/L		98	50 - 150
Xylenes, Total	1.50	1.40		ug/L		94	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	130		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: MB 380-30695/5
Matrix: Water
Analysis Batch: 30695

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			01/26/23 04:53	1
1,1,1-Trichloroethane	ND		0.50	ug/L			01/26/23 04:53	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			01/26/23 04:53	1
1,1,2-Trichloroethane	ND		0.50	ug/L			01/26/23 04:53	1
1,1-Dichloroethane	ND		0.50	ug/L			01/26/23 04:53	1
1,1-Dichloroethylene	ND		0.50	ug/L			01/26/23 04:53	1
1,1-Dichloropropene	ND		0.50	ug/L			01/26/23 04:53	1
1,2,3-Trichlorobenzene	0.721	B	0.50	ug/L			01/26/23 04:53	1
1,2,3-Trichloropropane	ND		0.50	ug/L			01/26/23 04:53	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			01/26/23 04:53	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			01/26/23 04:53	1
1,2-Dichloroethane	ND		0.50	ug/L			01/26/23 04:53	1
1,2-Dichloropropane	ND		0.50	ug/L			01/26/23 04:53	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			01/26/23 04:53	1
1,3-Dichloropropane	ND		0.50	ug/L			01/26/23 04:53	1
2,2-Dichloropropane	ND		0.50	ug/L			01/26/23 04:53	1
2-Butanone (MEK)	ND		5.0	ug/L			01/26/23 04:53	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			01/26/23 04:53	1
Acetone	ND		500	ug/L			01/26/23 04:53	1
Benzene	ND		0.50	ug/L			01/26/23 04:53	1
Bromobenzene	ND		0.50	ug/L			01/26/23 04:53	1
Bromochloromethane	ND		0.50	ug/L			01/26/23 04:53	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30695/5
Matrix: Water
Analysis Batch: 30695

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			01/26/23 04:53	1
Bromoform	ND		0.50	ug/L			01/26/23 04:53	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			01/26/23 04:53	1
Carbon disulfide	ND		0.50	ug/L			01/26/23 04:53	1
Carbon tetrachloride	ND		0.50	ug/L			01/26/23 04:53	1
Chlorobenzene	ND		0.50	ug/L			01/26/23 04:53	1
Chlorodibromomethane	ND		0.50	ug/L			01/26/23 04:53	1
Chloroethane	ND		0.50	ug/L			01/26/23 04:53	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			01/26/23 04:53	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			01/26/23 04:53	1
cis-1,3-Dichloropropene	ND		0.50	ug/L			01/26/23 04:53	1
Dibromomethane	ND		0.50	ug/L			01/26/23 04:53	1
Dichlorodifluoromethane	ND		0.50	ug/L			01/26/23 04:53	1
Dichloromethane	ND		0.50	ug/L			01/26/23 04:53	1
Ethylbenzene	ND		0.50	ug/L			01/26/23 04:53	1
Hexachlorobutadiene	ND		0.50	ug/L			01/26/23 04:53	1
Isopropyl benzene	ND		0.50	ug/L			01/26/23 04:53	1
m,p-Xylenes	ND		0.50	ug/L			01/26/23 04:53	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			01/26/23 04:53	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			01/26/23 04:53	1
Naphthalene	0.629	B	0.50	ug/L			01/26/23 04:53	1
n-Butylbenzene	ND		0.50	ug/L			01/26/23 04:53	1
N-Propylbenzene	ND		0.50	ug/L			01/26/23 04:53	1
o-Chlorotoluene	ND		0.50	ug/L			01/26/23 04:53	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			01/26/23 04:53	1
o-Xylene	ND		0.50	ug/L			01/26/23 04:53	1
p-Chlorotoluene	ND		0.50	ug/L			01/26/23 04:53	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			01/26/23 04:53	1
p-Isopropyltoluene	ND		0.50	ug/L			01/26/23 04:53	1
sec-Butylbenzene	ND		0.50	ug/L			01/26/23 04:53	1
Styrene	ND		0.50	ug/L			01/26/23 04:53	1
Tert-amyl methyl ether	ND		3.0	ug/L			01/26/23 04:53	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			01/26/23 04:53	1
Tert-butyl ethyl ether	ND		3.0	ug/L			01/26/23 04:53	1
tert-Butylbenzene	ND		0.50	ug/L			01/26/23 04:53	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			01/26/23 04:53	1
Toluene	ND		0.50	ug/L			01/26/23 04:53	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			01/26/23 04:53	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			01/26/23 04:53	1
Trichloroethylene (TCE)	ND		0.50	ug/L			01/26/23 04:53	1
Bromoethane	ND		0.50	ug/L			01/26/23 04:53	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			01/26/23 04:53	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			01/26/23 04:53	1
Trichlorotrifluoroethane	ND		0.50	ug/L			01/26/23 04:53	1
Diisopropyl ether	ND		3.0	ug/L			01/26/23 04:53	1
Vinyl Chloride (VC)	ND		0.30	ug/L			01/26/23 04:53	1
Xylenes, Total	ND		0.50	ug/L			01/26/23 04:53	1

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30695/5
Matrix: Water
Analysis Batch: 30695

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

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</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>N/A</i>		<i>01/26/23 04:53</i>	<i>1</i>

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	<i>102</i>		<i>70 - 130</i>		<i>01/26/23 04:53</i>	<i>1</i>
<i>4-Bromofluorobenzene (Surr)</i>	<i>129</i>		<i>70 - 130</i>		<i>01/26/23 04:53</i>	<i>1</i>
<i>Toluene-d8 (Surr)</i>	<i>95</i>		<i>70 - 130</i>		<i>01/26/23 04:53</i>	<i>1</i>

Lab Sample ID: LCS 380-30695/3
Matrix: Water
Analysis Batch: 30695

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	5.70		ug/L		114	70 - 130
1,1,1-Trichloroethane	5.00	5.95		ug/L		119	70 - 130
1,1,2,2-Tetrachloroethane	5.00	4.40		ug/L		88	70 - 130
1,1,2-Trichloroethane	5.00	4.53		ug/L		91	70 - 130
1,1-Dichloroethane	5.00	5.81		ug/L		116	70 - 130
1,1-Dichlorethylene	5.00	5.60		ug/L		112	70 - 130
1,1-Dichloropropene	5.00	4.86		ug/L		97	70 - 130
1,2,3-Trichlorobenzene	5.00	4.64		ug/L		93	70 - 130
1,2,3-Trichloropropane	5.00	4.32		ug/L		86	70 - 130
1,2,4-Trichlorobenzene	5.00	4.84		ug/L		97	70 - 130
1,2,4-Trimethy benzene	5.00	6.98	*+	ug/L		140	70 - 130
1,2-Dichloroethane	5.00	4.98		ug/L		100	70 - 130
1,2-Dichloropropane	5.00	5.37		ug/L		107	70 - 130
1,3,5-Trimethy benzene	5.00	6.59	*+	ug/L		132	70 - 130
1,3-Dichloropropane	5.00	4.61		ug/L		92	70 - 130
2,2-Dichloropropane	5.00	5.13		ug/L		103	70 - 130
2-Butanone (MEK)	50.0	30.6	*-	ug/L		61	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	31.0	*-	ug/L		62	70 - 130
Acetone	50.0	36.7	J	ug/L		73	70 - 130
Benzene	5.00	5.37		ug/L		107	70 - 130
Bromobenzene	5.00	6.29		ug/L		126	70 - 130
Bromochloromethane	5.00	5.32		ug/L		106	70 - 130
Bromodichloromethane	5.00	6.07		ug/L		121	70 - 130
Bromoform	5.00	6.13		ug/L		123	70 - 130
Bromomethane (Methyl Bromide)	5.00	5.71		ug/L		114	70 - 130
Carbon disulfide	5.00	7.38	*+	ug/L		148	70 - 130
Carbon tetrachloride	5.00	5.91		ug/L		118	70 - 130
Chlorobenzene	5.00	5.54		ug/L		111	70 - 130
Chlorodibromomethane	5.00	5.59		ug/L		112	70 - 130
cis-1,3-Dichloropropene	5.00	5.26		ug/L		105	70 - 130
Dichloromethane	5.00	5.98		ug/L		120	70 - 130
Ethylbenzene	5.00	5.37		ug/L		107	70 - 130
Hexachlorobutadiene	5.00	5.23		ug/L		105	70 - 130
Isopropyl benzene	5.00	6.97	*+	ug/L		139	70 - 130
m,p-Xylenes	10.0	11.8		ug/L		118	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	6.61	*+	ug/L		132	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30695/3
Matrix: Water
Analysis Batch: 30695

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	4.45		ug/L		89	70 - 130
Naphthalene	5.00	4.03		ug/L		81	70 - 130
n-Butylbenzene	5.00	5.46		ug/L		109	70 - 130
N-Propylbenzene	5.00	5.74		ug/L		115	70 - 130
o-Chlorotoluene	5.00	6.75	*+	ug/L		135	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	5.16		ug/L		103	70 - 130
o-Xylene	5.00	5.66		ug/L		113	70 - 130
p-Chlorotoluene	5.00	5.77		ug/L		115	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	6.73	*+	ug/L		135	70 - 130
p-Isopropyltoluene	5.00	6.32		ug/L		126	70 - 130
sec-Butylbenzene	5.00	6.24		ug/L		125	70 - 130
Styrene	5.00	5.32		ug/L		106	70 - 130
Tert-amyl methyl ether	5.00	4.17		ug/L		83	70 - 130
1,3-Dichloropropene, Total	10.0	10.2		ug/L		102	70 - 130
Tert-butyl ethyl ether	5.00	5.09		ug/L		102	70 - 130
tert-Butylbenzene	5.00	6.79	*+	ug/L		136	70 - 130
Tetrachloroethene (PCE)	5.00	5.33		ug/L		107	70 - 130
Toluene	5.00	5.32		ug/L		106	70 - 130
trans-1,2-Dichloroethylene	5.00	5.87		ug/L		117	70 - 130
trans-1,3-Dichloropropene	5.00	4.95		ug/L		99	70 - 130
Trichloroethylene (TCE)	5.00	5.18		ug/L		104	70 - 130
Bromoethane	5.00	7.38	*+	ug/L		148	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	5.73		ug/L		115	70 - 130
Trichlorotrifluoroethane	5.00	6.10		ug/L		122	70 - 130
Diisopropyl ether	5.00	5.54		ug/L		111	70 - 130
Vinyl Chloride (VC)	5.00	5.77		ug/L		115	70 - 130
Xylenes, Total	15.0	17.4		ug/L		116	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	129		70 - 130
Toluene-d8 (Surr)	107		70 - 130

Lab Sample ID: LCSD 380-30695/4
Matrix: Water
Analysis Batch: 30695

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	5.81		ug/L		116	70 - 130	2	20
1,1,1-Trichloroethane	5.00	6.33		ug/L		127	70 - 130	6	20
1,1,2,2-Tetrachloroethane	5.00	4.72		ug/L		94	70 - 130	7	20
1,1,2-Trichloroethane	5.00	4.55		ug/L		91	70 - 130	0	20
1,1-Dichloroethane	5.00	6.02		ug/L		120	70 - 130	4	20
1,1-Dichloroethylene	5.00	5.95		ug/L		119	70 - 130	6	20
1,1-Dichloropropene	5.00	5.19		ug/L		104	70 - 130	7	20
1,2,3-Trichlorobenzene	5.00	4.95		ug/L		99	70 - 130	6	20
1,2,3-Trichloropropane	5.00	4.59		ug/L		92	70 - 130	6	20
1,2,4-Trichlorobenzene	5.00	5.51		ug/L		110	70 - 130	13	20

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCSD 380-30695/4
Matrix: Water
Analysis Batch: 30695

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	7.59	*+	ug/L		152	70 - 130	8	20
1,2-Dichloroethane	5.00	5.40		ug/L		108	70 - 130	8	20
1,2-Dichloropropane	5.00	5.44		ug/L		109	70 - 130	1	20
1,3,5-Trimethy benzene	5.00	7.19	*+	ug/L		144	70 - 130	9	20
1,3-Dichloropropane	5.00	4.64		ug/L		93	70 - 130	1	20
2,2-Dichloropropane	5.00	5.90		ug/L		118	70 - 130	14	20
2-Butanone (MEK)	50.0	30.5	*-	ug/L		61	70 - 130	0	20
4-Methyl-2-pentanone (MIBK)	50.0	31.0	*-	ug/L		62	70 - 130	0	20
Acetone	50.0	35.7	J	ug/L		71	70 - 130	3	20
Benzene	5.00	5.63		ug/L		113	70 - 130	5	20
Bromobenzene	5.00	6.99	*+	ug/L		140	70 - 130	11	20
Bromochloromethane	5.00	5.68		ug/L		114	70 - 130	7	20
Bromodichloromethane	5.00	6.41		ug/L		128	70 - 130	5	20
Bromoform	5.00	6.19		ug/L		124	70 - 130	1	20
Bromomethane (Methyl Bromide)	5.00	6.13		ug/L		123	70 - 130	7	20
Carbon disulfide	5.00	7.99	*+	ug/L		160	70 - 130	8	20
Carbon tetrachloride	5.00	6.23		ug/L		125	70 - 130	5	20
Chlorobenzene	5.00	5.70		ug/L		114	70 - 130	3	20
Chlorodibromomethane	5.00	5.67		ug/L		113	70 - 130	1	20
cis-1,3-Dichloropropene	5.00	5.60		ug/L		112	70 - 130	6	20
Dichloromethane	5.00	6.35		ug/L		127	70 - 130	6	20
Ethylbenzene	5.00	5.59		ug/L		112	70 - 130	4	20
Hexachlorobutadiene	5.00	5.43		ug/L		109	70 - 130	4	20
Isopropy benzene	5.00	7.78	*+	ug/L		156	70 - 130	11	20
m,p-Xylenes	10.0	12.2		ug/L		122	70 - 130	4	20
m-Dichlorobenzene (1,3-DCB)	5.00	7.38	*+	ug/L		148	70 - 130	11	20
Methyl-tert-butyl Ether (MTBE)	5.00	4.67		ug/L		93	70 - 130	5	20
Naphthalene	5.00	4.07		ug/L		81	70 - 130	1	20
n-Butylbenzene	5.00	6.41		ug/L		128	70 - 130	16	20
N-Propylbenzene	5.00	6.02		ug/L		120	70 - 130	5	20
o-Chlorotoluene	5.00	7.69	*+	ug/L		154	70 - 130	13	20
o-Dichlorobenzene (1,2-DCB)	5.00	5.95		ug/L		119	70 - 130	14	20
o-Xylene	5.00	5.83		ug/L		117	70 - 130	3	20
p-Chlorotoluene	5.00	5.93		ug/L		119	70 - 130	3	20
p-Dichlorobenzene (1,4-DCB)	5.00	7.28	*+	ug/L		146	70 - 130	8	20
p-Isopropyltoluene	5.00	7.01	*+	ug/L		140	70 - 130	10	20
sec-Butylbenzene	5.00	6.98	*+	ug/L		140	70 - 130	11	20
Styrene	5.00	5.43		ug/L		109	70 - 130	2	20
Tert-amyl methyl ether	5.00	4.32		ug/L		86	70 - 130	4	20
1,3-Dichloropropene, Total	10.0	10.5		ug/L		105	70 - 130	3	20
Tert-butyl ethyl ether	5.00	5.27		ug/L		105	70 - 130	3	20
tert-Butylbenzene	5.00	7.58	*+	ug/L		152	70 - 130	11	20
Tetrachloroethene (PCE)	5.00	5.47		ug/L		109	70 - 130	3	20
Toluene	5.00	5.66		ug/L		113	70 - 130	6	20
trans-1,2-Dichloroethylene	5.00	6.27		ug/L		125	70 - 130	7	20
trans-1,3-Dichloropropene	5.00	4.93		ug/L		99	70 - 130	0	20
Trichloroethylene (TCE)	5.00	5.51		ug/L		110	70 - 130	6	20
Bromoethane	5.00	7.81	*+	ug/L		156	70 - 130	6	20

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCSD 380-30695/4
Matrix: Water
Analysis Batch: 30695

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	6.14		ug/L		123	70 - 130	7	20
Trichlorotrifluoroethane	5.00	6.19		ug/L		124	70 - 130	2	20
Diisopropyl ether	5.00	5.75		ug/L		115	70 - 130	4	20
Vinyl Chloride (VC)	5.00	6.27		ug/L		125	70 - 130	8	20
Xylenes, Total	15.0	18.1		ug/L		120	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	120		70 - 130
Toluene-d8 (Surr)	101		70 - 130

Lab Sample ID: MB 380-30956/8
Matrix: Water
Analysis Batch: 30956

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			01/30/23 14:05	1
1,1,1-Trichloroethane	ND		0.50	ug/L			01/30/23 14:05	1
1,1,2,2-Tetrachloroethane	ND		0.50	ug/L			01/30/23 14:05	1
1,1,2-Trichloroethane	ND		0.50	ug/L			01/30/23 14:05	1
1,1-Dichloroethane	ND		0.50	ug/L			01/30/23 14:05	1
1,1-Dichloroethylene	ND		0.50	ug/L			01/30/23 14:05	1
1,1-Dichloropropene	ND		0.50	ug/L			01/30/23 14:05	1
1,2,3-Trichlorobenzene	ND		0.50	ug/L			01/30/23 14:05	1
1,2,3-Trichloropropane	ND		0.50	ug/L			01/30/23 14:05	1
1,2,4-Trichlorobenzene	ND		0.50	ug/L			01/30/23 14:05	1
1,2,4-Trimethy benzene	ND		0.50	ug/L			01/30/23 14:05	1
1,2-Dichloroethane	ND		0.50	ug/L			01/30/23 14:05	1
1,2-Dichloropropane	ND		0.50	ug/L			01/30/23 14:05	1
1,3,5-Trimethy benzene	ND		0.50	ug/L			01/30/23 14:05	1
1,3-Dichloropropane	ND		0.50	ug/L			01/30/23 14:05	1
2,2-Dichloropropane	ND		0.50	ug/L			01/30/23 14:05	1
2-Butanone (MEK)	ND		5.0	ug/L			01/30/23 14:05	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	ug/L			01/30/23 14:05	1
Acetone	ND		500	ug/L			01/30/23 14:05	1
Benzene	ND		0.50	ug/L			01/30/23 14:05	1
Bromobenzene	ND		0.50	ug/L			01/30/23 14:05	1
Bromochloromethane	ND		0.50	ug/L			01/30/23 14:05	1
Bromodichloromethane	ND		0.50	ug/L			01/30/23 14:05	1
Bromoform	ND		0.50	ug/L			01/30/23 14:05	1
Bromomethane (Methyl Bromide)	ND		0.50	ug/L			01/30/23 14:05	1
Carbon disulfide	ND		0.50	ug/L			01/30/23 14:05	1
Carbon tetrachloride	ND		0.50	ug/L			01/30/23 14:05	1
Chlorobenzene	ND		0.50	ug/L			01/30/23 14:05	1
Chlorodibromomethane	ND		0.50	ug/L			01/30/23 14:05	1
Chloroethane	ND		0.50	ug/L			01/30/23 14:05	1
Chloroform (Trichloromethane)	ND		0.50	ug/L			01/30/23 14:05	1
cis-1,2-Dichloroethylene	ND		0.50	ug/L			01/30/23 14:05	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30956/8
Matrix: Water
Analysis Batch: 30956

