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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

380-33596-1

Eurofins Drinking Water Testing 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: 380-33596-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	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, high biased
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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.

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
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: 380-33596-1

Job ID: 380-33596-1

Laboratory: Eurofins Drinking Water Testing Pomona

Narrative

Job Narrative 380-33596-1

Comments

No additional comments.

Receipt

The samples were received on 1/9/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.9° C.

Receipt Exceptions

AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-33596-1) and TB AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-33596-2). Only received pages 2 and 3 of the COC. Only received the samples on these pages.

GC/MS Semi VOA

Method 525.2: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 380-29551 and analytical batch 380-29672 recovered outside upper control limits for the following analytes: Parathion, Malathion and Methoxychlor. These analytes were biased high in the LCS and LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 525.2: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 380-29551 and analytical batch 380-29672 recovered outside control limits for the following analytes: Dimethoate.

No additional analytical or quality issues were noted, other than those described above or 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 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 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-1

No Detections.

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

Lab Sample ID: 380-33596-2

No Detections.

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This Detection Summary does not include radiochemical test results.

Client Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-1

Date Collected: 01/04/23 11:00

Matrix: Drinking Water

Date Received: 01/09/23 09:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
2,4'-DDE	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
2,4'-DDT	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
2,4-Dinitrotoluene	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
2,6-Dinitrotoluene	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
4,4'-DDD	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
4,4'-DDE	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
4,4'-DDT	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Acenaphthene	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Acenaphthylene	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Acetochlor	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Alachlor	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
alpha-BHC	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
alpha-Chlordane	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Anthracene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 14:34	1
Atrazine	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Benz(a)anthracene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Benzo[a]pyrene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 14:34	1
Benzo[b]fluoranthene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 14:34	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Benzo[k]fluoranthene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 14:34	1
beta-BHC	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Bromacil	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Butachlor	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Butylbenzylphthalate	ND		0.49	ug/L		01/12/23 10:40	01/13/23 14:34	1
Caffeine	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Chlorobenzilate	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Chloroneb	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Chlorothalonil (Draconil, Bravo)	ND	^3+	0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Chlorpyrifos	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Chrysene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 14:34	1
delta-BHC	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Di(2-ethylhexyl)adipate	ND		0.59	ug/L		01/12/23 10:40	01/13/23 14:34	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		01/12/23 10:40	01/13/23 14:34	1
Diazinon (Qualitative)	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Diclorvos (DDVP)	ND	^3+	0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Dieldrin	ND		0.20	ug/L		01/12/23 10:40	01/13/23 14:34	1
Diethylphthalate	ND		0.49	ug/L		01/12/23 10:40	01/13/23 14:34	1
Dimethoate	ND	*1	0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Dimethylphthalate	ND		0.49	ug/L		01/12/23 10:40	01/13/23 14:34	1
Di-n-butyl phthalate	ND		0.98	ug/L		01/12/23 10:40	01/13/23 14:34	1
Di-n-octyl phthalate	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Endosulfan I (Alpha)	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Endosulfan II (Beta)	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Endosulfan sulfate	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Endrin	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Endrin aldehyde	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1

Client Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-1

Date Collected: 01/04/23 11:00

Matrix: Drinking Water

Date Received: 01/09/23 09:30

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Fluoranthene	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Fluorene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
gamma-Chlordane	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Heptachlor	ND		0.039	ug/L		01/12/23 10:40	01/13/23 14:34	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Hexachlorobenzene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Isophorone	ND		0.49	ug/L		01/12/23 10:40	01/13/23 14:34	1
Lindane	ND		0.039	ug/L		01/12/23 10:40	01/13/23 14:34	1
Malathion	ND	+	0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Methoxychlor	ND	+	0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Metolachlor	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Metribuzin	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Molinate	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Naphthalene	ND		0.29	ug/L		01/12/23 10:40	01/13/23 14:34	1
Parathion	ND	+	0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		01/12/23 10:40	01/13/23 14:34	1
Phenanthrene	ND		0.039	ug/L		01/12/23 10:40	01/13/23 14:34	1
Propachlor	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Pyrene	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Simazine	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Terbacil	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Terbutylazine	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1
Thiobencarb	ND		0.20	ug/L		01/12/23 10:40	01/13/23 14:34	1
trans-Nonachlor	ND		0.049	ug/L		01/12/23 10:40	01/13/23 14:34	1
Trifluralin	ND		0.098	ug/L		01/12/23 10:40	01/13/23 14:34	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L			N/A	01/12/23 10:40	01/13/23 14:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	98		70 - 130	01/12/23 10:40	01/13/23 14:34	1
Triphenylphosphate	107		70 - 130	01/12/23 10:40	01/13/23 14:34	1
Perylene-d12	98		70 - 130	01/12/23 10:40	01/13/23 14:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Acenaphthene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Anthracene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1