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			01/30/23 14:05	1
Dibromomethane	ND		0.50	ug/L			01/30/23 14:05	1
Dichlorodifluoromethane	ND		0.50	ug/L			01/30/23 14:05	1
Dichloromethane	ND		0.50	ug/L			01/30/23 14:05	1
Ethylbenzene	ND		0.50	ug/L			01/30/23 14:05	1
Hexachlorobutadiene	ND		0.50	ug/L			01/30/23 14:05	1
Isopropyl benzene	ND		0.50	ug/L			01/30/23 14:05	1
m,p-Xylenes	ND		0.50	ug/L			01/30/23 14:05	1
m-Dichlorobenzene (1,3-DCB)	ND		0.50	ug/L			01/30/23 14:05	1
Methyl-tert-butyl Ether (MTBE)	ND		0.50	ug/L			01/30/23 14:05	1
Naphthalene	ND		0.50	ug/L			01/30/23 14:05	1
n-Butylbenzene	ND		0.50	ug/L			01/30/23 14:05	1
N-Propylbenzene	ND		0.50	ug/L			01/30/23 14:05	1
o-Chlorotoluene	ND		0.50	ug/L			01/30/23 14:05	1
o-Dichlorobenzene (1,2-DCB)	ND		0.50	ug/L			01/30/23 14:05	1
o-Xylene	ND		0.50	ug/L			01/30/23 14:05	1
p-Chlorotoluene	ND		0.50	ug/L			01/30/23 14:05	1
p-Dichlorobenzene (1,4-DCB)	ND		0.50	ug/L			01/30/23 14:05	1
p-Isopropyltoluene	ND		0.50	ug/L			01/30/23 14:05	1
sec-Butylbenzene	ND		0.50	ug/L			01/30/23 14:05	1
Styrene	ND		0.50	ug/L			01/30/23 14:05	1
Tert-amyl methyl ether	ND		3.0	ug/L			01/30/23 14:05	1
1,3-Dichloropropene, Total	ND		0.50	ug/L			01/30/23 14:05	1
Tert-butyl ethyl ether	ND		3.0	ug/L			01/30/23 14:05	1
tert-Butylbenzene	ND		0.50	ug/L			01/30/23 14:05	1
Tetrachloroethene (PCE)	ND		0.50	ug/L			01/30/23 14:05	1
Toluene	ND		0.50	ug/L			01/30/23 14:05	1
trans-1,2-Dichloroethylene	ND		0.50	ug/L			01/30/23 14:05	1
trans-1,3-Dichloropropene	ND		0.50	ug/L			01/30/23 14:05	1
Trichloroethylene (TCE)	ND		0.50	ug/L			01/30/23 14:05	1
Bromoethane	ND		0.50	ug/L			01/30/23 14:05	1
Trichlorofluoromethane (Freon 11)	ND		0.50	ug/L			01/30/23 14:05	1
Chloromethane (methyl chloride)	ND		0.50	ug/L			01/30/23 14:05	1
Trichlorotrifluoroethane	ND		0.50	ug/L			01/30/23 14:05	1
Diisopropyl ether	ND		3.0	ug/L			01/30/23 14:05	1
Vinyl Chloride (VC)	ND		0.30	ug/L			01/30/23 14:05	1
Xylenes, Total	ND		0.50	ug/L			01/30/23 14:05	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			N/A		01/30/23 14:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		01/30/23 14:05	1
4-Bromofluorobenzene (Surr)	92		70 - 130		01/30/23 14:05	1
Toluene-d8 (Surr)	79		70 - 130		01/30/23 14:05	1

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30956/4
Matrix: Water
Analysis Batch: 30956

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	5.10		ug/L		102	70 - 130
1,1,1-Trichloroethane	5.00	5.15		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	5.00	4.99		ug/L		100	70 - 130
1,1,2-Trichloroethane	5.00	4.80		ug/L		96	70 - 130
1,1-Dichloroethane	5.00	4.97		ug/L		99	70 - 130
1,1-Dichlorethylene	5.00	4.83		ug/L		97	70 - 130
1,1-Dichloropropene	5.00	4.90		ug/L		98	70 - 130
1,2,3-Trichlorobenzene	5.00	4.81		ug/L		96	70 - 130
1,2,3-Trichloropropane	5.00	4.83		ug/L		97	70 - 130
1,2,4-Trichlorobenzene	5.00	4.61		ug/L		92	70 - 130
1,2,4-Trimethy benzene	5.00	5.31		ug/L		106	70 - 130
1,2-Dichloroethane	5.00	5.11		ug/L		102	70 - 130
1,2-Dichloropropane	5.00	4.99		ug/L		100	70 - 130
1,3,5-Trimethy benzene	5.00	5.25		ug/L		105	70 - 130
1,3-Dichloropropane	5.00	5.00		ug/L		100	70 - 130
2,2-Dichloropropane	5.00	6.19		ug/L		124	70 - 130
2-Butanone (MEK)	50.0	41.6		ug/L		83	70 - 130
4-Methyl-2-pentanone (MIBK)	50.0	51.4		ug/L		103	70 - 130
Acetone	50.0	45.4	J	ug/L		91	70 - 130
Benzene	5.00	5.10		ug/L		102	70 - 130
Bromobenzene	5.00	4.94		ug/L		99	70 - 130
Bromochloromethane	5.00	5.19		ug/L		104	70 - 130
Bromodichloromethane	5.00	5.19		ug/L		104	70 - 130
Bromoform	5.00	5.65		ug/L		113	70 - 130
Bromomethane (Methyl Bromide)	5.00	5.03		ug/L		101	70 - 130
Carbon disulfide	5.00	4.90		ug/L		98	70 - 130
Carbon tetrachloride	5.00	5.12		ug/L		102	70 - 130
Chlorobenzene	5.00	5.06		ug/L		101	70 - 130
Chlorodibromomethane	5.00	5.25		ug/L		105	70 - 130
cis-1,3-Dichloropropene	5.00	4.99		ug/L		100	70 - 130
Dichloromethane	5.00	4.90		ug/L		98	70 - 130
Ethylbenzene	5.00	5.11		ug/L		102	70 - 130
Hexachlorobutadiene	5.00	5.02		ug/L		100	70 - 130
Isopropy benzene	5.00	5.01		ug/L		100	70 - 130
m,p-Xylenes	10.0	11.0		ug/L		110	70 - 130
m-Dichlorobenzene (1,3-DCB)	5.00	5.09		ug/L		102	70 - 130
Methyl-tert-butyl Ether (MTBE)	5.00	5.54		ug/L		111	70 - 130
Naphthalene	5.00	4.43		ug/L		89	70 - 130
n-Butylbenzene	5.00	5.05		ug/L		101	70 - 130
N-Propylbenzene	5.00	5.24		ug/L		105	70 - 130
o-Chlorotoluene	5.00	5.17		ug/L		103	70 - 130
o-Dichlorobenzene (1,2-DCB)	5.00	4.86		ug/L		97	70 - 130
o-Xylene	5.00	5.13		ug/L		103	70 - 130
p-Chlorotoluene	5.00	5.38		ug/L		108	70 - 130
p-Dichlorobenzene (1,4-DCB)	5.00	5.18		ug/L		104	70 - 130
p-Isopropyltoluene	5.00	5.40		ug/L		108	70 - 130
sec-Butylbenzene	5.00	5.32		ug/L		106	70 - 130
Styrene	5.00	5.28		ug/L		106	70 - 130

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30956/4
Matrix: Water
Analysis Batch: 30956

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	5.90		ug/L		118	70 - 130
1,3-Dichloropropene, Total	10.0	10.8		ug/L		108	70 - 130
Tert-butyl ethyl ether	5.00	5.65		ug/L		113	70 - 130
tert-Butylbenzene	5.00	5.10		ug/L		102	70 - 130
Tetrachloroethene (PCE)	5.00	4.98		ug/L		100	70 - 130
Toluene	5.00	5.16		ug/L		103	70 - 130
trans-1,2-Dichloroethylene	5.00	5.01		ug/L		100	70 - 130
trans-1,3-Dichloropropene	5.00	5.79		ug/L		116	70 - 130
Trichloroethylene (TCE)	5.00	5.23		ug/L		105	70 - 130
Bromoethane	5.00	4.72		ug/L		94	70 - 130
Trichlorofluoromethane (Freon 11)	5.00	5.18		ug/L		104	70 - 130
Trichlorotrifluoroethane	5.00	4.73		ug/L		95	70 - 130
Diisopropyl ether	5.00	4.95		ug/L		99	70 - 130
Vinyl Chloride (VC)	5.00	4.78		ug/L		96	70 - 130
Xylenes, Total	15.0	16.1		ug/L		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 380-30956/5
Matrix: Water
Analysis Batch: 30956

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	4.76		ug/L		95	70 - 130	7	20
1,1,1-Trichloroethane	5.00	4.59		ug/L		92	70 - 130	11	20
1,1,1,2,2-Tetrachloroethane	5.00	4.98		ug/L		100	70 - 130	0	20
1,1,2-Trichloroethane	5.00	4.74		ug/L		95	70 - 130	1	20
1,1-Dichloroethane	5.00	4.48		ug/L		90	70 - 130	10	20
1,1-Dichlorethylene	5.00	4.48		ug/L		90	70 - 130	8	20
1,1-Dichloropropene	5.00	4.54		ug/L		91	70 - 130	8	20
1,2,3-Trichlorobenzene	5.00	5.15		ug/L		103	70 - 130	7	20
1,2,3-Trichloropropane	5.00	4.86		ug/L		97	70 - 130	1	20
1,2,4-Trichlorobenzene	5.00	4.91		ug/L		98	70 - 130	6	20
1,2,4-Trimethy benzene	5.00	5.16		ug/L		103	70 - 130	3	20
1,2-Dichloroethane	5.00	4.74		ug/L		95	70 - 130	7	20
1,2-Dichloropropane	5.00	4.61		ug/L		92	70 - 130	8	20
1,3,5-Trimethy benzene	5.00	5.11		ug/L		102	70 - 130	3	20
1,3-Dichloropropane	5.00	4.68		ug/L		94	70 - 130	7	20
2,2-Dichloropropane	5.00	5.44		ug/L		109	70 - 130	13	20
2-Butanone (MEK)	50.0	39.2		ug/L		78	70 - 130	6	20
4-Methyl-2-pentanone (MIBK)	50.0	48.8		ug/L		98	70 - 130	5	20
Acetone	50.0	42.7	J	ug/L		85	70 - 130	6	20
Benzene	5.00	4.83		ug/L		97	70 - 130	5	20
Bromobenzene	5.00	4.84		ug/L		97	70 - 130	2	20
Bromochloromethane	5.00	4.95		ug/L		99	70 - 130	5	20

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCSD 380-30956/5
Matrix: Water
Analysis Batch: 30956

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	4.73		ug/L		95	70 - 130	9	20
Bromoform	5.00	5.53		ug/L		111	70 - 130	2	20
Bromomethane (Methyl Bromide)	5.00	4.14		ug/L		83	70 - 130	19	20
Carbon disulfide	5.00	4.54		ug/L		91	70 - 130	8	20
Carbon tetrachloride	5.00	4.76		ug/L		95	70 - 130	7	20
Chlorobenzene	5.00	4.66		ug/L		93	70 - 130	8	20
Chlorodibromomethane	5.00	4.83		ug/L		97	70 - 130	8	20
cis-1,3-Dichloropropene	5.00	4.88		ug/L		98	70 - 130	2	20
Dichloromethane	5.00	4.57		ug/L		91	70 - 130	7	20
Ethylbenzene	5.00	4.77		ug/L		95	70 - 130	7	20
Hexachlorobutadiene	5.00	4.84		ug/L		97	70 - 130	4	20
Isopropyl benzene	5.00	4.94		ug/L		99	70 - 130	1	20
m,p-Xylenes	10.0	10.3		ug/L		103	70 - 130	7	20
m-Dichlorobenzene (1,3-DCB)	5.00	4.95		ug/L		99	70 - 130	3	20
Methyl-tert-butyl Ether (MTBE)	5.00	5.02		ug/L		100	70 - 130	10	20
Naphthalene	5.00	4.92		ug/L		98	70 - 130	10	20
n-Butylbenzene	5.00	5.01		ug/L		100	70 - 130	1	20
N-Propylbenzene	5.00	4.92		ug/L		98	70 - 130	6	20
o-Chlorotoluene	5.00	5.04		ug/L		101	70 - 130	3	20
o-Dichlorobenzene (1,2-DCB)	5.00	4.97		ug/L		99	70 - 130	2	20
o-Xylene	5.00	4.87		ug/L		97	70 - 130	5	20
p-Chlorotoluene	5.00	4.96		ug/L		99	70 - 130	8	20
p-Dichlorobenzene (1,4-DCB)	5.00	4.96		ug/L		99	70 - 130	4	20
p-Isopropyltoluene	5.00	5.30		ug/L		106	70 - 130	2	20
sec-Butylbenzene	5.00	5.14		ug/L		103	70 - 130	4	20
Styrene	5.00	4.96		ug/L		99	70 - 130	6	20
Tert-amyl methyl ether	5.00	5.54		ug/L		111	70 - 130	6	20
1,3-Dichloropropene, Total	10.0	10.2		ug/L		102	70 - 130	5	20
Tert-butyl ethyl ether	5.00	5.45		ug/L		109	70 - 130	4	20
tert-Butylbenzene	5.00	5.00		ug/L		100	70 - 130	2	20
Tetrachloroethene (PCE)	5.00	4.68		ug/L		94	70 - 130	6	20
Toluene	5.00	4.82		ug/L		96	70 - 130	7	20
trans-1,2-Dichloroethylene	5.00	4.58		ug/L		92	70 - 130	9	20
trans-1,3-Dichloropropene	5.00	5.35		ug/L		107	70 - 130	8	20
Trichloroethylene (TCE)	5.00	4.83		ug/L		97	70 - 130	8	20
Bromoethane	5.00	4.24		ug/L		85	70 - 130	11	20
Trichlorofluoromethane (Freon 11)	5.00	4.78		ug/L		96	70 - 130	8	20
Trichlorotrifluoroethane	5.00	4.44		ug/L		89	70 - 130	6	20
Diisopropyl ether	5.00	4.54		ug/L		91	70 - 130	9	20
Vinyl Chloride (VC)	5.00	4.24		ug/L		85	70 - 130	12	20
Xylenes, Total	15.0	15.2		ug/L		101	70 - 130	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130
Toluene-d8 (Surr)	100		70 - 130

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MRL 380-30956/3
Matrix: Water
Analysis Batch: 30956

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	0.428	J	ug/L		86	50 - 150
Vinyl Chloride (VC)	0.250	0.272	J	ug/L		109	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	MRL Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	104		70 - 130
Toluene-d8 (Surr)	89		70 - 130

Lab Sample ID: MRL 380-30956/7
Matrix: Water
Analysis Batch: 30956

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	0.499	J	ug/L		100	50 - 150
1,1,1-Trichloroethane	0.500	0.530		ug/L		106	50 - 150
1,1,2,2-Tetrachloroethane	0.500	0.593		ug/L		119	50 - 150
1,1,2-Trichloroethane	0.500	0.536		ug/L		107	50 - 150
1,1-Dichloroethane	0.500	0.543		ug/L		109	50 - 150
1,1-Dichlorethylene	0.500	0.592		ug/L		118	50 - 150
1,1-Dichloropropene	0.500	0.586		ug/L		117	50 - 150
1,2,3-Trichlorobenzene	0.500	0.572		ug/L		114	50 - 150
1,2,3-Trichloropropane	0.500	0.570		ug/L		114	50 - 150
1,2,4-Trichlorobenzene	0.500	0.548		ug/L		110	50 - 150
1,2,4-Trimethy benzene	0.500	0.505		ug/L		101	50 - 150
1,2-Dichloroethane	0.500	0.550		ug/L		110	50 - 150
1,2-Dichloropropane	0.500	0.532		ug/L		106	50 - 150
1,3,5-Trimethy benzene	0.500	0.492	J	ug/L		98	50 - 150
1,3-Dichloropropane	0.500	0.530		ug/L		106	50 - 150
2,2-Dichloropropane	0.500	0.706		ug/L		141	50 - 150
2-Butanone (MEK)	5.00	4.81	J	ug/L		96	50 - 150
4-Methyl-2-pentanone (MIBK)	5.00	4.59	J	ug/L		92	50 - 150
Acetone	5.00	ND		ug/L		67	50 - 150
Benzene	0.500	0.566		ug/L		113	50 - 150
Bromobenzene	0.500	0.578		ug/L		116	50 - 150
Bromochloromethane	0.500	0.544		ug/L		109	50 - 150
Bromodichloromethane	0.500	0.493	J	ug/L		99	50 - 150
Bromoform	0.500	0.639		ug/L		128	50 - 150
Bromomethane (Methyl Bromide)	0.500	0.487	J	ug/L		97	50 - 150
Carbon disulfide	0.500	0.481	J	ug/L		96	50 - 150
Carbon tetrachloride	0.500	0.498	J	ug/L		100	50 - 150
Chlorobenzene	0.500	0.511		ug/L		102	50 - 150
Chlorodibromomethane	0.500	0.469	J	ug/L		94	50 - 150
cis-1,3-Dichloropropene	0.500	0.499	J	ug/L		100	50 - 150
Dichloromethane	0.500	0.555		ug/L		111	50 - 150
Ethylbenzene	0.500	0.456	J	ug/L		91	50 - 150
Hexachlorobutadiene	0.500	0.615		ug/L		123	50 - 150
Isopropy benzene	0.500	0.516		ug/L		103	50 - 150
m,p-Xylenes	1.00	0.880		ug/L		88	50 - 150

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MRL 380-30956/7
Matrix: Water
Analysis Batch: 30956

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	0.621		ug/L		124	50 - 150
Methyl-tert-butyl Ether (MTBE)	0.500	0.577		ug/L		115	50 - 150
Naphthalene	0.500	0.476	J	ug/L		95	50 - 150
n-Butylbenzene	0.500	0.529		ug/L		106	50 - 150
N-Propylbenzene	0.500	0.471	J	ug/L		94	50 - 150
o-Chlorotoluene	0.500	0.584		ug/L		117	50 - 150
o-Dichlorobenzene (1,2-DCB)	0.500	0.621		ug/L		124	50 - 150
o-Xylene	0.500	0.453	J	ug/L		91	50 - 150
p-Chlorotoluene	0.500	0.472	J	ug/L		94	50 - 150
p-Dichlorobenzene (1,4-DCB)	0.500	0.580		ug/L		116	50 - 150
p-Isopropyltoluene	0.500	0.480	J	ug/L		96	50 - 150
sec-Butylbenzene	0.500	0.512		ug/L		102	50 - 150
Styrene	0.500	0.407	J	ug/L		81	50 - 150
Tert-amyl methyl ether	0.500	0.614	J	ug/L		123	50 - 150
1,3-Dichloropropene, Total	1.00	1.01		ug/L		101	50 - 150
Tert-butyl ethyl ether	0.500	0.618	J	ug/L		124	50 - 150
tert-Butylbenzene	0.500	0.478	J	ug/L		96	50 - 150
Tetrachloroethene (PCE)	0.500	0.557		ug/L		111	50 - 150
Toluene	0.500	0.490	J	ug/L		98	50 - 150
trans-1,2-Dichloroethylene	0.500	0.568		ug/L		114	50 - 150
trans-1,3-Dichloropropene	0.500	0.510		ug/L		102	50 - 150
Trichloroethylene (TCE)	0.500	0.572		ug/L		114	50 - 150
Bromoethane	0.500	0.555		ug/L		111	50 - 150
Trichlorofluoromethane (Freon 11)	0.500	0.484	J	ug/L		97	50 - 150
Trichlorotrifluoroethane	0.500	0.554		ug/L		111	50 - 150
Diisopropyl ether	0.500	0.567	J	ug/L		113	50 - 150
Vinyl Chloride (VC)	0.500	0.497		ug/L		99	50 - 150
Xylenes, Total	1.50	1.33		ug/L		89	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130
Toluene-d8 (Surr)	91		70 - 130

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

Lab Sample ID: MB 380-30366/5
Matrix: Water
Analysis Batch: 30366

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			01/20/23 17:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		01/20/23 17:45	1
4-Bromofluorobenzene (Surr)	96		70 - 130		01/20/23 17:45	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		01/20/23 17:45	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30366/2
Matrix: Water
Analysis Batch: 30366