Eurofins Drinking Water Testing Pomona

Client Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-1

Date Collected: 01/04/23 11:00

Matrix: Drinking Water

Date Received: 01/09/23 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Biphenyl	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Chrysene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/10/23 00:00	01/26/23 04:07	1
Fluoranthene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Fluorene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Naphthalene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Perylene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Phenanthrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1
Pyrene	ND		0.005	0.001	µg/L		01/10/23 00:00	01/26/23 04:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	110		27 - 133	01/10/23 00:00	01/26/23 04:07	1
(d10-Phenanthrene)	124		43 - 129	01/10/23 00:00	01/26/23 04:07	1
(d12-Chrysene)	109		52 - 144	01/10/23 00:00	01/26/23 04:07	1
(d12-Perylene)	96		36 - 161	01/10/23 00:00	01/26/23 04:07	1
(d8-Naphthalene)	93		25 - 125	01/10/23 00:00	01/26/23 04:07	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			01/11/23 15:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	83		60 - 140		01/11/23 15:22	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	0.029		mg/L			01/19/23 17:46	1
JP5	ND	U	0.058		mg/L			01/19/23 17:46	1
JP8	ND	U	0.058		mg/L			01/19/23 17:46	1
MOTOR OIL	ND	U	0.058		mg/L			01/19/23 17:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	94		60 - 130		01/19/23 17:46	1
HEXACOSANE	113		60 - 130		01/19/23 17:46	1

Client Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-2

Date Collected: 01/04/23 11:00

Matrix: Water

Date Received: 01/09/23 09:30

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			01/11/23 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	77		60 - 140					01/11/23 17:10	1

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Action Limit Summary

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA
Atrazine	ND		ug/L	3	0.049	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	0.098	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.049	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	ND	*+	ug/L	40	0.098	525.2	Total/NA
Simazine	ND		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-33596-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-33596-1	AIEA GULCH WELLS PUMP 2 (	98	107	98

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)
380-33826-A-1-A MS	Matrix Spike	103	109	99
380-33826-A-1-B MSD	Matrix Spike Duplicate	105	108	96
LCS 380-29551/3-A	Lab Control Sample	103	103	95
LCS 380-29551/4-A	Lab Control Sample Dup	102	103	96
MB 380-29551/1-A	Method Blank	101	111	92
MRL 380-29551/2-A	Lab Control Sample	103	108	93

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

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
103243-B1	Method Blank	64	67	54	61	51
103243-BS1	Lab Control Sample	62	63	54	58	52
103243-BS2	Lab Control Sample Dup	59	62	52	54	50

Surrogate Legend
 (d10-Acenaphthene) = (d10-Acenaphthene)
 (d10-Phenanthrene) = (d10-Phenanthrene)
 CRY = (d12-Chrysene)
 NPT = (d8-Naphthalene)
 PRY = (d12-Perylene)

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-33596-1	AIEA GULCH WELLS PUMP 2 (	110	124	109	93	96

Surrogate Legend
 (d10-Acenaphthene) = (d10-Acenaphthene)
 (d10-Phenanthrene) = (d10-Phenanthrene)

Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-33596-1

Project/Site: RED-HILL

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-33596-1	AIEA GULCH WELLS PUMP 2 (	83

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
23VG39A04B	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)
23VG39A04C	LCD	109
23VG39A04L	Lab Control Sample	107

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-33596-2	TB AIEA GULCH WELLS PUMP	77

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
23A072-01M	Matrix Spike	109
23A072-01S	Matrix Spike Duplicate	109

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-33596-1

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)
380-33596-1	AIEA GULCH WELLS PUMP 2 (	94	113

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)
23DSA020WB	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)
23DSA020WC	LCD	91	104
23DSA020WL	Lab Control Sample	97	102
23J5A020WC	LCD	100	107
23J5A020WL	Lab Control Sample	89	108
23J8A020WC	LCD	109	108
23J8A020WL	Lab Control Sample	92	101

Surrogate Legend

BB = BROMOBENZENE
 HEXACOSANE = HEXACOSANE

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: MB 380-29551/1-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29551