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	5.34		ug/L		107	70 - 130
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Toluene-d8 (Surr)	102		70 - 130				
4-Bromofluorobenzene (Surr)	97		70 - 130				
1,2-Dichloroethane-d4 (Surr)	98		70 - 130				

Lab Sample ID: LCSD 380-30366/3
Matrix: Water
Analysis Batch: 30366

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	5.44		ug/L		109	70 - 130	2	20
LCSD LCSD									
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	101		70 - 130						
4-Bromofluorobenzene (Surr)	98		70 - 130						
1,2-Dichloroethane-d4 (Surr)	99		70 - 130						

Lab Sample ID: MRL 380-30366/4
Matrix: Water
Analysis Batch: 30366

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	1.94	J	ug/L		97	50 - 150
MRL MRL							
Surrogate	%Recovery	Qualifier	Limits				
Toluene-d8 (Surr)	100		50 - 150				
4-Bromofluorobenzene (Surr)	98		50 - 150				
1,2-Dichloroethane-d4 (Surr)	99		50 - 150				

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

Lab Sample ID: MB 380-30404/1-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30404

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
2,4'-DDE	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
2,4'-DDT	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
2,4-Dinitrotoluene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
2,6-Dinitrotoluene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
4,4'-DDD	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
4,4'-DDE	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
4,4'-DDT	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Acenaphthene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Acenaphthylene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30404/1-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30404

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Acetochlor	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Alachlor	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
alpha-BHC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
alpha-Chlordane	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Anthracene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 09:31	1
Atrazine	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Benz(a)anthracene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Benzo[a]pyrene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 09:31	1
Benzo[b]fluoranthene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 09:31	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Benzo[k]fluoranthene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 09:31	1
beta-BHC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Bromacil	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Butachlor	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Butylbenzylphthalate	ND		0.49	ug/L		01/21/23 11:03	01/23/23 09:31	1
Caffeine	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Chlorobenzilate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Chloroneb	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Chlorpyrifos	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Chrysene	ND		0.020	ug/L		01/21/23 11:03	01/23/23 09:31	1
delta-BHC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		01/21/23 11:03	01/23/23 09:31	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		01/21/23 11:03	01/23/23 09:31	1
Diazinon (Qualitative)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Diclorvos (DDVP)	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Dieldrin	ND		0.20	ug/L		01/21/23 11:03	01/23/23 09:31	1
Diethylphthalate	ND		0.49	ug/L		01/21/23 11:03	01/23/23 09:31	1
Dimethoate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Dimethylphthalate	ND		0.49	ug/L		01/21/23 11:03	01/23/23 09:31	1
Di-n-butyl phthalate	ND		0.99	ug/L		01/21/23 11:03	01/23/23 09:31	1
Di-n-octyl phthalate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Endosulfan I (Alpha)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Endosulfan II (Beta)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Endosulfan sulfate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Endrin	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Endrin aldehyde	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
EPTC	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Fluoranthene	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Fluorene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
gamma-Chlordane	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Heptachlor	ND		0.039	ug/L		01/21/23 11:03	01/23/23 09:31	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Hexachlorobenzene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Isophorone	ND		0.49	ug/L		01/21/23 11:03	01/23/23 09:31	1
Lindane	ND		0.039	ug/L		01/21/23 11:03	01/23/23 09:31	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MB 380-30404/1-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30404

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Malathion	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Methoxychlor	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Metolachlor	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Metribuzin	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Molinate	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Naphthalene	ND		0.30	ug/L		01/21/23 11:03	01/23/23 09:31	1
Parathion	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		01/21/23 11:03	01/23/23 09:31	1
Phenanthrene	ND		0.039	ug/L		01/21/23 11:03	01/23/23 09:31	1
Propachlor	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Pyrene	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Simazine	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Terbacil	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Terbutylazine	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1
Thiobencarb	ND		0.20	ug/L		01/21/23 11:03	01/23/23 09:31	1
trans-Nonachlor	ND		0.049	ug/L		01/21/23 11:03	01/23/23 09:31	1
Trifluralin	ND		0.099	ug/L		01/21/23 11:03	01/23/23 09:31	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	0.667	T J	ug/L		5.71	N/A	01/21/23 11:03	01/23/23 09:31	1
Unknown	0.493	T J	ug/L		7.31	N/A	01/21/23 11:03	01/23/23 09:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	105		70 - 130	01/21/23 11:03	01/23/23 09:31	1
Triphenylphosphate	100		70 - 130	01/21/23 11:03	01/23/23 09:31	1
Perylene-d12	83		70 - 130	01/21/23 11:03	01/23/23 09:31	1

Lab Sample ID: LCS 380-30404/3-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.97	1.92		ug/L		97	70 - 130
2,4'-DDE	1.97	1.93		ug/L		98	70 - 130
2,4'-DDT	1.97	2.12		ug/L		108	70 - 130
2,4-Dinitrotoluene	1.97	1.97		ug/L		100	70 - 130
2,6-Dinitrotoluene	1.97	2.04		ug/L		104	70 - 130
4,4'-DDD	1.97	2.11		ug/L		107	70 - 130
4,4'-DDE	1.97	1.93		ug/L		98	70 - 130
4,4'-DDT	1.97	2.13		ug/L		108	70 - 130
Acenaphthene	1.97	2.00		ug/L		101	70 - 130
Acenaphthylene	1.97	1.93		ug/L		98	70 - 130
Acetochlor	1.97	2.23		ug/L		113	70 - 130
Alachlor	1.97	2.06		ug/L		105	70 - 130
alpha-BHC	1.97	2.03		ug/L		103	70 - 130
alpha-Chlordane	1.97	1.80		ug/L		91	70 - 130
Anthracene	1.97	1.92		ug/L		97	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30404/3-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Atrazine	1.97	2.05		ug/L		104	70 - 130
Benz(a)anthracene	1.97	2.11		ug/L		107	70 - 130
Benzo[a]pyrene	1.97	2.06		ug/L		104	70 - 130
Benzo[b]fluoranthene	1.97	2.13		ug/L		108	70 - 130
Benzo[g,h,i]perylene	1.97	1.85		ug/L		94	70 - 130
Benzo[k]fluoranthene	1.97	2.04		ug/L		103	70 - 130
beta-BHC	1.97	2.09		ug/L		106	70 - 130
Bromacil	1.97	2.40		ug/L		122	70 - 130
Butachlor	1.97	2.18		ug/L		111	70 - 130
Butylbenzylphthalate	1.97	2.32		ug/L		118	70 - 130
Caffeine	1.97	1.57		ug/L		80	45 - 137
Chlorobenzilate	1.97	2.19		ug/L		111	70 - 130
Chloroneb	1.97	1.92		ug/L		97	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	1.90		ug/L		96	70 - 130
Chlorpyrifos	1.97	2.12		ug/L		107	70 - 130
Chrysene	1.97	2.01		ug/L		102	70 - 130
delta-BHC	1.97	2.09		ug/L		106	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.34		ug/L		119	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.17		ug/L		110	70 - 130
Diazinon (Qualitative)	1.97	1.98		ug/L		100	15 - 132
Dibenz(a,h)anthracene	1.97	1.99		ug/L		101	70 - 130
Diclorvos (DDVP)	1.97	2.54		ug/L		129	70 - 130
Dieldrin	1.97	2.08		ug/L		105	70 - 130
Diethylphthalate	1.97	2.13		ug/L		108	70 - 130
Dimethoate	1.97	1.44		ug/L		73	35 - 100
Dimethylphthalate	1.97	2.06		ug/L		104	70 - 130
Di-n-butyl phthalate	3.94	4.15		ug/L		105	70 - 130
Di-n-octyl phthalate	1.97	2.17		ug/L		110	70 - 130
Endosulfan I (Alpha)	1.97	1.98		ug/L		100	70 - 130
Endosulfan II (Beta)	1.97	2.07		ug/L		105	70 - 130
Endosulfan sulfate	1.97	2.23		ug/L		113	70 - 130
Endrin	1.97	2.38		ug/L		121	70 - 130
Endrin aldehyde	1.97	1.55		ug/L		79	70 - 130
EPTC	1.97	2.12		ug/L		107	70 - 130
Fluoranthene	1.97	2.09		ug/L		106	70 - 130
Fluorene	1.97	2.03		ug/L		103	70 - 130
gamma-Chlordane	1.97	1.79		ug/L		91	70 - 130
Heptachlor	1.97	2.11		ug/L		107	70 - 130
Heptachlor epoxide (isomer B)	1.97	1.89		ug/L		96	70 - 130
Hexachlorobenzene	1.97	1.81		ug/L		92	70 - 130
Hexachlorocyclopentadiene	1.97	2.07		ug/L		105	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	1.98		ug/L		100	70 - 130
Isophorone	1.97	2.30		ug/L		116	70 - 130
Lindane	1.97	2.00		ug/L		102	70 - 130
Malathion	1.97	2.28		ug/L		116	70 - 130
Methoxychlor	1.97	2.41		ug/L		122	70 - 130
Metolachlor	1.97	2.30		ug/L		117	70 - 130
Metribuzin	1.97	2.36		ug/L		120	70 - 130
Molinate	1.97	2.14		ug/L		108	70 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30404/3-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	1.97	2.04		ug/L		103	70 - 130
Parathion	1.97	2.46		ug/L		125	70 - 130
Pendimethalin (Penoxaline)	1.97	2.12		ug/L		107	70 - 130
Phenanthrene	1.97	1.94		ug/L		98	70 - 130
Propachlor	1.97	2.25		ug/L		114	70 - 130
Pyrene	1.97	2.10		ug/L		106	70 - 130
Simazine	1.97	2.20		ug/L		112	70 - 130
Terbacil	1.97	2.52		ug/L		128	70 - 130
Terbutylazine	1.97	2.14		ug/L		109	70 - 130
Thiobencarb	1.97	2.33		ug/L		118	70 - 130
trans-Nonachlor	1.97	1.79		ug/L		91	70 - 130
Trifluralin	1.97	1.91		ug/L		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	101		70 - 130
Triphenylphosphate	102		70 - 130
Perylene-d12	95		70 - 130

Lab Sample ID: LCSD 380-30404/4-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.98	1.86		ug/L		94	70 - 130	3	20
2,4'-DDE	1.98	1.90		ug/L		96	70 - 130	2	20
2,4'-DDT	1.98	2.02		ug/L		102	70 - 130	5	20
2,4-Dinitrotoluene	1.98	1.86		ug/L		94	70 - 130	6	20
2,6-Dinitrotoluene	1.98	1.95		ug/L		99	70 - 130	5	20
4,4'-DDD	1.98	2.05		ug/L		104	70 - 130	3	20
4,4'-DDE	1.98	1.91		ug/L		97	70 - 130	1	20
4,4'-DDT	1.98	2.01		ug/L		102	70 - 130	6	20
Acenaphthene	1.98	1.99		ug/L		101	70 - 130	1	20
Acenaphthylene	1.98	1.85		ug/L		94	70 - 130	4	20
Acetochlor	1.98	2.25		ug/L		114	70 - 130	1	20
Alachlor	1.98	2.11		ug/L		107	70 - 130	2	20
alpha-BHC	1.98	1.99		ug/L		101	70 - 130	2	20
alpha-Chlordane	1.98	1.81		ug/L		92	70 - 130	0	20
Anthracene	1.98	1.86		ug/L		94	70 - 130	3	20
Atrazine	1.98	1.95		ug/L		99	70 - 130	5	20
Benz(a)anthracene	1.98	1.96		ug/L		99	70 - 130	7	20
Benzo[a]pyrene	1.98	1.96		ug/L		99	70 - 130	5	20
Benzo[b]fluoranthene	1.98	2.10		ug/L		106	70 - 130	1	20
Benzo[g,h,i]perylene	1.98	1.97		ug/L		100	70 - 130	6	20
Benzo[k]fluoranthene	1.98	2.11		ug/L		107	70 - 130	4	20
beta-BHC	1.98	1.96		ug/L		99	70 - 130	6	20
Bromacil	1.98	2.27		ug/L		115	70 - 130	6	20
Butachlor	1.98	2.14		ug/L		108	70 - 130	2	20
Butylbenzylphthalate	1.98	2.22		ug/L		113	70 - 130	4	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCSD 380-30404/4-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD
									Limit
Caffeine	1.98	1.61		ug/L		81	45 - 137	2	20
Chlorobenzilate	1.98	2.15		ug/L		109	70 - 130	2	20
Chloroneb	1.98	1.91		ug/L		97	70 - 130	1	20
Chlorothalonil (Draconil, Bravo)	1.98	1.89		ug/L		96	70 - 130	1	20
Chlorpyrifos	1.98	2.14		ug/L		108	70 - 130	1	20
Chrysene	1.98	2.02		ug/L		102	70 - 130	1	20
delta-BHC	1.98	2.04		ug/L		103	70 - 130	2	20
Di(2-ethylhexyl)adipate	1.98	2.25		ug/L		114	70 - 130	4	20
Bis(2-ethylhexyl) phthalate	1.98	2.19		ug/L		111	70 - 130	1	20
Diazinon (Qualitative)	1.98	1.91		ug/L		97	15 - 132	4	20
Dibenz(a,h)anthracene	1.98	2.12		ug/L		107	70 - 130	7	20
Diclorvos (DDVP)	1.98	2.52		ug/L		127	70 - 130	1	20
Dieldrin	1.98	2.11		ug/L		107	70 - 130	2	20
Diethylphthalate	1.98	2.07		ug/L		105	70 - 130	3	20
Dimethoate	1.98	0.986	*1	ug/L		50	35 - 100	38	20
Dimethylphthalate	1.98	2.03		ug/L		103	70 - 130	2	20
Di-n-butyl phthalate	3.95	4.30		ug/L		109	70 - 130	4	20
Di-n-octyl phthalate	1.98	2.18		ug/L		110	70 - 130	0	20
Endosulfan I (Alpha)	1.98	1.90		ug/L		96	70 - 130	4	20
Endosulfan II (Beta)	1.98	2.10		ug/L		106	70 - 130	2	20
Endosulfan sulfate	1.98	2.12		ug/L		107	70 - 130	5	20
Endrin	1.98	2.32		ug/L		118	70 - 130	2	20
Endrin aldehyde	1.98	1.81		ug/L		92	70 - 130	16	20
EPTC	1.98	2.17		ug/L		110	70 - 130	2	20
Fluoranthene	1.98	2.05		ug/L		104	70 - 130	2	20
Fluorene	1.98	2.01		ug/L		102	70 - 130	1	20
gamma-Chlordane	1.98	1.81		ug/L		92	70 - 130	1	20
Heptachlor	1.98	2.12		ug/L		107	70 - 130	1	20
Heptachlor epoxide (isomer B)	1.98	1.91		ug/L		97	70 - 130	1	20
Hexachlorobenzene	1.98	1.79		ug/L		90	70 - 130	1	20
Hexachlorocyclopentadiene	1.98	2.02		ug/L		102	70 - 130	3	20
Indeno[1,2,3-cd]pyrene	1.98	2.08		ug/L		105	70 - 130	5	20
Isophorone	1.98	2.34		ug/L		119	70 - 130	2	20
Lindane	1.98	1.94		ug/L		98	70 - 130	3	20
Malathion	1.98	2.22		ug/L		112	70 - 130	3	20
Methoxychlor	1.98	2.37		ug/L		120	70 - 130	2	20
Metolachlor	1.98	2.30		ug/L		117	70 - 130	0	20
Metribuzin	1.98	2.29		ug/L		116	70 - 130	3	20
Molinate	1.98	2.16		ug/L		109	70 - 130	1	20
Naphthalene	1.98	2.05		ug/L		104	70 - 130	0	20
Parathion	1.98	2.34		ug/L		118	70 - 130	5	20
Pendimethalin (Penoxaline)	1.98	1.98		ug/L		100	70 - 130	7	20
Phenanthrene	1.98	1.95		ug/L		99	70 - 130	1	20
Propachlor	1.98	2.18		ug/L		110	70 - 130	3	20
Pyrene	1.98	2.05		ug/L		104	70 - 130	2	20
Simazine	1.98	2.04		ug/L		103	70 - 130	8	20
Terbacil	1.98	2.39		ug/L		121	70 - 130	5	20
Terbutylazine	1.98	2.03		ug/L		103	70 - 130	5	20
Thiobencarb	1.98	2.34		ug/L		118	70 - 130	0	20

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCSD 380-30404/4-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
trans-Nonachlor	1.98	1.76		ug/L		89	70 - 130	1	20
Trifluralin	1.98	1.85		ug/L		93	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	103		70 - 130
Triphenylphosphate	97		70 - 130
Perylene-d12	92		70 - 130

Lab Sample ID: MRL 380-30404/2-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0987	0.158	^3+	ug/L		160	50 - 150
2,4'-DDE	0.0987	0.102		ug/L		104	50 - 150
2,4'-DDT	0.0987	0.107		ug/L		108	50 - 150
2,4-Dinitrotoluene	0.0987	0.0889	J	ug/L		90	50 - 150
2,6-Dinitrotoluene	0.0987	0.0923	J	ug/L		94	50 - 150
4,4'-DDD	0.0987	0.110		ug/L		111	50 - 150
4,4'-DDE	0.0987	0.100		ug/L		101	50 - 150
4,4'-DDT	0.0987	0.114		ug/L		116	50 - 150
Acenaphthene	0.0987	0.0989	J	ug/L		100	50 - 150
Acenaphthylene	0.0987	0.0952	J	ug/L		96	50 - 150
Acetochlor	0.0494	0.0549	J	ug/L		111	50 - 150
Alachlor	0.0494	0.0634		ug/L		129	50 - 150
alpha-BHC	0.0987	0.0981	J	ug/L		99	50 - 150
alpha-Chlordane	0.0247	ND		ug/L		101	50 - 150
Anthracene	0.0197	0.0234		ug/L		119	50 - 150
Atrazine	0.0494	ND		ug/L		95	50 - 150
Benz(a)anthracene	0.0494	0.0488	J	ug/L		99	50 - 150
Benzo[a]pyrene	0.0197	0.0202		ug/L		102	50 - 150
Benzo[b]fluoranthene	0.0197	0.0219		ug/L		111	50 - 150
Benzo[g,h,i]perylene	0.0494	0.0447	J	ug/L		91	50 - 150
Benzo[k]fluoranthene	0.0197	0.0186	J	ug/L		94	50 - 150
beta-BHC	0.0987	0.118		ug/L		120	50 - 150
Bromacil	0.0987	0.134		ug/L		136	50 - 150
Butachlor	0.0494	0.0609		ug/L		123	50 - 150
Butylbenzylphthalate	0.148	0.184	J	ug/L		125	50 - 150
Caffeine	0.0494	0.0359	J	ug/L		73	50 - 150
Chlorobenzilate	0.0987	0.113		ug/L		115	50 - 150
Chloroneb	0.0987	0.105		ug/L		106	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0987	0.178	^3+	ug/L		180	50 - 150
Chlorpyrifos	0.0494	0.0604		ug/L		122	50 - 150
Chrysene	0.0197	0.0218		ug/L		110	50 - 150
delta-BHC	0.0987	0.123		ug/L		125	50 - 150
Di(2-ethylhexyl)adipate	0.296	0.426	J	ug/L		144	50 - 150
Bis(2-ethylhexyl) phthalate	0.592	0.774		ug/L		131	50 - 150
Diazinon (Qualitative)	0.0987	0.0964	J	ug/L		98	15 - 132

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MRL 380-30404/2-A
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Dibenz(a,h)anthracene	0.0494	0.0483	J	ug/L		98	50 - 150
Diclorvos (DDVP)	0.0494	0.0697		ug/L		141	50 - 150
Dieldrin	0.0987	0.103	J	ug/L		105	50 - 150
Diethylphthalate	0.148	0.174	J	ug/L		117	50 - 150
Dimethoate	0.0987	0.0582	J	ug/L		59	35 - 100
Dimethylphthalate	0.296	0.294	J	ug/L		99	50 - 150
Di-n-butyl phthalate	0.296	0.407	J	ug/L		137	49 - 243
Di-n-octyl phthalate	0.0987	0.102		ug/L		104	50 - 150
Endosulfan I (Alpha)	0.0987	0.127		ug/L		128	50 - 150
Endosulfan II (Beta)	0.0987	0.116		ug/L		117	50 - 150
Endosulfan sulfate	0.0987	0.114		ug/L		115	50 - 150
Endrin	0.0987	0.118		ug/L		120	50 - 150
Endrin aldehyde	0.0987	0.109		ug/L		111	50 - 150
EPTC	0.0987	0.117		ug/L		119	50 - 150
Fluoranthene	0.0494	0.0509	J	ug/L		103	50 - 150
Fluorene	0.0494	ND		ug/L		99	50 - 150
gamma-Chlordane	0.0247	0.0258	J	ug/L		104	50 - 150
Heptachlor	0.0395	0.0458		ug/L		116	50 - 150
Heptachlor epoxide (isomer B)	0.0494	0.0511		ug/L		104	50 - 150
Hexachlorobenzene	0.0494	0.0422	J	ug/L		86	50 - 150
Hexachlorocyclopentadiene	0.0494	0.0431	J	ug/L		87	50 - 150
Indeno[1,2,3-cd]pyrene	0.0494	0.0465	J	ug/L		94	50 - 150
Isophorone	0.0987	0.117	J	ug/L		119	50 - 150
Lindane	0.0395	0.0458		ug/L		116	50 - 150
Malathion	0.0987	0.111		ug/L		113	50 - 150
Methoxychlor	0.0987	0.107		ug/L		108	50 - 150
Metolachlor	0.0494	0.0569		ug/L		115	50 - 150
Metribuzin	0.0494	0.0572		ug/L		116	50 - 150
Molinate	0.0987	0.113		ug/L		114	50 - 150
Naphthalene	0.0987	0.111	J	ug/L		112	50 - 150
Parathion	0.0987	0.0892	J	ug/L		90	50 - 150
Pendimethalin (Penoxaline)	0.0987	0.0842	J	ug/L		85	50 - 150
Phenanthrene	0.0197	0.0232	J	ug/L		117	50 - 150
Propachlor	0.0494	0.0570		ug/L		115	50 - 150
Pyrene	0.0494	0.0513		ug/L		104	50 - 150
Simazine	0.0494	0.0552		ug/L		112	50 - 150
Terbacil	0.0987	0.142		ug/L		143	50 - 150
Terbutylazine	0.0987	0.106		ug/L		107	50 - 150
Thiobencarb	0.0987	0.119	J	ug/L		121	50 - 150
trans-Nonachlor	0.0247	ND		ug/L		99	50 - 150
Trifluralin	0.0987	0.0810	J	ug/L		82	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	104		70 - 130
Triphenylphosphate	102		70 - 130
Perylene-d12	93		70 - 130

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 380-34961-AR-1-A MS

Matrix: Water

Analysis Batch: 30427

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30404

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND	^3+	1.99	1.92		ug/L		96	70 - 130
2,4'-DDE	ND		1.99	1.92		ug/L		96	70 - 130
2,4'-DDT	ND		1.99	2.10		ug/L		105	70 - 130
2,4-Dinitrotoluene	ND		1.99	2.02		ug/L		101	70 - 130
2,6-Dinitrotoluene	ND		1.99	2.09		ug/L		105	70 - 130
4,4'-DDD	ND		1.99	2.14		ug/L		107	70 - 130
4,4'-DDE	ND		1.99	1.93		ug/L		97	70 - 130
4,4'-DDT	ND		1.99	2.14		ug/L		107	70 - 130
Acenaphthene	ND		1.99	1.99		ug/L		100	70 - 130
Acenaphthylene	ND		1.99	2.00		ug/L		100	70 - 130
Acetochlor	ND		1.99	2.28		ug/L		114	70 - 130
Alachlor	ND		1.99	2.11		ug/L		106	70 - 130
alpha-BHC	ND		1.99	2.11		ug/L		106	70 - 130
alpha-Chlordane	ND		1.99	1.85		ug/L		93	70 - 130
Anthracene	ND	F1	1.99	1.26	F1	ug/L		63	70 - 130
Atrazine	ND		1.99	1.84		ug/L		92	70 - 130
Benz(a)anthracene	ND		1.99	1.90		ug/L		95	70 - 130
Benzo[a]pyrene	ND		1.99	1.79		ug/L		90	70 - 130
Benzo[b]fluoranthene	ND		1.99	2.21		ug/L		111	70 - 130
Benzo[g,h,i]perylene	ND		1.99	2.19		ug/L		110	70 - 130
Benzo[k]fluoranthene	ND		1.99	2.28		ug/L		115	70 - 130
beta-BHC	ND		1.99	2.15		ug/L		108	70 - 130
Bromacil	ND		1.99	2.44		ug/L		122	70 - 130
Butachlor	ND		1.99	2.21		ug/L		111	70 - 130
Butylbenzylphthalate	ND		1.99	2.37		ug/L		119	70 - 130
Caffeine	ND		1.99	1.76		ug/L		86	46 - 144
Chlorobenzilate	ND		1.99	2.43		ug/L		122	70 - 130
Chloroneb	ND		1.99	1.95		ug/L		98	70 - 130
Chlorothalonil (Draconil, Bravo)	ND	^3+	1.99	1.90		ug/L		95	70 - 130
Chlorpyrifos	ND		1.99	2.15		ug/L		108	70 - 130
Chrysene	ND		1.99	2.06		ug/L		103	70 - 130
delta-BHC	ND		1.99	2.05		ug/L		103	70 - 130
Di(2-ethylhexyl)adipate	ND		1.99	2.45		ug/L		119	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.99	2.38		ug/L		119	70 - 130
Diazinon (Qualitative)	ND		1.99	2.07		ug/L		104	15 - 132
Dibenz(a,h)anthracene	ND		1.99	2.26		ug/L		113	70 - 130
Diclorvos (DDVP)	ND		1.99	2.55		ug/L		128	70 - 130
Dieldrin	ND		1.99	2.16		ug/L		109	70 - 130
Diethylphthalate	ND		1.99	2.26		ug/L		113	70 - 130
Dimethoate	ND	*1	1.99	1.63		ug/L		82	34 - 111
Dimethylphthalate	ND		1.99	2.12		ug/L		106	70 - 130
Di-n-butyl phthalate	ND		3.99	4.38		ug/L		108	70 - 130
Di-n-octyl phthalate	ND		1.99	2.38		ug/L		120	70 - 130
Endosulfan I (Alpha)	ND		1.99	2.01		ug/L		101	70 - 130
Endosulfan II (Beta)	ND		1.99	2.12		ug/L		106	70 - 130
Endosulfan sulfate	ND		1.99	2.17		ug/L		109	70 - 130
Endrin	ND		1.99	2.19		ug/L		110	70 - 130
Endrin aldehyde	ND		1.99	1.58		ug/L		79	70 - 130

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 380-34961-AR-1-A MS
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
EPTC	ND		1.99	2.27		ug/L		114	70 - 130
Fluoranthene	ND		1.99	2.07		ug/L		104	70 - 130
Fluorene	ND		1.99	2.07		ug/L		104	70 - 130
gamma-Chlordane	ND		1.99	1.78		ug/L		89	70 - 130
Heptachlor	ND		1.99	2.07		ug/L		104	70 - 130
Heptachlor epoxide (isomer B)	ND		1.99	1.93		ug/L		97	70 - 130
Hexachlorobenzene	ND		1.99	1.88		ug/L		94	70 - 130
Hexachlorocyclopentadiene	ND		1.99	2.07		ug/L		104	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.99	2.37		ug/L		119	70 - 130
Isophorone	ND		1.99	2.41		ug/L		121	70 - 130
Lindane	ND		1.99	2.09		ug/L		105	70 - 130
Malathion	ND		1.99	2.37		ug/L		119	70 - 130
Methoxychlor	ND		1.99	2.54		ug/L		127	70 - 130
Metolachlor	ND		1.99	2.34		ug/L		117	70 - 130
Metribuzin	ND		1.99	2.16		ug/L		108	70 - 130
Molinate	ND		1.99	2.39		ug/L		120	70 - 130
Naphthalene	ND		1.99	2.07		ug/L		104	70 - 130
Parathion	ND	F1	1.99	2.65	F1	ug/L		133	70 - 130
Pendimethalin (Penoxaline)	ND		1.99	2.11		ug/L		106	70 - 130
Phenanthrene	ND		1.99	1.99		ug/L		100	70 - 130
Propachlor	ND		1.99	2.39		ug/L		120	70 - 130
Pyrene	ND		1.99	2.05		ug/L		103	70 - 130
Simazine	ND		1.99	1.90		ug/L		95	70 - 130
Terbacil	ND		1.99	2.15		ug/L		108	70 - 130
Terbutylazine	ND		1.99	2.05		ug/L		103	70 - 130
Thiobencarb	ND		1.99	2.39		ug/L		120	70 - 130
trans-Nonachlor	ND		1.99	1.84		ug/L		92	70 - 130
Trifluralin	ND		1.99	1.99		ug/L		100	70 - 130
				<i>MS MS</i>					
Surrogate				%Recovery	Qualifier				Limits
2-Nitro-m-xylene				103					70 - 130
Triphenylphosphate				103					70 - 130
Perylene-d12				97					70 - 130

Lab Sample ID: 380-35010-B-1-A DU
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2,4'-DDD	ND	^3+	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

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 380-35010-B-1-A DU
Matrix: Water
Analysis Batch: 30427

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 30404

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Acenaphthylene	ND		ND		ug/L		NC	20
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
Bromacil	ND		ND		ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Caffeine	ND		ND		ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND	^3+	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
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	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
Dimethoate	ND	*1	ND	*1	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-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

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 380-35010-B-1-A DU

Matrix: Water

Analysis Batch: 30427

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 30404

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lindane	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
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
Total Permethrin (mixed isomers)	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
trans-Nonachlor	ND		ND		ug/L		NC	20
Trifluralin	ND		ND		ug/L		NC	20

Surrogate	%Recovery	DU Qualifier	Limits
2-Nitro-m-xylene	107		70 - 130
Triphenylphosphate	102		70 - 130
Perylene-d12	89		70 - 130

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

Lab Sample ID: MBL 380-30432/4-A

Matrix: Water

Analysis Batch: 30502

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30432

Analyte	MBL Result	MBL Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		0.040	ug/L		01/23/23 14:25	01/23/23 18:36	1
1,2-D bromo-3-Chloropropane	ND		0.010	ug/L		01/23/23 14:25	01/23/23 18:36	1
1,2-D bromoethane	ND		0.010	ug/L		01/23/23 14:25	01/23/23 18:36	1

Surrogate	%Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dibromopropane (Surr)	105		60 - 140	01/23/23 14:25	01/23/23 18:36	1

Lab Sample ID: LCS 380-30432/3-A

Matrix: Water

Analysis Batch: 30502

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30432

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	0.200	0.209		ug/L		104	70 - 130
1,2-D bromo-3-Chloropropane	0.200	0.207		ug/L		103	70 - 130
1,2-D bromoethane	0.200	0.217		ug/L		108	70 - 130

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30432/3-A
Matrix: Water
Analysis Batch: 30502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30432

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dibromopropane (Surr)	110		60 - 140

Lab Sample ID: MRL 380-30432/1-A
Matrix: Water
Analysis Batch: 30502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30432

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	
1,2,3-Trichloropropane	0.0400	0.0406		ug/L		101	60 - 140	

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

Lab Sample ID: MRL 380-30432/2-A
Matrix: Water
Analysis Batch: 30502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30432

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	
1,2,3-Trichloropropane	0.0500	0.0497		ug/L		99	60 - 140	
1,2-D bromo-3-Chloropropane	0.0100	0.0103		ug/L		103	60 - 140	
1,2-D bromoethane	0.0100	0.00924	J	ug/L		92	60 - 140	

	MRL	MRL	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dibromopropane (Surr)	112		60 - 140

Lab Sample ID: 380-34654-B-1-A MS
Matrix: Water
Analysis Batch: 30502

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30432

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
1,2,3-Trichloropropane	ND		1.26	1.41		ug/L		112	65 - 135	
1,2-D bromo-3-Chloropropane	ND		0.253	0.282		ug/L		112	65 - 135	
1,2-D bromoethane	ND		0.253	0.280		ug/L		111	65 - 135	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dibromopropane (Surr)	109		60 - 140

Lab Sample ID: 380-34654-J-2-A DU
Matrix: Water
Analysis Batch: 30502

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 30432

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		NC	20
1,2-D bromoethane	ND		ND		ug/L		NC	20

	DU	DU	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dibromopropane (Surr)	111		60 - 140

QC Sample Results

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

Job ID: 380-34925-1

Method: 505 - Organochlorine Pesticides/PCBs (GC)

Lab Sample ID: MB 380-30329/7-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30329

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Alachlor	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
Aldrin	ND		0.0020	ug/L		01/20/23 14:15	01/20/23 19:10	1
Chlordane (n.o.s.)	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
Dieldrin	ND		0.0020	ug/L		01/20/23 14:15	01/20/23 19:10	1
Endrin	ND		0.010	ug/L		01/20/23 14:15	01/20/23 19:10	1
gamma-BHC (Lindane)	ND		0.010	ug/L		01/20/23 14:15	01/20/23 19:10	1
Heptachlor	ND		0.010	ug/L		01/20/23 14:15	01/20/23 19:10	1
Heptachlor epoxide	ND		0.010	ug/L		01/20/23 14:15	01/20/23 19:10	1
Methoxychlor	ND		0.051	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1016	ND		0.071	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1221	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1232	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1242	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1248	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1254	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
PCB-1260	ND		0.071	ug/L		01/20/23 14:15	01/20/23 19:10	1
Polychlorinated biphenyls, Total	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1
Toxaphene	ND		0.10	ug/L		01/20/23 14:15	01/20/23 19:10	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	101		70 - 130	01/20/23 14:15	01/20/23 19:10	1

Lab Sample ID: MRL 380-30329/2-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30329

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Aldrin	0.00200	ND		ug/L		94	50 - 150
Dieldrin	0.00200	0.00221		ug/L		110	50 - 150

Surrogate	MRL	MRL	Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	94		70 - 130

Lab Sample ID: MRL 380-30329/3-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30329

Analyte	Spike Added	MRL	MRL	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Alachlor	0.100	0.112		ug/L		112	50 - 150
Aldrin	0.0100	0.00927		ug/L		93	50 - 150
Dieldrin	0.0100	0.0106		ug/L		106	50 - 150
Endrin	0.0100	0.0109		ug/L		109	50 - 150
gamma-BHC (Lindane)	0.0100	0.00940	J	ug/L		94	50 - 150
Heptachlor	0.0100	0.0108		ug/L		108	50 - 150
Heptachlor epoxide	0.0100	0.0116		ug/L		116	50 - 150
Methoxychlor	0.0500	0.0505		ug/L		101	50 - 150

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: MRL 380-30329/3-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30329

Surrogate	%Recovery	MRL Qualifier	MRL Limits
Tetrachloro-m-xylene	100		70 - 130

Lab Sample ID: MRL 380-30329/4-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30329

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Toxaphene	0.500	0.464		ug/L		93	50 - 150

Surrogate	%Recovery	MRL Qualifier	MRL Limits
Tetrachloro-m-xylene	99		70 - 130

Lab Sample ID: MRL 380-30329/5-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30329

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Toxaphene	0.100	0.112		ug/L		112	50 - 150

Surrogate	%Recovery	MRL Qualifier	MRL Limits
Tetrachloro-m-xylene	94		70 - 130

Lab Sample ID: MRL 380-30329/6-A
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30329

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlordane (n.o.s.)	0.0997	0.0936	J	ug/L		94	50 - 150

Surrogate	%Recovery	MRL Qualifier	MRL Limits
Tetrachloro-m-xylene	93		70 - 130

Lab Sample ID: 380-34454-P-1-A MS
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30329

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Alachlor	ND		1.02	1.11		ug/L		109	65 - 135
Aldrin	ND		0.102	0.108		ug/L		106	65 - 135
Dieldrin	ND		0.102	0.107		ug/L		105	65 - 135
Endrin	ND		0.102	0.107		ug/L		105	65 - 135
gamma-BHC (Lindane)	ND		0.102	0.0871		ug/L		86	65 - 135
Heptachlor	ND		0.102	0.110		ug/L		108	65 - 135
Heptachlor epoxide	ND		0.102	0.109		ug/L		107	65 - 135
Methoxychlor	ND		0.509	0.530		ug/L		104	65 - 135

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 380-34454-P-1-A MS
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30329

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Tetrachloro-m-xylene	99		70 - 130

Lab Sample ID: 380-34454-Q-1-A MS
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30329

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Chlordane (n.o.s.)	ND		0.506	0.474		ug/L		94	65 - 135

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

Lab Sample ID: 380-34654-E-1-A MS
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30329

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Alachlor	ND		0.200	0.204		ug/L		102	65 - 135
Aldrin	ND		0.0200	0.0260		ug/L		130	65 - 135
Dieldrin	0.058		0.0200	0.0715		ug/L		68	65 - 135
Endrin	ND		0.0200	0.0192		ug/L		96	65 - 135
gamma-BHC (Lindane)	ND		0.0200	0.0151		ug/L		76	65 - 135
Heptachlor	ND		0.0200	0.0205		ug/L		103	65 - 135
Heptachlor epoxide	0.018		0.0200	0.0370		ug/L		95	65 - 135
Methoxychlor	ND		0.100	0.0849		ug/L		85	65 - 135

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Tetrachloro-m-xylene	99		70 - 130

Lab Sample ID: 380-34654-F-1-A MS
Matrix: Water
Analysis Batch: 30452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30329

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Toxaphene	ND		2.51	2.14		ug/L		86	65 - 135

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

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 380-30546/1
Matrix: Water
Analysis Batch: 30546

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Sulfide	ND		0.050	mg/L			01/24/23 12:17	1

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QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: LCS 380-30546/4
Matrix: Water
Analysis Batch: 30546

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 380-30546/16
Matrix: Water
Analysis Batch: 30546

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	0.241		mg/L		96	90 - 110	0	20

Lab Sample ID: MRL 380-30546/15
Matrix: Water
Analysis Batch: 30546

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	0.0460	J	mg/L		92	50 - 150

Lab Sample ID: MRL 380-30546/2
Matrix: Water
Analysis Batch: 30546

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	0.0460	J	mg/L		92	50 - 150

Lab Sample ID: 380-34727-J-1 MS
Matrix: Water
Analysis Batch: 30546

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	0.235		mg/L		94	80 - 120

Lab Sample ID: 380-34727-J-1 MSD
Matrix: Water
Analysis Batch: 30546

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	0.252		mg/L		101	80 - 120	7	20

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

Lab Sample ID: 103757-B1
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,4,5-Trichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,4,6-Trichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,4-Dichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 103757-B1
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,6-Dichlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,6-Di-tert-butyl-4-methylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2,6-Di-tert-butylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Chloronaphthalene	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Chlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Methyl-4,6-dinitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Methylphenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Nitroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
2-Nitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
3+4-Methylphenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
3-Nitroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
4-Bromophenylphenyl ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
4-Chloro-3-methylphenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
4-Chloroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
4-Chlorophenylphenyl ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
4-Nitroaniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
4-Nitrophenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
6-tert-butyl-2,4-dimethylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Acenaphthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Aniline	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Anthracene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzidine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzoic Acid	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
Benzyl Alcohol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
Biphenyl	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Bis(2-Chloroethoxy) methane	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Bis(2-Chloroethyl) ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Bis(2-Chloroisopropyl) ether	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Chrysene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Dibenzofuran	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Fluoranthene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Fluorene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Hexachloroethane	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Naphthalene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 103757-B1
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
N-Nitrosodi-n-propylamine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
N-Nitrosodiphenylamine	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Pentachlorophenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Perylene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Phenanthrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1
Phenol	ND		0.2	0.1	µg/L		01/20/23 00:00	02/13/23 18:32	1
p-tert-Butylphenol	ND		0.1	0.05	µg/L		01/20/23 00:00	02/13/23 18:32	1
Pyrene	ND		0.005	0.001	µg/L		01/20/23 00:00	02/13/23 18:32	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(2,4,6-Tribromophenol)	93		30 - 130	01/20/23 00:00	02/13/23 18:32	1
(d10-Acenaphthene)	98		27 - 133	01/20/23 00:00	02/13/23 18:32	1
(d10-Phenanthrene)	97		43 - 129	01/20/23 00:00	02/13/23 18:32	1
(d12-Chrysene)	104		52 - 144	01/20/23 00:00	02/13/23 18:32	1
(d12-Perylene)	96		36 - 161	01/20/23 00:00	02/13/23 18:32	1
(d5-Phenol)	76		0 - 130	01/20/23 00:00	02/13/23 18:32	1
(d8-Naphthalene)	86		25 - 125	01/20/23 00:00	02/13/23 18:32	1

Lab Sample ID: 103757-BS1
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.454		µg/L		91	31 - 128
1-Methylphenanthrene	0.5	0.454		µg/L		91	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.482		µg/L		96	55 - 122
2,4,5-Trichlorophenol	1	0.923		µg/L		92	30 - 130
2,4,6-Trichlorophenol	1	0.791		µg/L		79	30 - 130
2,4-Dichlorophenol	1	0.74		µg/L		74	51 - 117
2,4-Dinitrophenol	1	1.13		µg/L		113	0 - 152
2,6-Dichlorophenol	0.5	0.355		µg/L		71	30 - 130
2,6-Dimethylnaphthalene	0.5	0.459		µg/L		92	48 - 120
2,6-Di-tert-butyl-4-methylphenol	1	0.724		µg/L		72	50 - 150
2,6-Di-tert-butylphenol	1	0.821		µg/L		82	50 - 150
2-Chloronaphthalene	1	0.849		µg/L		85	53 - 130
2-Chlorophenol	1	0.661		µg/L		66	41 - 120
2-Methyl-4,6-dinitrophenol	1	1.08		µg/L		108	0 - 141
2-Methylnaphthalene	1.5	1.4		µg/L		93	47 - 130
2-Methylphenol	1	0.761		µg/L		76	40 - 117
2-Nitroaniline	1	0.771		µg/L		77	69 - 114
2-Nitrophenol	1	0.632		µg/L		63	40 - 117
3+4-Methylphenol	1	0.784		µg/L		78	0 - 130
3-Nitroaniline	1	0.794		µg/L		79	23 - 137
4-Bromophenylphenyl ether	1	0.824		µg/L		82	61 - 132
4-Chloro-3-methylphenol	1	0.839		µg/L		84	51 - 128
4-Chloroaniline	1	0.639		µg/L		64	50 - 150
4-Chlorophenylphenyl ether	1	0.862		µg/L		86	63 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 103757-BS1
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4-Nitroaniline	1	0.851		µg/L		85	10 - 159
4-Nitrophenol	1	0.824		µg/L		82	10 - 164
6-tert-butyl-2,4-dimethylphenol	1	0.721		µg/L		72	50 - 150
Acenaphthene	1.5	1.49		µg/L		99	53 - 131
Acenaphthylene	1.5	1.47		µg/L		98	43 - 140
Aniline	1	0.571		µg/L		57	50 - 150
Anthracene	1.5	1.49		µg/L		99	58 - 135
Benz[a]anthracene	1.5	1.6		µg/L		107	55 - 145
Benzidine	1	0.0145		µg/L		1	0 - 125
Benzo[a]pyrene	1.5	1.57		µg/L		105	51 - 143
Benzo[b]fluoranthene	1.5	1.65		µg/L		110	46 - 165
Benzo[e]pyrene	0.5	0.49		µg/L		98	42 - 152
Benzo[g,h,i]perylene	1.5	1.54		µg/L		103	63 - 133
Benzo[k]fluoranthene	1.5	1.59		µg/L		106	56 - 145
Benzoic Acid	1	0.63		µg/L		63	2 - 145
Benzyl Alcohol	1	0.783		µg/L		78	43 - 148
Biphenyl	0.5	0.478		µg/L		96	56 - 119
Bis(2-Chloroethoxy) methane	1	0.835		µg/L		83	66 - 122
Bis(2-Chloroethyl) ether	1	0.78		µg/L		78	43 - 127
Bis(2-Chloroisopropyl) ether	1	0.765		µg/L		76	49 - 128
Chrysene	1.5	1.65		µg/L		110	56 - 141
Dibenz[a,h]anthracene	1.5	1.76		µg/L		117	55 - 150
Dibenzo[a,l]pyrene	0.5	0.456		µg/L		91	50 - 150
Dibenzofuran	1	0.824		µg/L		82	50 - 150
Dibenzothiophene	0.5	0.475		µg/L		95	46 - 126
Disalicylidenepropanediamine	50	51.7		µg/L		103	50 - 150
Fluoranthene	1.5	1.53		µg/L		102	60 - 146
Fluorene	1.5	1.55		µg/L		103	58 - 131
Hexachloroethane	1	0.621		µg/L		62	27 - 130
Indeno[1,2,3-cd]pyrene	1.5	1.77		µg/L		118	50 - 151
Naphthalene	1.5	1.3		µg/L		87	41 - 126
Nitrobenzene	1	0.708		µg/L		71	54 - 111
N-Nitrosodi-n-propylamine	1	0.771		µg/L		77	61 - 152
N-Nitrosodiphenylamine	1	0.864		µg/L		86	49 - 142
Pentachlorophenol	1	1.1		µg/L		110	36 - 111
Perylene	0.5	0.463		µg/L		93	48 - 141
Phenanthrene	1.5	1.5		µg/L		100	67 - 127
Phenol	1	0.693		µg/L		69	29 - 114
p-tert-Butylphenol	1	0.865		µg/L		87	50 - 150
Pyrene	1.5	1.53		µg/L		102	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(2,4,6-Tribromophenol)	108		30 - 130
(d10-Acenaphthene)	93		27 - 133
(d10-Phenanthrene)	93		43 - 129
(d12-Chrysene)	102		52 - 144
(d12-Perylene)	95		36 - 161
(d5-Phenol)	82		0 - 130

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 103757-BS1
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40114_P

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
(d8-Naphthalene)	80		25 - 125

Lab Sample ID: 103757-BS2
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits	RPD	Limit	
1-Methylnaphthalene	0.5	0.49		µg/L		98	31 - 128	7	30	
1-Methylphenanthrene	0.5	0.484		µg/L		97	66 - 127	6	30	
2,3,5-Trimethylnaphthalene	0.5	0.499		µg/L		100	55 - 122	4	30	
2,4,5-Trichlorophenol	1	0.827		µg/L		83	30 - 130	10	30	
2,4,6-Trichlorophenol	1	0.809		µg/L		81	30 - 130	2	30	
2,4-Dichlorophenol	1	0.832		µg/L		83	51 - 117	11	30	
2,4-Dinitrophenol	1	0.955		µg/L		95	0 - 152	16	30	
2,6-Dichlorophenol	0.5	0.404		µg/L		81	30 - 130	13	30	
2,6-Dimethylnaphthalene	0.5	0.475		µg/L		95	48 - 120	3	30	
2,6-Di-tert-butyl-4-methylphenol	1	0.774		µg/L		77	50 - 150	7	30	
2,6-Di-tert-butylphenol	1	0.854		µg/L		85	50 - 150	4	30	
2-Chloronaphthalene	1	0.889		µg/L		89	53 - 130	5	30	
2-Chlorophenol	1	0.788		µg/L		79	41 - 120	18	30	
2-Methyl-4,6-dinitrophenol	1	0.869		µg/L		87	0 - 141	22	30	
2-Methylnaphthalene	1.5	1.52		µg/L		101	47 - 130	8	30	
2-Methylphenol	1	0.853		µg/L		85	40 - 117	11	30	
2-Nitroaniline	1	0.859		µg/L		86	69 - 114	11	30	
2-Nitrophenol	1	0.759		µg/L		76	40 - 117	19	30	
3+4-Methylphenol	1	0.841		µg/L		84	0 - 130	7	30	
3-Nitroaniline	1	0.852		µg/L		85	23 - 137	7	30	
4-Bromophenylphenyl ether	1	0.871		µg/L		87	61 - 132	6	30	
4-Chloro-3-methylphenol	1	0.903		µg/L		90	51 - 128	7	30	
4-Chloroaniline	1	0.666		µg/L		67	50 - 150	5	30	
4-Chlorophenylphenyl ether	1	0.883		µg/L		88	63 - 130	2	30	
4-Nitroaniline	1	0.919		µg/L		92	10 - 159	8	30	
4-Nitrophenol	1	0.871		µg/L		87	10 - 164	6	30	
6-tert-butyl-2,4-dimethylphenol	1	0.778		µg/L		78	50 - 150	8	30	
Acenaphthene	1.5	1.57		µg/L		105	53 - 131	6	30	
Acenaphthylene	1.5	1.52		µg/L		101	43 - 140	3	30	
Aniline	1	0.635		µg/L		63	50 - 150	12	30	
Anthracene	1.5	1.51		µg/L		101	58 - 135	2	30	
Benz[a]anthracene	1.5	1.62		µg/L		108	55 - 145	1	30	
Benzidine	1	0.00615		µg/L		1	0 - 125	0	30	
Benzo[a]pyrene	1.5	1.57		µg/L		105	51 - 143	0	30	
Benzo[b]fluoranthene	1.5	1.7		µg/L		113	46 - 165	3	30	
Benzo[e]pyrene	0.5	0.455		µg/L		91	42 - 152	7	30	
Benzo[g,h,i]perylene	1.5	1.55		µg/L		103	63 - 133	0	30	
Benzo[k]fluoranthene	1.5	1.6		µg/L		107	56 - 145	1	30	
Benzoic Acid	1	0.619		µg/L		62	2 - 145	2	30	
Benzyl Alcohol	1	0.862		µg/L		86	43 - 148	10	30	
Biphenyl	0.5	0.497		µg/L		99	56 - 119	3	30	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 103757-BS2
Matrix: BlankMatrix
Analysis Batch: O-40114

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40114_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Bis(2-Chloroethoxy) methane	1	0.951		µg/L		95	66 - 122	12	30	
Bis(2-Chloroethyl) ether	1	0.943		µg/L		94	43 - 127	19	30	
Bis(2-Chloroisopropyl) ether	1	0.899		µg/L		90	49 - 128	17	30	
Chrysene	1.5	1.65		µg/L		110	56 - 141	0	30	
Dibenz[a,h]anthracene	1.5	1.76		µg/L		117	55 - 150	0	30	
Dibenzo[a,l]pyrene	0.5	0.462		µg/L		92	50 - 150	1	30	
Dibenzofuran	1	0.881		µg/L		88	50 - 150	7	30	
Dibenzothiophene	0.5	0.5		µg/L		100	46 - 126	5	30	
Disalicylidenepropanediamine	50	59.8		µg/L		120	50 - 150	15	30	
Fluoranthene	1.5	1.58		µg/L		105	60 - 146	3	30	
Fluorene	1.5	1.58		µg/L		105	58 - 131	2	30	
Hexachloroethane	1	0.704		µg/L		70	27 - 130	12	30	
Indeno[1,2,3-cd]pyrene	1.5	1.85		µg/L		123	50 - 151	4	30	
Naphthalene	1.5	1.49		µg/L		99	41 - 126	13	30	
Nitrobenzene	1	0.819		µg/L		82	54 - 111	14	30	
N-Nitrosodi-n-propylamine	1	0.84		µg/L		84	61 - 152	9	30	
N-Nitrosodiphenylamine	1	0.887		µg/L		89	49 - 142	3	30	
Pentachlorophenol	1	0.949		µg/L		95	36 - 111	15	30	
Perylene	0.5	0.487		µg/L		97	48 - 141	4	30	
Phenanthrene	1.5	1.54		µg/L		103	67 - 127	3	30	
Phenol	1	0.808		µg/L		81	29 - 114	16	30	
p-tert-Butylphenol	1	0.937		µg/L		94	50 - 150	9	30	
Pyrene	1.5	1.58		µg/L		105	54 - 156	3	30	

Surrogate	LCS DUP	LCS DUP	Limits
	%Recovery	Qualifier	
(2,4,6-Tribromophenol)	107		30 - 130
(d10-Acenaphthene)	96		27 - 133
(d10-Phenanthrene)	96		43 - 129
(d12-Chrysene)	105		52 - 144
(d12-Perylene)	92		36 - 161
(d5-Phenol)	95		0 - 130
(d8-Naphthalene)	93		25 - 125

Method: 8015 Ethanol - SW846 8015B Gasoline Range Organics

Lab Sample ID: 23MEA003WB
Matrix: WATER
Analysis Batch: 23MEA003W

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			01/20/23 12:21	1

Lab Sample ID: 23MEA003WL
Matrix: WATER
Analysis Batch: 23MEA003W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
ETHANOL	10000	9730		ug/L		97	60 - 130	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

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

Lab Sample ID: 23VG39A11B
Matrix: WATER
Analysis Batch: 23VG39A11

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			01/24/23 12:54	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE								01/24/23 12:54	1

Lab Sample ID: 23VG39A11L
Matrix: WATER
Analysis Batch: 23VG39A11

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	0.5	0.436		mg/L		87	60 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
BROMOFLUOROBENZENE	103		70 - 130				

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

Lab Sample ID: 23DSA029WB
Matrix: WATER
Analysis Batch: 23DSA029W

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			01/24/23 18:24	1
JP5	ND	U	0.05		mg/L			01/24/23 18:24	1
JP8	ND	U	0.05		mg/L			01/24/23 18:24	1
MOTOR OIL	ND	U	0.05		mg/L			01/24/23 18:24	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE								01/24/23 18:24	1
HEXACOSANE								01/24/23 18:24	1

Lab Sample ID: 23DSA029WL
Matrix: WATER
Analysis Batch: 23DSA029W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
DIESEL	2.5	2.43		mg/L		97	50 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
BROMOBENZENE	102		60 - 130				
HEXACOSANE	115		60 - 130				

Lab Sample ID: 23J5A029WL
Matrix: WATER
Analysis Batch: 23DSA029W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP5	2.5	2.51		mg/L		100	30 - 160

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-34925-1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	103		60 - 130
HEXACOSANE	115		60 - 130

Lab Sample ID: 23J8A029WL
Matrix: WATER
Analysis Batch: 23DSA029W

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

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCS</i> <i>Result</i>	<i>LCS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i> <i>Limits</i>
JP8	2.5	2.1		mg/L		84	30 - 160

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	105		60 - 130
HEXACOSANE	120		60 - 130

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QC Association Summary

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

Job ID: 380-34925-1

GC/MS VOA

Analysis Batch: 30366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	524.2	
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	524.2	
MB 380-30366/5	Method Blank	Total/NA	Water	524.2	
LCS 380-30366/2	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-30366/3	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-30366/4	Lab Control Sample	Total/NA	Water	524.2	

Analysis Batch: 30675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	524.2	
MB 380-30675/15	Method Blank	Total/NA	Water	524.2	
LCS 380-30675/11	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-30675/12	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-30675/10	Lab Control Sample	Total/NA	Water	524.2	
MRL 380-30675/14	Lab Control Sample	Total/NA	Water	524.2	

Analysis Batch: 30695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	524.2	
MB 380-30695/5	Method Blank	Total/NA	Water	524.2	
LCS 380-30695/3	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-30695/4	Lab Control Sample Dup	Total/NA	Water	524.2	

Analysis Batch: 30812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	524.2	
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	524.2	

Analysis Batch: 30956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	524.2	
MB 380-30956/8	Method Blank	Total/NA	Water	524.2	
LCS 380-30956/4	Lab Control Sample	Total/NA	Water	524.2	
LCSD 380-30956/5	Lab Control Sample Dup	Total/NA	Water	524.2	
MRL 380-30956/3	Lab Control Sample	Total/NA	Water	524.2	
MRL 380-30956/7	Lab Control Sample	Total/NA	Water	524.2	

GC/MS Semi VOA

Prep Batch: 30404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	
MB 380-30404/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-30404/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-30404/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-30404/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-34961-AR-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-35010-B-1-A DU	Duplicate	Total/NA	Water	525.2	

QC Association Summary

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

Job ID: 380-34925-1

GC/MS Semi VOA

Analysis Batch: 30427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	525.2	30404
MB 380-30404/1-A	Method Blank	Total/NA	Water	525.2	30404
LCS 380-30404/3-A	Lab Control Sample	Total/NA	Water	525.2	30404
LCSD 380-30404/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	30404
MRL 380-30404/2-A	Lab Control Sample	Total/NA	Water	525.2	30404
380-34961-AR-1-A MS	Matrix Spike	Total/NA	Water	525.2	30404
380-35010-B-1-A DU	Duplicate	Total/NA	Water	525.2	30404

GC Semi VOA

Prep Batch: 30329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	505	
MB 380-30329/7-A	Method Blank	Total/NA	Water	505	
MRL 380-30329/2-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-30329/3-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-30329/4-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-30329/5-A	Lab Control Sample	Total/NA	Water	505	
MRL 380-30329/6-A	Lab Control Sample	Total/NA	Water	505	
380-34454-P-1-A MS	Matrix Spike	Total/NA	Water	505	
380-34454-Q-1-A MS	Matrix Spike	Total/NA	Water	505	
380-34654-E-1-A MS	Matrix Spike	Total/NA	Water	505	
380-34654-F-1-A MS	Matrix Spike	Total/NA	Water	505	

Prep Batch: 30432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	504.1	
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	504.1	
MBL 380-30432/4-A	Method Blank	Total/NA	Water	504.1	
LCS 380-30432/3-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-30432/1-A	Lab Control Sample	Total/NA	Water	504.1	
MRL 380-30432/2-A	Lab Control Sample	Total/NA	Water	504.1	
380-34654-B-1-A MS	Matrix Spike	Total/NA	Water	504.1	
380-34654-J-2-A DU	Duplicate	Total/NA	Water	504.1	

Analysis Batch: 30452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	505	30329
MB 380-30329/7-A	Method Blank	Total/NA	Water	505	30329
MRL 380-30329/2-A	Lab Control Sample	Total/NA	Water	505	30329
MRL 380-30329/3-A	Lab Control Sample	Total/NA	Water	505	30329
MRL 380-30329/4-A	Lab Control Sample	Total/NA	Water	505	30329
MRL 380-30329/5-A	Lab Control Sample	Total/NA	Water	505	30329
MRL 380-30329/6-A	Lab Control Sample	Total/NA	Water	505	30329
380-34454-P-1-A MS	Matrix Spike	Total/NA	Water	505	30329
380-34454-Q-1-A MS	Matrix Spike	Total/NA	Water	505	30329
380-34654-E-1-A MS	Matrix Spike	Total/NA	Water	505	30329
380-34654-F-1-A MS	Matrix Spike	Total/NA	Water	505	30329

QC Association Summary

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

Job ID: 380-34925-1

GC Semi VOA

Analysis Batch: 30502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	504.1	30432
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	504.1	30432
MBL 380-30432/4-A	Method Blank	Total/NA	Water	504.1	30432
LCS 380-30432/3-A	Lab Control Sample	Total/NA	Water	504.1	30432
MRL 380-30432/1-A	Lab Control Sample	Total/NA	Water	504.1	30432
MRL 380-30432/2-A	Lab Control Sample	Total/NA	Water	504.1	30432
380-34654-B-1-A MS	Matrix Spike	Total/NA	Water	504.1	30432
380-34654-J-2-A DU	Duplicate	Total/NA	Water	504.1	30432

General Chemistry

Analysis Batch: 30546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	SM 4500 S2 D	
MB 380-30546/1	Method Blank	Total/NA	Water	SM 4500 S2 D	
LCS 380-30546/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
LCSD 380-30546/16	Lab Control Sample Dup	Total/NA	Water	SM 4500 S2 D	
MRL 380-30546/15	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MRL 380-30546/2	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
380-34727-J-1 MS	Matrix Spike	Total/NA	Water	SM 4500 S2 D	
380-34727-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 S2 D	

Subcontract

Analysis Batch: O-40114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 Acid/Base/PAH + TICs	O-40114_P
103757-B1	Method Blank	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-40114_P
103757-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-40114_P
103757-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 Acid/Base/PAH + TICs	O-40114_P

Analysis Batch: 23DSA029W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSA029WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSA029WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5A029WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

QC Association Summary

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

Job ID: 380-34925-1

Subcontract (Continued)

Analysis Batch: 23DSA029W (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
23J8A029WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23MEA003W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Ethanol	
23MEA003WB	Method Blank	Total/NA	WATER	8015 Ethanol	
23MEA003WL	Lab Control Sample	Total/NA	WATER	8015 Ethanol	

Analysis Batch: 23VG39A11

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39A11B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39A11L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40114_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-34925-1	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
103757-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
103757-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
103757-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-34925-1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-1

Date Collected: 01/18/23 08:30

Matrix: Drinking Water

Date Received: 01/19/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	30695	AAE8	EA POM	01/26/23 10:58
Total/NA	Analysis	524.2		1	30812	N1R	EA POM	01/27/23 09:38
Total/NA	Analysis	524.2		1	30956	AAE8	EA POM	01/30/23 16:49
Total/NA	Analysis	524.2		1	30366	P3EE	EA POM	01/20/23 18:58
Total/NA	Prep	525.2			30404	N8NE	EA POM	01/21/23 11:03
Total/NA	Analysis	525.2		1	30427	Q8LA	EA POM	01/23/23 13:15
Total/NA	Prep	504.1			30432	K9GY	EA POM	01/23/23 14:25 - 01/23/23 15:15 ¹
Total/NA	Analysis	504.1		1	30502	K9GY	EA POM	01/24/23 04:00
Total/NA	Prep	505			30329	DR5R	EA POM	01/20/23 14:15 - 01/20/23 15:50 ¹
Total/NA	Analysis	505		1	30452	ULRL	EA POM	01/20/23 21:26
Total/NA	Analysis	SM 4500 S2 D		1	30546	MH2L	EA POM	01/24/23 12:17
Total/NA	Prep	EPA_625		1	O-40114_P			01/20/23 00:00
Total/NA	Analysis	625 Acid/Base/PAH + TICs		1	O-40114	YC		02/14/23 05:00
Total/NA	Analysis	8015 Ethanol		1	23MEA003W	ASitu		01/20/23 19:16
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39A11	SCerva		01/24/23 14:43
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSA029W	SDees		01/24/23 23:54

Client Sample ID: TB: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-34925-2

Date Collected: 01/18/23 08:30

Matrix: Water

Date Received: 01/19/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	30675	AAE8	EA POM	01/25/23 22:52
Total/NA	Analysis	524.2		1	30812	N1R	EA POM	01/27/23 11:48
Total/NA	Analysis	524.2		1	30366	P3EE	EA POM	01/20/23 19:21
Total/NA	Prep	504.1			30432	K9GY	EA POM	01/23/23 14:25 - 01/23/23 15:15 ¹
Total/NA	Analysis	504.1		1	30502	K9GY	EA POM	01/24/23 04:34
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39A11	SCerva		01/24/23 15:20

¹ 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 POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

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

Job ID: 380-34925-1

Laboratory: Eurofins Eaton Analytical Pomona

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-31-23

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
505	505	Drinking Water	Polychlorinated biphenyls, Total
524.2		Drinking Water	1,3-Dichloropropene, Total
524.2		Drinking Water	2-Butanone (MEK)
524.2		Drinking Water	4-Methyl-2-pentanone (MIBK)
524.2		Drinking Water	Acetone
524.2		Drinking Water	Bromoethane
524.2		Drinking Water	m,p-Xylenes
524.2		Drinking Water	o-Xylene
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	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Caffeine
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Diazinon (Qualitative)
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene

Accreditation/Certification Summary

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

Job ID: 380-34925-1

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethoate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbutylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin
SM 4500 S2 D		Drinking Water	Sulfide

Method Summary

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

Job ID: 380-34925-1

Method	Method Description	Protocol	Laboratory
524.2	Total Trihalomethanes	EPA-DW	EA POM
524.2	Volatile Organic Compounds (GC/MS SIM)	EPA-DW	EA POM
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	EA POM
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA POM
504.1	EDB, DBCP and 1,2,3-TCP (GC)	EPA-DW2	EA POM
505	Organochlorine Pesticides/PCBs (GC)	EPA	EA POM
SM 4500 S2 D	Sulfide, Total	SM	EA POM
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
504.1	Microextraction	EPA-DW	EA POM
505	Extraction, Organochlorine Pesticides/PCBs	EPA	EA POM
525.2	Extraction of Semivolatile Compounds	EPA	EA POM

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

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

Sample Summary

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

Job ID: 380-34925-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-34925-1	AIEA GULCH WELLS PUMP 2	Drinking Water	01/18/23 08:30	01/19/23 10:00
380-34925-2	TB: AIEA GULCH WELLS PUMP 2	Water	01/18/23 08:30	01/19/23 10:00

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3051 Fujita Street
 Torrance, CA 90505
 Tel: (310)-618-8889

Date: 02-07-2023
 EMAX Batch No.: 23A219

Attn: Jackie Contreras

Eurofins Eaton Analytical
 750 Royal Oaks Dr., Suite 100
 Monrovia, CA 91016-3629

Subject: Laboratory Report
 Project: 380-34925

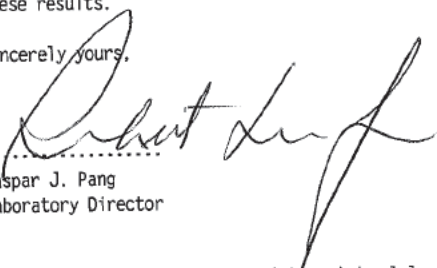
Enclosed is the Laboratory report for samples received on 01/20/23.
 The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-34925-1	A219-01	01/18/23	WATER	TPH GASOLINE TPH ETHANOL
380-34925-2	A219-02	01/18/23	WATER	TPH GASOLINE

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



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 <u>23A219</u> Recipient <u>Maria Rivera</u> Date <u>01/20/23</u> Time <u>12:50</u>
--	---------------------------	--

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 checked="" 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)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition <u>correction</u>	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging <u>factor: -0.2</u>	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler <u>11.6/1.4 °C</u>	<input checked="" type="checkbox"/> Cooler <u>21.5/1.3 °C</u>	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer: <u>A - S/N 221052760</u>	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 4 _____ °C
		<u>B - S/N 210760237</u>	<input type="checkbox"/> Cooler 5 _____ °C
			<input type="checkbox"/> Cooler 8 _____ °C
			<input type="checkbox"/> Cooler 9 _____ °C
			<input type="checkbox"/> Cooler 10 _____ °C

Comments: Temperature is out of range. PM was informed IMMEDIATELY.

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>2</u>	<u>13, 14</u>	<u>D22</u>	<u>2nd Date/Time reads: 12/27/22</u> <u>at 12:15</u>	<u>RT</u>
<i>(Remaining rows are crossed out with a large diagonal line)</i>				

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: * out of HT if collected 12/27/22.

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

- Code Description-Sample Management**
- D1 Analysis is not indicated in _____
 - D2 Analysis mismatch COC vs label
 - D3 Sample ID mismatch COC vs label
 - D4 Sample ID is not indicated in _____
 - D5 Container -[improper] [leaking] [broken]
 - D6 Date/Time is not indicated in _____
 - D7 Date/Time mismatch COC vs label
 - D8 Sample listed in COC is not received
 - D9 Sample received is not listed in COC
 - D10 No initial/date on corrections in COC/label
 - D11 Container count mismatch COC vs received
 - D12 Container size mismatch COC vs received

- Code Description-Sample Management**
- D13 Out of Holding Time
 - D14 Bubble is >6mm
 - D15 No trip blank in cooler
 - D16 Preservation not indicated in _____
 - D17 Preservation mismatch COC vs label
 - D18 Insufficient chemical preservative
 - D19 Insufficient Sample
 - D20 No filtration info for dissolved analysis
 - D21 No sample for moisture determination
 - D22 2nd date/time on label is incorrect
 - D23 _____
 - D24 _____

Continue to next page.

- Code Description-Sample Management**
- R1 Proceed as indicated in COC Label
 - R2 Refer to attached instruction
 - R3 Cancel the analysis
 - R4 Use vial with smallest bubble first
 - R5 Log-in with latest sampling date and time+1 min
 - R6 Adjust pH as necessary
 - R7 Filter and preserved as necessary
 - R8 _____
 - R9 _____
 - R10 _____
 - R11 _____
 - R12 _____

REVIEWS:

Sample Labeling Maria Rivera / Jocelyne Solis-Ramos
 Date 01/20/23 / 01/20/23

SRF Jocelyne Solis-Ramos
 Date 01/20/23

PM MB
 Date 1/23/23
 Page 3 of 44
 4/23/2023

REPORT ID: 23A219

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	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:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	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

380-34925

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 23A219



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-34925

SDG : 23A219

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of two(2) water samples were received on 01/20/23 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. VG39A11B - 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. VG39A11L/VG39A11C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG. Gasoline was within MS QC limits in A220-01M/A220-01S. 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.

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SAMPLE RESULTS

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL	Date Collected: 01/18/23 08:30
Project : 380-34925	Date Received: 01/20/23
Batch No. : 23A219	Date Extracted: 01/24/23 14:43
Sample ID : 380-34925-1	Date Analyzed: 01/24/23 14:43
Lab Samp ID: A219-01	Dilution Factor: 1
Lab File ID: EA24008A	Matrix: WATER
Ext Btch ID: 23VG39A11	% Moisture: NA
Calib. Ref.: EA24004A	Instrument ID: 39

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	0.0321	0.0400	80	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

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected: 01/18/23 08:30
Project	: 380-34925	Date Received: 01/20/23
Batch No.	: 23A219	Date Extracted: 01/24/23 15:20
Sample ID	: 380-34925-2	Date Analyzed: 01/24/23 15:20
Lab Samp ID:	A219-02	Dilution Factor: 1
Lab File ID:	EA24009A	Matrix: WATER
Ext Btch ID:	23VG39A11	% Moisture: NA
Calib. Ref.:	EA24004A	Instrument ID: 39

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	0.0317	0.0400	79	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

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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-34925
BATCH NO. : 23A219
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID : VG39A11B	VG39A11L	VG39A11C
LAB FILE ID : EA24005A	EA24006A	EA24007A
DATE PREPARED : 01/24/23 12:54	01/24/23 13:32	01/24/23 14:07
DATE ANALYZED : 01/24/23 12:54	01/24/23 13:32	01/24/23 14:07
PREP BATCH : 23VG39A11	23VG39A11	23VG39A11
CALIBRATION REF: EA24004A	EA24004A	EA24004A

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	0.436	87	0.500	0.450	90	3	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0413	103	0.0400	0.0405	101	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 : 380-34920
BATCH NO. : 23A220
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-34920-1	380-34920-1MS	380-34920-1MSD
LAB SAMPLE ID	: A220-01	A220-01M	A220-01S
LAB FILE ID	: EA24010A	EA24011A	EA24012A
DATE PREPARED	: 01/24/23 15:56	01/24/23 16:32	01/24/23 17:09
DATE ANALYZED	: 01/24/23 15:56	01/24/23 16:32	01/24/23 17:09
PREP BATCH	: 23VG39A11	23VG39A11	23VG39A11
CALIBRATION REF:	EA24004A	EA24004A	EA24004A

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	0.462	92	0.500	0.455	91	2	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0441	110	0.0400	0.0427	107	60-140

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-34925

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23A219



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-34925

SDG : 23A219

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/20/23 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. DSA029WB - 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 DSA029WL. 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 23A175-01M/23A175-01S. 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: 380-34925

SDG : 23A219

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/20/23 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. DSA029WB - 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 J5A029WL. 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 23A175-01M/23A175-01S. 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: 380-34925

SDG : 23A219

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/20/23 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. DSA029WB - 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 J8A029WL. 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 23A175-01M/23A175-01S. 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

SDG NO. : 23A219
Instrument ID : D5

Client : EUROFINS EATON ANALYTICAL
Project : 380-34925

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA029WB	1	NA	01/24/2318:24	01/23/2314:30	LA24010A	LA24004A	23DSA029W	Method Blank
LCS1W	DSA029WL	1	NA	01/24/2318:42	01/23/2314:30	LA24011A	LA24004A	23DSA029W	Lab Control Sample (LCS)
380-34925-1	A219-01	1	NA	01/24/2323:54	01/23/2314:30	LA24028A	LA24004A	23DSA029W	Field Sample

WATER

FN - Filename
% Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-34925
 SDG NO. : 23A219
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA029WB	1	NA	01/24/2318:24	01/23/2314:30	LA24010A	LA24005A	23DSA029W	Method Blank
LCS1W	J5A029WL	1	NA	01/24/2319:00	01/23/2314:30	LA24012A	LA24005A	23DSA029W	Lab Control Sample (LCS)
380-34925-1	A219-01	1	NA	01/24/2323:54	01/23/2314:30	LA24028A	LA24005A	23DSA029W	Field Sample

FN - Filename
 % Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-34925
 SDG NO. : 23A219
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA029MB	1	NA	01/24/23 18:24	01/23/23 14:30	LA24010A	LA24006A	23DSA029W	Method B1ank
LCS1W	J8A029WL	1	NA	01/24/23 19:18	01/23/23 14:30	LA24013A	LA24006A	23DSA029W	Lab Control Sample (LCS)
380-34925-1	A219-01	1	NA	01/24/23 23:54	01/23/23 14:30	LA24028A	LA24006A	23DSA029W	Field Sample

FN - Filename
 % Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/18/23 08:30
Project	: 380-34925	Date Received:	01/20/23
Batch No.	: 23A219	Date Extracted:	01/23/23 14:30
Sample ID	: 380-34925-1	Date Analyzed:	01/24/23 23:54
Lab Samp ID:	23A219-01	Dilution Factor:	1
Lab File ID:	LA24028A	Matrix:	WATER
Ext Btch ID:	23DSA029W	% Moisture:	NA
Calib. Ref.:	LA24004A	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	0.481	0.495	97	60-130
Hexacosane	0.150	0.124	121	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 : 1010ml Final Volume : 5ml
Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/18/23 08:30
Project	: 380-34925	Date Received:	01/20/23
Batch No.	: 23A219	Date Extracted:	01/23/23 14:30
Sample ID	: 380-34925-1	Date Analyzed:	01/24/23 23:54
Lab Samp ID:	23A219-01	Dilution Factor:	1
Lab File ID:	LA24028A	Matrix:	WATER
Ext Btch ID:	23DSA029W	% Moisture:	NA
Calib. Ref.:	LA24005A	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	0.481	0.495	97	60-130
Hexacosane	0.150	0.124	121	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 : 1010ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/18/23 08:30
Project	: 380-34925	Date Received:	01/20/23
Batch No.	: 23A219	Date Extracted:	01/23/23 14:30
Sample ID	: 380-34925-1	Date Analyzed:	01/24/23 23:54
Lab Samp ID:	23A219-01	Dilution Factor:	1
Lab File ID:	LA24028A	Matrix:	WATER
Ext Btch ID:	23DSA029W	% Moisture:	NA
Calib. Ref.:	LA24006A	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	0.481	0.495	97	60-130
Hexacosane	0.150	0.124	121	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 : 1010ml Final Volume : 5ml
 Prepared by : P0reto Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/23/23 14:30
Project	: 380-34925	Date Received:	01/23/23
Batch No.	: 23A219	Date Extracted:	01/23/23 14:30
Sample ID	: MBLK1W	Date Analyzed:	01/24/23 18:24
Lab Samp ID:	DSA029WB	Dilution Factor:	1
Lab File ID:	LA24010A	Matrix:	WATER
Ext Btch ID:	23DSA029W	% Moisture:	NA
Calib. Ref.:	LA24004A	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	0.415	0.500	83	60-130
Hexacosane	0.129	0.125	103	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 : P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-34925
BATCH NO. : 23A219
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSA029WB DSA029WL
LAB FILE ID : LA24010A LA24011A
DATE PREPARED : 01/23/23 14:30 01/23/23 14:30
DATE ANALYZED : 01/24/23 18:24 01/24/23 18:42
PREP BATCH : 23DSA029W 23DSA029W
CALIBRATION REF: LA24004A LA24004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.43	97	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.510	102	60-130
Hexacosane	0.125	0.143	114	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-35053
BATCH NO. : 23A175
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-35053-1	380-35053-1MS	380-35053-1MSD
LAB SAMPLE ID	: 23A175-01	23A175-01M	23A175-01S
LAB FILE ID	: LA24014A	LA24015A	LA24016A
DATE PREPARED	: 01/23/23 14:30	01/23/23 14:30	01/23/23 14:30
DATE ANALYZED	: 01/24/23 19:37	01/24/23 19:55	01/24/23 20:14
PREP BATCH	: 23DSA029W	23DSA029W	23DSA029W
CALIBRATION REF:	LA24004A	LA24004A	LA24004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.75	1.93	70	2.75	2.07	75	7	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.550	0.415	75	0.550	0.446	81	60-130
Hexacosane	0.138	0.147	107	0.138	0.147	107	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:	01/23/23 14:30
Project	: 380-34925	Date Received:	01/23/23
Batch No.	: 23A219	Date Extracted:	01/23/23 14:30
Sample ID	: MBLK1W	Date Analyzed:	01/24/23 18:24
Lab Samp ID:	DSA029WB	Dilution Factor:	1
Lab File ID:	LA24010A	Matrix:	WATER
Ext Btch ID:	23DSA029W	% Moisture:	NA
Calib. Ref.:	LA24005A	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	0.415	0.500	83	60-130
Hexacosane	0.129	0.125	103	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 : P0reto

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-34925
BATCH NO. : 23A219
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSA029WB J5A029WL
LAB FILE ID : LA24010A LA24012A
DATE PREPARED : 01/23/23 14:30 01/23/23 14:30
DATE ANALYZED : 01/24/23 18:24 01/24/23 19:00
PREP BATCH : 23DSA029W 23DSA029W
CALIBRATION REF: LA24005A LA24005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP5	ND	2.50	2.51	100	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.515	103	60-130
Hexacosane	0.125	0.144	115	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-35053
BATCH NO. : 23A175
METHOD : 3520C/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : 380-35053-1	380-35053-1MS	380-35053-1MSD
LAB SAMPLE ID : 23A175-01	23A175-01M	23A175-01S
LAB FILE ID : LA24014A	LA24017A	LA24018A
DATE PREPARED : 01/23/23 14:30	01/23/23 14:30	01/23/23 14:30
DATE ANALYZED : 01/24/23 19:37	01/24/23 20:32	01/24/23 20:50
PREP BATCH : 23DSA029W	23DSA029W	23DSA029W
CALIBRATION REF: LA24005A	LA24005A	LA24005A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.55	1.64	64	2.65	1.97	74	18	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.510	0.410	80	0.530	0.462	87	60-130
Hexacosane	0.127	0.130	102	0.132	0.142	107	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:	01/23/23 14:30
Project	: 380-34925	Date Received:	01/23/23
Batch No.	: 23A219	Date Extracted:	01/23/23 14:30
Sample ID	: MBLK1W	Date Analyzed:	01/24/23 18:24
Lab Samp ID:	DSA029WB	Dilution Factor:	1
Lab File ID:	LA24010A	Matrix:	WATER
Ext Btch ID:	23DSA029W	% Moisture:	NA
Calib. Ref.:	LA24006A	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	0.415	0.500	83	60-130
Hexacosane	0.129	0.125	103	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 : P0reto

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-34925
BATCH NO. : 23A219
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSA029WB J8A029WL
LAB FILE ID : LA24010A LA24013A
DATE PREPARED : 01/23/23 14:30 01/23/23 14:30
DATE ANALYZED : 01/24/23 18:24 01/24/23 19:18
PREP BATCH : 23DSA029W 23DSA029W
CALIBRATION REF: LA24006A LA24006A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP8	ND	2.50	2.10	84	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.523	105	60-130
Hexacosane	0.125	0.150	120	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-35053
BATCH NO. : 23A175
METHOD : 3520C/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : 380-35053-1	380-35053-1MS	380-35053-1MSD
LAB SAMPLE ID : 23A175-01	23A175-01M	23A175-01S
LAB FILE ID : LA24014A	LA24019A	LA24020A
DATE PREPARED : 01/23/23 14:30	01/23/23 14:30	01/23/23 14:30
DATE ANALYZED : 01/24/23 19:37	01/24/23 21:09	01/24/23 21:27
PREP BATCH : 23DSA029W	23DSA029W	23DSA029W
CALIBRATION REF: LA24006A	LA24006A	LA24006A

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	1.98	75	2.58	2.17	84	9	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.530	0.474	89	0.515	0.508	99	60-130
Hexacosane	0.132	0.139	105	0.129	0.154	120	60-130

PS: Parent Sample MS; Matrix Spike MSD; Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-34925

METHOD SW8015C
ALCOHOLS BY GC

SDG#: 23A219



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-34925

SDG : 23A219

METHOD SW8015C

ALCOHOLS BY GC

One(1) water sample was received on 01/20/23 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. MEA003WB - 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. MEA003WL/MEA003WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG. Ethanol was within MS QC limits in A194-01M/A194-01S. 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.

LAB CHRONICLE
ALCOHOLS BY GC

SDG NO. : 23A219
Instrument ID : GCT050

Client : EUROFINS EATON ANALYTICAL
Project : 380-34925

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	WATER	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	MEA003WB	1	NA	01/20/2312:21		NA	TA20004A	TA20002A	MEA003W	Method Blank
LCS1W	MEA003WL	1	NA	01/20/2312:35		NA	TA20005A	TA20002A	MEA003W	Lab Control Sample (LCS)
LCD1W	MEA003WC	1	NA	01/20/2312:49		NA	TA20006A	TA20002A	MEA003W	LCS Duplicate
380-34925-1	A219-01	1	NA	01/20/2319:16		NA	TA20013A	TA20011A	MEA003W	Field Sample

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

METHOD SW8015C
ALCOHOLS BY GC

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=====
Client      : EUROFINS EATON ANALYTICAL      Date Collected: 01/18/23
Project    : 380-34925                      Date Received: 01/20/23
Batch No.  : 23A219                          Date Extracted: NA
Sample ID  : 380-34925-1                    Date Analyzed: 01/20/23 19:16
Lab Samp ID: A219-01                        Dilution Factor: 1
Lab File ID: TA20013A                       Matrix          : WATER
Ext Btch ID: MEA003W                        % Moisture      : NA
Calib. Ref.: TA20011A                       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	: 380-34925	Date Received:	NA
Batch No.	: 23A219	Date Extracted:	NA
Sample ID:	MBLK1W	Date Analyzed:	01/20/23 12:21
Lab Samp ID:	MEA003WB	Dilution Factor:	1
Lab File ID:	TA20004A	Matrix	: WATER
Ext Btch ID:	MEA003W	% Moisture	: NA
Calib. Ref.:	TA20002A	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: 380-34925
BATCH NO.: 23A219
METHOD: METHOD SW8015C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: MEA003WB MEA003WL MEA003WC
LAB FILE ID: TA20004A TA20005A TA20006A
DATE EXTRACTED: NA NA NA DATE COLLECTED: NA
DATE ANALYZED: 01/20/2312:21 01/20/2312:35 01/20/2312:49 DATE RECEIVED: NA
PREP. BATCH: MEA003W MEA003W MEA003W
CALIB. REF: TA20002A TA20002A TA20002A

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	9730	97	10000	9310	93	4	60-130	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL
PROJECT: 380-34727
BATCH NO.: 23A194
METHOD: METHOD SW8015C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: 380-34727-1
LAB SAMP ID: A194-01 A194-01M A194-01S
LAB FILE ID: TA20007A TA20008A TA20009A
DATE EXTRACTED: NA NA NA DATE COLLECTED: 01/17/23
DATE ANALYZED: 01/20/2313:35 01/20/2313:55 01/20/2314:09 DATE RECEIVED: 01/19/23
PREP. BATCH: MEA003W MEA003W MEA003W
CALIB. REF: TA20002A TA20002A TA20002A

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	9420	94	10000	9260	93	2	60-130	30

February 27, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-34925-1
 Physis Project ID: 1407003-372

Dear Rachelle,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 1/20/2023. 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: 1407003-372

RED-HILL Project # 38001111 Job # 380-34925-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
103758	AIEA GULCH WELLS PUMP 2	380-34925-1	1/18/2023	8:30	Samplewater	Not Specified

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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 MS₁/MS₂, BS₁/BS₂, LCS₁/LCS₂, LCM₁/LCM₂, CRM₁/CRM₂, surrogate spikes and/or replicate project sample analysis (R₁/R₂) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

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

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

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

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

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

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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

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

TERRA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

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Acid Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103758-R1	AIEA GULCH WELLS PUMP 2 380-3	Matrix: Samplewater					Sampled:	18-Jan-23 8:30		Received:	20-Jan-23
(2,4,6-Tribromophenol)	EPA 625.1	% Recovery	90	1			Total		O-40114	20-Jan-23	14-Feb-23
(d5-Phenol)	EPA 625.1	% Recovery	23	1			Total		O-40114	20-Jan-23	14-Feb-23
2,4,5-Trichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2,4,6-Trichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2,4-Dichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2,4-Dinitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
2,6-Dichlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2,6-Di-tert-butyl-4-methylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2,6-Di-tert-butylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2-Chlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
2-Methyl-4,6-dinitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
2-Methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
2-Nitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
3+4-Methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
4-Chloro-3-methylphenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
4-Nitrophenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
6-tert-butyl-2,4-dimethylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
Benzoic Acid	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
Benzyl Alcohol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
Pentachlorophenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23
Phenol	EPA 625.1	µg/L	ND	1	0.1	0.2	Total		O-40114	20-Jan-23	14-Feb-23
p-tert-Butylphenol	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 103758-R1	AIEA GULCH WELLS PUMP 2 380-3 Matrix: Samplewater						Sampled:	18-Jan-23	8:30	Received:	20-Jan-23	
2-Chloronaphthalene	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
2-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
3-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
4-Bromophenylphenyl ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
4-Chloroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
4-Chlorophenylphenyl ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
4-Nitroaniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Aniline	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Benzidine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Bis(2-Chloroethoxy) methane	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Bis(2-Chloroethyl) ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Bis(2-Chloroisopropyl) ether	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
D benzofuran	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Hexachloroethane	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
Nitrobenzene	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
N-Nitrosodi-n-propylamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	
N-Nitrosodiphenylamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40114	20-Jan-23	14-Feb-23	

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103758-R1	AIEA GULCH WELLS PUMP 2 380-3 Matrix: Samplewater						Sampled:	18-Jan-23	8:30	Received:	20-Jan-23
(d10-Acenaphthene)	EPA 625.1	% Recovery	94	1			Total		O-40114	20-Jan-23	14-Feb-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	95	1			Total		O-40114	20-Jan-23	14-Feb-23
(d12-Chrysene)	EPA 625.1	% Recovery	105	1			Total		O-40114	20-Jan-23	14-Feb-23
(d12-Perylene)	EPA 625.1	% Recovery	99	1			Total		O-40114	20-Jan-23	14-Feb-23
(d8-Naphthalene)	EPA 625.1	% Recovery	83	1			Total		O-40114	20-Jan-23	14-Feb-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40114	20-Jan-23	14-Feb-23



QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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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	
Sample ID: 103757-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40114		Prepared: 20-Jan-23		Analyzed: 13-Feb-23					
(2,4,6-Tribromophenol)	Total	93	1			% Recovery	100	93	30 - 130%	PASS	
(d5-Phenol)	Total	76	1			% Recovery	100	76	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
Sample ID: 103757-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40114			Prepared: 20-Jan-23		Analyzed: 13-Feb-23					
(2,4,6-Tribromophenol)	Total	108	1			% Recovery	100	0	108	30 - 130%	PASS	
(d5-Phenol)	Total	82	1			% Recovery	100	0	82	0 - 130%	PASS	
2,4,5-Trichlorophenol	Total	0.923	1	0.05	0.1	µg/L	1	0	92	30 - 130%	PASS	
2,4,6-Trichlorophenol	Total	0.791	1	0.05	0.1	µg/L	1	0	79	56 - 118%	PASS	
2,4-Dichlorophenol	Total	0.74	1	0.05	0.1	µg/L	1	0	74	51 - 117%	PASS	
2,4-Dinitrophenol	Total	1.13	1	0.1	0.2	µg/L	1	0	113	0 - 152%	PASS	
2,6-Dichlorophenol	Total	0.355	1	0.05	0.1	µg/L	0.5	0	71	30 - 130%	PASS	
2,6-Di-tert-butyl-4-methylphenol	Total	0.724	1	0.05	0.1	µg/L	1	0	72	50 - 150%	PASS	
2,6-Di-tert-butylphenol	Total	0.821	1	0.05	0.1	µg/L	1	0	82	50 - 150%	PASS	
2-Chlorophenol	Total	0.661	1	0.05	0.1	µg/L	1	0	66	41 - 110%	PASS	
2-Methyl-4,6-dinitrophenol	Total	1.08	1	0.1	0.2	µg/L	1	0	108	0 - 141%	PASS	
2-Methylphenol	Total	0.761	1	0.1	0.2	µg/L	1	0	76	40 - 117%	PASS	
2-Nitrophenol	Total	0.632	1	0.1	0.2	µg/L	1	0	63	40 - 117%	PASS	
3+4-Methylphenol	Total	0.784	1	0.1	0.2	µg/L	1	0	78	0 - 130%	PASS	
4-Chloro-3-methylphenol	Total	0.839	1	0.1	0.2	µg/L	1	0	84	51 - 128%	PASS	
4-Nitrophenol	Total	0.824	1	0.1	0.2	µg/L	1	0	82	10 - 164%	PASS	
6-tert-butyl-2,4-dimethylphenol	Total	0.721	1	0.05	0.1	µg/L	1	0	72	50 - 150%	PASS	
Benzoic Acid	Total	0.63	1	0.1	0.2	µg/L	1	0	63	2 - 145%	PASS	
Benzyl Alcohol	Total	0.783	1	0.1	0.2	µg/L	1	0	78	43 - 148%	PASS	
Pentachlorophenol	Total	1.1	1	0.05	0.1	µg/L	1	0	110	36 - 111%	PASS	
Phenol	Total	0.693	1	0.1	0.2	µg/L	1	0	69	29 - 114%	PASS	
p-tert-Butylphenol	Total	0.865	1	0.05	0.1	µg/L	1	0	87	50 - 150%	PASS	

Acid Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODEc	
									%	LIMITS	%	LIMITS		
Sample ID: 103757-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:				
		Method: EPA 625.1			Batch ID: O-40114			Prepared: 20-Jan-23		Analyzed: 13-Feb-23				
(2,4,6-Tribromophenol)	Total	107	1			% Recovery	100	0	107	30 - 130%	PASS	1	30	PASS
(d5-Phenol)	Total	95	1			% Recovery	100	0	95	0 - 130%	PASS	15	30	PASS
2,4,5-Trichlorophenol	Total	0.827	1	0.05	0.1	µg/L	1	0	83	30 - 130%	PASS	10	30	PASS
2,4,6-Trichlorophenol	Total	0.809	1	0.05	0.1	µg/L	1	0	81	56 - 118%	PASS	2	30	PASS
2,4-Dichlorophenol	Total	0.832	1	0.05	0.1	µg/L	1	0	83	51 - 117%	PASS	11	30	PASS
2,4-Dinitrophenol	Total	0.955	1	0.1	0.2	µg/L	1	0	95	0 - 152%	PASS	16	30	PASS
2,6-Dichlorophenol	Total	0.404	1	0.05	0.1	µg/L	0.5	0	81	30 - 130%	PASS	13	30	PASS
2,6-Di-tert-butyl-4-methylphenol	Total	0.774	1	0.05	0.1	µg/L	1	0	77	50 - 150%	PASS	7	30	PASS
2,6-Di-tert-butylphenol	Total	0.854	1	0.05	0.1	µg/L	1	0	85	50 - 150%	PASS	4	30	PASS
2-Chlorophenol	Total	0.788	1	0.05	0.1	µg/L	1	0	79	41 - 110%	PASS	18	30	PASS
2-Methyl-4,6-dinitrophenol	Total	0.869	1	0.1	0.2	µg/L	1	0	87	0 - 141%	PASS	22	30	PASS
2-Methylphenol	Total	0.853	1	0.1	0.2	µg/L	1	0	85	40 - 117%	PASS	11	30	PASS
2-Nitrophenol	Total	0.759	1	0.1	0.2	µg/L	1	0	76	40 - 117%	PASS	19	30	PASS
3+4-Methylphenol	Total	0.841	1	0.1	0.2	µg/L	1	0	84	0 - 130%	PASS	7	30	PASS
4-Chloro-3-methylphenol	Total	0.903	1	0.1	0.2	µg/L	1	0	90	51 - 128%	PASS	7	30	PASS
4-Nitrophenol	Total	0.871	1	0.1	0.2	µg/L	1	0	87	10 - 164%	PASS	6	30	PASS
6-tert-butyl-2,4-dimethylphenol	Total	0.778	1	0.05	0.1	µg/L	1	0	78	50 - 150%	PASS	8	30	PASS
Benzoic Acid	Total	0.619	1	0.1	0.2	µg/L	1	0	62	2 - 145%	PASS	2	30	PASS
Benzyl Alcohol	Total	0.862	1	0.1	0.2	µg/L	1	0	86	43 - 148%	PASS	10	30	PASS
Pentachlorophenol	Total	0.949	1	0.05	0.1	µg/L	1	0	95	36 - 111%	PASS	15	30	PASS
Phenol	Total	0.808	1	0.1	0.2	µg/L	1	0	81	29 - 114%	PASS	16	30	PASS
p-tert-Butylphenol	Total	0.937	1	0.05	0.1	µg/L	1	0	94	50 - 150%	PASS	9	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	%
Sample ID: 103757-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40114		Prepared: 20-Jan-23		Analyzed: 13-Feb-23					
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					
Disalicylidenepropanediamin	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	
Sample ID: 103757-BS1		QAQC Procedural Blank				Matrix: BlankMatrix			Sampled:		Received:		
		Method: EPA 625.1			Batch ID: O-40114			Prepared: 20-Jan-23		Analyzed: 13-Feb-23			
2-Chloronaphthalene	Total	0.849	1	0.05	0.1	µg/L	1	0	85	53 - 130%	PASS		
2-Nitroaniline	Total	0.771	1	0.05	0.1	µg/L	1	0	77	69 - 114%	PASS		
3-Nitroaniline	Total	0.794	1	0.05	0.1	µg/L	1	0	79	23 - 137%	PASS		
4-Bromophenylphenyl ether	Total	0.824	1	0.05	0.1	µg/L	1	0	82	61 - 132%	PASS		
4-Chloroaniline	Total	0.639	1	0.05	0.1	µg/L	1	0	64	50 - 150%	PASS		
4-Chlorophenylphenyl ether	Total	0.862	1	0.05	0.1	µg/L	1	0	86	63 - 130%	PASS		
4-Nitroaniline	Total	0.851	1	0.05	0.1	µg/L	1	0	85	10 - 159%	PASS		
Aniline	Total	0.571	1	0.05	0.1	µg/L	1	0	57	50 - 150%	PASS		
Benzidine	Total	0.0145	1	0.05	0.1	µg/L	1	0	1	0 - 125%	PASS		
Bis(2-Chloroethoxy) methane	Total	0.835	1	0.05	0.1	µg/L	1	0	83	66 - 122%	PASS		
Bis(2-Chloroethyl) ether	Total	0.78	1	0.05	0.1	µg/L	1	0	78	43 - 127%	PASS		
Bis(2-Chloroisopropyl) ether	Total	0.765	1	0.05	0.1	µg/L	1	0	76	49 - 128%	PASS		
Dibenzofuran	Total	0.824	1	0.05	0.1	µg/L	1	0	82	50 - 150%	PASS		
Disalicylidene-propanediamin	Total	51.7	1	0.05	0.1	µg/L	50	0	103	50 - 150%	PASS		
Hexachloroethane	Total	0.621	1	0.05	0.1	µg/L	1	0	62	27 - 130%	PASS		
Nitrobenzene	Total	0.708	1	0.05	0.1	µg/L	1	0	71	54 - 111%	PASS		
N-Nitrosodi-n-propylamine	Total	0.771	1	0.05	0.1	µg/L	1	0	77	61 - 152%	PASS		
N-Nitrosodiphenylamine	Total	0.864	1	0.05	0.1	µg/L	1	0	86	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		
Sample ID: 103757-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:				
		Method: EPA 625.1			Batch ID: O-40114			Prepared: 20-Jan-23		Analyzed: 13-Feb-23				
2-Chloronaphthalene	Total	0.889	1	0.05	0.1	µg/L	1	0	89	53 - 130%	PASS	5	30	PASS
2-Nitroaniline	Total	0.859	1	0.05	0.1	µg/L	1	0	86	69 - 114%	PASS	11	30	PASS
3-Nitroaniline	Total	0.852	1	0.05	0.1	µg/L	1	0	85	23 - 137%	PASS	7	30	PASS
4-Bromophenylphenyl ether	Total	0.871	1	0.05	0.1	µg/L	1	0	87	61 - 132%	PASS	6	30	PASS
4-Chloroaniline	Total	0.666	1	0.05	0.1	µg/L	1	0	67	50 - 150%	PASS	5	30	PASS
4-Chlorophenylphenyl ether	Total	0.883	1	0.05	0.1	µg/L	1	0	88	63 - 130%	PASS	2	30	PASS
4-Nitroaniline	Total	0.919	1	0.05	0.1	µg/L	1	0	92	10 - 159%	PASS	8	30	PASS
Aniline	Total	0.635	1	0.05	0.1	µg/L	1	0	63	50 - 150%	PASS	12	30	PASS
Benzidine	Total	0.00615	1	0.05	0.1	µg/L	1	0	1	0 - 125%	PASS	0	30	PASS
Bis(2-Chloroethoxy) methane	Total	0.951	1	0.05	0.1	µg/L	1	0	95	66 - 122%	PASS	12	30	PASS
Bis(2-Chloroethyl) ether	Total	0.943	1	0.05	0.1	µg/L	1	0	94	43 - 127%	PASS	19	30	PASS
Bis(2-Chloroisopropyl) ether	Total	0.899	1	0.05	0.1	µg/L	1	0	90	49 - 128%	PASS	17	30	PASS
Dibenzofuran	Total	0.881	1	0.05	0.1	µg/L	1	0	88	50 - 150%	PASS	7	30	PASS
Disalicylidene-propanediamin	Total	59.8	1	0.05	0.1	µg/L	50	0	120	50 - 150%	PASS	15	30	PASS
Hexachloroethane	Total	0.704	1	0.05	0.1	µg/L	1	0	70	27 - 130%	PASS	12	30	PASS
Nitrobenzene	Total	0.819	1	0.05	0.1	µg/L	1	0	82	54 - 111%	PASS	14	30	PASS
N-Nitrosodi-n-propylamine	Total	0.84	1	0.05	0.1	µg/L	1	0	84	61 - 152%	PASS	9	30	PASS
N-Nitrosodiphenylamine	Total	0.887	1	0.05	0.1	µg/L	1	0	89	49 - 142%	PASS	3	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODE
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 103757-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
	Method: EPA 625.1					Batch ID: O-40114	Prepared: 20-Jan-23	Analyzed: 13-Feb-23			
(d10-Acenaphthene)	Total	98	1			% Recovery	100	98	27 - 133%	PASS	
(d10-Phenanthrene)	Total	97	1			% Recovery	100	97	43 - 129%	PASS	
(d12-Chrysene)	Total	104	1			% Recovery	100	104	52 - 144%	PASS	
(d12-Perylene)	Total	96	1			% Recovery	100	96	36 - 161%	PASS	
(d8-Naphthalene)	Total	86	1			% Recovery	100	86	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 _c
							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	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 103757-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40114			Prepared: 20-Jan-23		Analyzed: 13-Feb-23					
(d10-Acenaphthene)	Total	93	1			% Recovery	100	0	93	27 - 133%	PASS	
(d10-Phenanthrene)	Total	93	1			% Recovery	100	0	93	43 - 129%	PASS	
(d12-Chrysene)	Total	102	1			% Recovery	100	0	102	52 - 144%	PASS	
(d12-Perylene)	Total	95	1			% Recovery	100	0	95	36 - 161%	PASS	
(d8-Naphthalene)	Total	80	1			% Recovery	100	0	80	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.459	1	0.001	0.005	µg/L	0.5	0	92	48 - 120%	PASS	
2-Methylnaphthalene	Total	1.4	1	0.001	0.005	µg/L	1.5	0	93	47 - 130%	PASS	
Acenaphthene	Total	1.49	1	0.001	0.005	µg/L	1.5	0	99	53 - 131%	PASS	
Acenaphthylene	Total	1.47	1	0.001	0.005	µg/L	1.5	0	98	43 - 140%	PASS	
Anthracene	Total	1.49	1	0.001	0.005	µg/L	1.5	0	99	58 - 135%	PASS	
Benz[a]anthracene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	55 - 145%	PASS	
Benzo[a]pyrene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	1.65	1	0.001	0.005	µg/L	1.5	0	110	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	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	1.59	1	0.001	0.005	µg/L	1.5	0	106	56 - 145%	PASS	
Biphenyl	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	56 - 119%	PASS	
Chrysene	Total	1.65	1	0.001	0.005	µg/L	1.5	0	110	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	1.76	1	0.001	0.005	µg/L	1.5	0	117	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	50 - 150%	PASS	
Dibenzothiophene	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	46 - 126%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	60 - 146%	PASS		
Fluorene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	1.77	1	0.001	0.005	µg/L	1.5	0	118	50 - 151%	PASS		
Naphthalene	Total	1.3	1	0.001	0.005	µg/L	1.5	0	87	41 - 126%	PASS		
Perylene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	48 - 141%	PASS		
Phenanthrene	Total	1.5	1	0.001	0.005	µg/L	1.5	0	100	67 - 127%	PASS		
Pyrene	Total	1.53	1	0.001	0.005	µg/L	1.5	0	102	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Sample ID: 103757-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:			
Method: EPA 625.1		Batch ID: O-40114			Prepared: 20-Jan-23			Analyzed: 13-Feb-23						
(d10-Acenaphthene)	Total	96	1			% Recovery	100	0	96	27 - 133%	PASS	3	30	PASS
(d10-Phenanthrene)	Total	96	1			% Recovery	100	0	96	43 - 129%	PASS	3	30	PASS
(d12-Chrysene)	Total	105	1			% Recovery	100	0	105	52 - 144%	PASS	3	30	PASS
(d12-Perylene)	Total	92	1			% Recovery	100	0	92	36 - 161%	PASS	3	30	PASS
(d8-Naphthalene)	Total	93	1			% Recovery	100	0	93	25 - 125%	PASS	15	30	PASS
1-Methylnaphthalene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	31 - 128%	PASS	7	30	PASS
1-Methylphenanthrene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	66 - 127%	PASS	6	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.499	1	0.001	0.005	µg/L	0.5	0	100	55 - 122%	PASS	4	30	PASS
2,6-Dimethylnaphthalene	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	48 - 120%	PASS	3	30	PASS
2-Methylnaphthalene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	47 - 130%	PASS	8	30	PASS
Acenaphthene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	53 - 131%	PASS	6	30	PASS
Acenaphthylene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	43 - 140%	PASS	3	30	PASS
Anthracene	Total	1.51	1	0.001	0.005	µg/L	1.5	0	101	58 - 135%	PASS	2	30	PASS
Benz[a]anthracene	Total	1.62	1	0.001	0.005	µg/L	1.5	0	108	55 - 145%	PASS	1	30	PASS
Benzo[a]pyrene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	51 - 143%	PASS	0	30	PASS
Benzo[b]fluoranthene	Total	1.7	1	0.001	0.005	µg/L	1.5	0	113	46 - 165%	PASS	3	30	PASS
Benzo[e]pyrene	Total	0.455	1	0.001	0.005	µg/L	0.5	0	91	42 - 152%	PASS	7	30	PASS
Benzo[g,h,i]perylene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	63 - 133%	PASS	0	30	PASS
Benzo[k]fluoranthene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	56 - 119%	PASS	3	30	PASS
Chrysene	Total	1.65	1	0.001	0.005	µg/L	1.5	0	110	56 - 141%	PASS	0	30	PASS
Dibenz[a,h]anthracene	Total	1.76	1	0.001	0.005	µg/L	1.5	0	117	55 - 150%	PASS	0	30	PASS
Dibenzo[a,l]pyrene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	50 - 150%	PASS	1	30	PASS
Dibenzothiophene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	46 - 126%	PASS	5	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	60 - 146%	PASS	3	30	PASS
Fluorene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	58 - 131%	PASS	2	30	PASS
Indeno[1,2,3-cd]pyrene	Total	1.85	1	0.001	0.005	µg/L	1.5	0	123	50 - 151%	PASS	4	30	PASS
Naphthalene	Total	1.49	1	0.001	0.005	µg/L	1.5	0	99	41 - 126%	PASS	13	30	PASS
Perylene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	48 - 141%	PASS	4	30	PASS
Phenanthrene	Total	1.54	1	0.001	0.005	µg/L	1.5	0	103	67 - 127%	PASS	3	30	PASS
Pyrene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	54 - 156%	PASS	3	30	PASS

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PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 103758

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.8694	5.4633	1111	Anthracene-D10-	1719-06-8	94
10.7976	0.7610	155	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	87
10.1581	0.7460	152	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	90
45.3812	0.7009	143	Cyclic octaatomic sulfur	10544-50-0	87
32.5847	0.6673	136	Benzoic acid, 2-ethylhexyl ester	5444-75-7	95

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank B1_40114

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.8727	5.3631	1111	Anthracene-D10-	1719-06-8	94
10.8002	1.2601	261	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	87
10.1649	0.4883	101	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	89

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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Chain of Custody Record

Client Information		Sampler: <i>Old Harper</i>		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-21926-1845.1					
Client Contact: Dr. Ron Fenstermacher		Phone: <i>8087485840</i>		E-Mail: Rachele.Arada@et.eurofinsus.com		State of Origin:		Page: Page 1 of 4					
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:			
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:		Field Filtered Sample (Yes or No) <input type="checkbox"/> Perform MS/MSD (Yes or No) <input type="checkbox"/> 504.1_PREC, 505_LL_PREC 2320B, 2510B, SIM4500_H+ 200.7, 200.8 2540C_Calcd - Total Dissolved Solids (TDS) SIM4500_S2_D - Sulfide, Total 524.2_Pres_PREC, 524.2_SIM_PREC 525.2_PREC - 525plus Plus TICs 300_OF_28D_B, 300_OF_28D_PREC, 300_OF_48H_PREC, 4500_F_C 245.1 - Local Method SUBCONTRACT - 8015 Jet Fuel 8 (JP8) SUBCONTRACT - 8015 Jet Fuel 5 (JP5) SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)						Preservation Codes:			
City: Honolulu		TAT Requested (days):								A - HCL		M - Hexane	
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								B - NaOH		N - None	
Phone: 808-748-5091(Tel)		PO #:								C - Zn Acetate		O - AsNaO2	
Email: RFENSTEMACHER@hbws.org		WO #:								D - Nitric Acid		P - Na2O4S	
Project Name: RED-HILL		Project #: 38001111		E - NaHSO4		Q - Na2SO3							
Site: Hawaii		SSOW#:		F - MeOH		R - Na2S2O3							
				G - Amchlor		S - H2SO4							
				H - Ascorbic Acid		T - TSP Dodecahydrate							
				I - Ice		U - Acetone							
				J - DI Water		V - MCAA							
				K - EDTA		W - pH 4-5							
				L - EDA		Y - Trizma							
				Other:		Z - other (specify)							
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)					
								Total Number of containers					
								Special Instructions/Note:					
AIEA GULCH WELLS PUMP 1								Water					
AIEA GULCH WELLS PUMP 2								Water					
AIEA WELLS P___ (260)								Water					
HALAWA WELLS UNITS 1 & 2								Water					
MOANALUA WELLS								Water					
HALAWA SHAFT VIEW POOL								Water					
KAAMILO WELLS								Water					
TB: AIEA GULCH WELLS PUMP 1								Water					
TB: AIEA GULCH WELLS PUMP 2								Water					
TB: AIEA WELLS PUMPS1&2(260)		<i>1-18-23</i>		<i>0830 G</i>				Water					
TB: HALAWA WELLS UNITS 1 & 2								Water					
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months									
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements: #6-7710 6476 0344 #7-7710 6476 0762									
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment: <i>FED EX #8-7710 6475 9232</i>							
Relinquished by: [Redacted]		Date/Time: <i>1-18-23 1130</i>		Company:		Received by: <i>[Signature]</i>		Date/Time: <i>01/19/2023 10:00</i>					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>(750A) GEL-FROZEN #6 07°-06° #7 2.5°-2.5° #8 1.7°-1.6°</i>									



380-34925 COC



Monrovia, CA (Suite 100)

750 Royal Oaks Drive Suite 100
 Monrovia, CA 91016
 Phone: 626-386-1100

Chain of Custody Record



Environment Testing

Client Information		Sampler: <i>Olaf Kappe</i>		Lab PM: Arada, Rachelle		Carrier Tracking No(s):		COC No: 380-21926-1845.2					
Client Contact: Dr. Ron Fenstemacher		Phone: <i>8087483840</i>		E-Mail: Rachelle.Arada@et.eurofinsus.com		State of Origin:		Page: Page 2 of 4					
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:			
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MS (Yes or No) <input checked="" type="checkbox"/> SUBCONTRACT - 8015 Ethanol SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 625 Base Neutral LL (EAL) Physis SUBCONTRACT - 625 Acid LL (EAL) Physis 524.3_SIM_PREC - Low Level TCP/EDB/DBCP SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 504.1_PREC - Local Method						Preservation Codes:			
City: Honolulu		TAT Requested (days):								A - HCL		M - Hexane	
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								B - NaOH		N - None	
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023								C - Zn Acetate		O - AsNaO2	
Email: RFENSTEMACHER@hbws.org		WO #:								D - Nitric Acid		P - Na2O4S	
Project Name: RED-HILL		Project #: 38001111		E - NaHSO4		Q - Na2SO3		R - Na2S2O3					
Site: Hawaii		SSOW#:		F - MeOH		S - H2SO4		T - TSP Dodecahydrate					
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Total Number of containers		Special Instructions/Note:	
						Preservation Code:		<input checked="" type="checkbox"/> R <input type="checkbox"/> R <input type="checkbox"/> R <input type="checkbox"/> R <input type="checkbox"/> RA <input type="checkbox"/> R					
AIEA GULCH WELLS PUMP 1								Water					
AIEA GULCH WELLS PUMP 2								Water					
AIEA WELLS P___ (260)								Water					
HALAWA WELLS UNITS 1 & 2								Water					
MOANALUA WELLS								Water					
HALAWA SHAFT VIEW POOL								Water					
KAAMILO WELLS								Water					
TB: AIEA GULCH WELLS PUMP 1								Water					
TB: AIEA GULCH WELLS PUMP 2		<i>1-18-23</i>		<i>0830</i>		<i>G</i>		Water				<i>X X X X</i>	
TB: AIEA WELLS PUMPS1&2(260)								Water					
TB: HALAWA WELLS UNITS 1 & 2								Water					
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements: <i>#6 - 7710 6476 0374</i> <i>#7 - 7710 6476 0762</i> <i>#8 - 7710 6475 4232</i>							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment: <i>FED Ex #8 - 7710 6475 4232</i>							
Relinquished by: <i>[Signature]</i>		Date/Time: <i>1-18-23 1130</i>		Company:		Received by: <i>[Signature]</i>		Date/Time: <i>01/19/2023 10:00</i>		Company: <i>EEA</i>			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>(750A) GEL-FROZEN { #6 - 0.7° - 0.6°</i> <i>#7 - 2.6° - 2.5°</i> <i>#8 - 1.9° - 1.6°</i>									



Environment Testing

Shipping Summary



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

Bottle Order Information

Bottle Order: RED-HILL - Quarterly
Bottle Order #: 1845
Request From Client: 6/23/2022
Date Order Posted: 6/23/2022 7:29:27AM
Order Status: Shipped
Prepared By: Davis Haley
Deliver By Date: 6/27/2022 11:59:00PM

Project/Event Information

Project Manager: Rachelle Arada
Tel: (626) 386-1106 Em: Rachelle.Arada@et.eurofinsus.com
Lab Project Number: 38001111
Project Ref: RED-HILL
Event Desc:

When To Ship:

Client Samples: AIEA GULCH WELLS PUMP 1, AIEA GULCH WELLS PUMP 2, AIEA WELLS P___ (260), HALAWA SHAFT VIEW POOL, HALAWA WELLS UNITS 1 & 2, KAAMILO WELLS, MOANALUA WELLS

Sets	Bottles/Set	Bottle Type Description	Field Filtered	Preservative	Method	Matrix	Comments
7	6	Voa Vial 40ml Amber - Sodium thiosulfate		Sodium Thiosulfate	504.1_PREC - Local Method 505_LL_PREC - (MOD) ML505 +505-EAL Aldrin Dieldrin Tox	Water Water	
7	1	Plastic 250ml - unpreserved		None	2320B - (MOD) Total Alkalinity SM4500_H+ - Local Method 2510B - Conductivity	Water Water Water	ICE FORMATION -GR
7	1	Plastic 500ml - with Nitric Acid		Nitric Acid	200.8 - Metals, Priority Pollutant by 200.8 200.7 - (MOD) Custom	Water Water	ICE FORMATION -GR

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

Shipping Summary

Client Samples: AIEA GULCH WELLS PUMP 1, AIEA GULCH WELLS PUMP 2, AIEA WELLS P___ (260), HALAWA SHAFT VIEW POOL, HALAWA WELLS UNITS 1 & 2, KAAMILO WELLS, MOANALUA WELLS

Sets	Bottles/Set	Bottle Type Description	Field Filtered	Preservative	Method	Matrix	Comments
7	1	Plastic 500ml - unpreserved		None	2540C_Calcd - Total Dissolved Solids (TDS)	Water	ICE FORMATION
7	1	Plastic 250ml - with Zinc Acetate & NaOH		Zinc Acetate and Sodium Hydroxide	SM4500_S2_D - Sulfide, Total	Water	
7	6	Voa Vial 40ml Amber - Ascor. Acid & HCL		Ascorbic Acid and Hydrochloric Acid	524.2_Pres_PREC - VOASDWA plus TICs + Acetone 524.2_SIM_PREC - TBA by 524.2 SIM	Water Water	
7	3	Amber Glass 1 Liter- Sodium Sulfite/HCL		Sodium Sulfite w/HCL	525.2_PREC - 525plus Plus TICs	Water	1 out of 3 ICE FORMATION - GR
7	2	Plastic 125mL - unpreserved		None	300_OF_28D_B - Bromide 4500_F_C - Fluoride 300_OF_28D_PREC - Chloride and Sulfate 300_OF_48H_PREC - Nitrite, Nitrate, and Nitrite+Nitrate	Water Water Water Water	2 out of 2 ICE FORMATION - GR
7	1	Plastic 250ml - with Nitric Acid		Nitric Acid	245.1 - Local Method	Water	ICE FORMATION - GR
7	2	Amber Glass 1 L - NaThiosulfate 8mL HCL		Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Jet Fuel 8 (JP8)	Water	1 out of 2 ICE FORMATION - GR
7	2	Amber Glass 1 L - NaThiosulfate 8mL HCL		Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Jet Fuel 5 (JP5)	Water	1 out of 2 ICE FORMATION - GR
7	2	Amber Glass 1 L - NaThiosulfate 8mL HCL		Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	
7	3	Voa Vial 40ml - Sodium Thio w/HCL-dropper		Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	1 out of 3 ICE FORMATION - GR

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

Shipping Summary

Client Samples: AIEA GULCH WELLS PUMP 1, AIEA GULCH WELLS PUMP 2, AIEA WELLS P___ (260), HALAWA SHAFT VIEW POOL, HALAWA WELLS UNITS 1 & 2, KAAMILO WELLS, MOANALUA WELLS

Sets	Bottles/Set	Bottle Type Description	Field Filtered	Preservative	Method	Matrix	Comments
7	3	Voa Vial 40ml Amber - Sodium thiosulfate		Sodium Thiosulfate	SUBCONTRACT - 8015 Ethanol	Water	
7	2	Amber Glass 1 liter - Sodium Thiosulfate		Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	2 out of 2 ICE FORMATION - GR
7	2	Amber Glass 1 liter - Sodium Thiosulfate		Sodium Thiosulfate	SUBCONTRACT - 625 Base Neutral LL (EAL) Physis	Water	1 out of 2 ICE FORMATION - GR
7	2	Amber Glass 1 liter - Sodium Thiosulfate		Sodium Thiosulfate	SUBCONTRACT - 625 Acid LL (EAL) Physis	Water	1 out of 2 ICE FORMATION - GR
7	3	Voa Vial 40ml Amber - Ascorbic & Maleic		Ascorbic Acid/Maleic	524.3_SIM_PREC - Low Level TCP/EDB/DBCP	Water	

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Shipping Summary

Client Samples: TB: AIEA GULCH WELLS PUMP 1, TB: AIEA GULCH WELLS PUMP 2, TB: AIEA WELLS PUMPS1&2(260), TB: HALAWA SHAFT VIEW POOL,
TB: HALAWA WELLS UNITS 1 & 2, TB: KAAMILO WELLS, TB: MOANALUA WELLS

Sets	Bottles/Set	Bottle Type Description	Field Filtered	Preservative	Method	Matrix	Comments
7	2	VOA Vial 40mL - NaThiosulfate/HCL		Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	
7	6	Voa Vial 40ml Amber - Ascor. Acid & HCL		Ascorbic Acid and Hydrochloric Acid	524.2_Pres_PREC - VOASDWA plus TICs + Acetone 524.2_SIM_PREC - TBA by 524.2 SIM	Water Water	RECEIVED 2 out of 6 - 6P
7	3	Voa Vial 40ml Amber - Sodium thiosulfate		Sodium Thiosulfate	504.1_PREC - Local Method	Water	RECEIVED 2 out of 3 - 6P
7	2	Voa Vial 40ml Amber - Ascorbic & Maleic		Ascorbic Acid/Maleic	524.3_SIM_PREC - Low Level TCP/EDB/DBCP	Water	

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-34925-1

Login Number: 34925
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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