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
2,4'-DDE	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
2,4'-DDT	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
2,4-Dinitrotoluene	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
2,6-Dinitrotoluene	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
4,4'-DDD	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
4,4'-DDE	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
4,4'-DDT	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Acenaphthene	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Acenaphthylene	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Acetochlor	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Alachlor	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
alpha-BHC	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
alpha-Chlordane	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Anthracene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 10:51	1
Atrazine	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Benz(a)anthracene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Benzo[a]pyrene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 10:51	1
Benzo[b]fluoranthene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 10:51	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Benzo[k]fluoranthene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 10:51	1
beta-BHC	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Bromacil	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Butachlor	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Butylbenzylphthalate	ND		0.50	ug/L		01/12/23 10:40	01/13/23 10:51	1
Caffeine	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Chlorobenzilate	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Chloroneb	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Chlorpyrifos	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Chrysene	ND		0.020	ug/L		01/12/23 10:40	01/13/23 10:51	1
delta-BHC	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		01/12/23 10:40	01/13/23 10:51	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		01/12/23 10:40	01/13/23 10:51	1
Diazinon (Qualitative)	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Diclorvos (DDVP)	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Dieldrin	ND		0.20	ug/L		01/12/23 10:40	01/13/23 10:51	1
Diethylphthalate	ND		0.50	ug/L		01/12/23 10:40	01/13/23 10:51	1
Dimethoate	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Dimethylphthalate	ND		0.50	ug/L		01/12/23 10:40	01/13/23 10:51	1
Di-n-butyl phthalate	ND		0.99	ug/L		01/12/23 10:40	01/13/23 10:51	1
Di-n-octyl phthalate	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Endosulfan I (Alpha)	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Endosulfan II (Beta)	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Endosulfan sulfate	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Endrin	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Endrin aldehyde	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: MB 380-29551/1-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29551

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Fluoranthene	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Fluorene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
gamma-Chlordane	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Heptachlor	ND		0.040	ug/L		01/12/23 10:40	01/13/23 10:51	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Hexachlorobenzene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Isophorone	ND		0.50	ug/L		01/12/23 10:40	01/13/23 10:51	1
Lindane	ND		0.040	ug/L		01/12/23 10:40	01/13/23 10:51	1
Malathion	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Methoxychlor	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Metolachlor	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Metribuzin	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Molinate	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Naphthalene	ND		0.30	ug/L		01/12/23 10:40	01/13/23 10:51	1
Parathion	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		01/12/23 10:40	01/13/23 10:51	1
Phenanthrene	ND		0.040	ug/L		01/12/23 10:40	01/13/23 10:51	1
Propachlor	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Pyrene	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Simazine	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Terbacil	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Terbutylazine	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1
Thiobencarb	ND		0.20	ug/L		01/12/23 10:40	01/13/23 10:51	1
trans-Nonachlor	ND		0.050	ug/L		01/12/23 10:40	01/13/23 10:51	1
Trifluralin	ND		0.099	ug/L		01/12/23 10:40	01/13/23 10:51	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.84	T J	ug/L		2.36	N/A	01/12/23 10:40	01/13/23 10:51	1
Unknown	0.812	T J	ug/L		7.34	N/A	01/12/23 10:40	01/13/23 10:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	101		70 - 130	01/12/23 10:40	01/13/23 10:51	1
Triphenylphosphate	111		70 - 130	01/12/23 10:40	01/13/23 10:51	1
Perylene-d12	92		70 - 130	01/12/23 10:40	01/13/23 10:51	1

Lab Sample ID: LCS 380-29551/3-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,4'-DDD	1.99	2.31		ug/L		116	70 - 130
2,4'-DDE	1.99	2.11		ug/L		106	70 - 130
2,4'-DDT	1.99	2.35		ug/L		118	70 - 130
2,4-Dinitrotoluene	1.99	2.25		ug/L		113	70 - 130

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: LCS 380-29551/3-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,6-Dinitrotoluene	1.99	2.22		ug/L		112	70 - 130
4,4'-DDD	1.99	2.33		ug/L		117	70 - 130
4,4'-DDE	1.99	2.31		ug/L		116	70 - 130
4,4'-DDT	1.99	2.51		ug/L		126	70 - 130
Acenaphthene	1.99	2.19		ug/L		110	70 - 130
Acenaphthylene	1.99	2.18		ug/L		110	70 - 130
Acetochlor	1.99	2.29		ug/L		115	70 - 130
Alachlor	1.99	2.37		ug/L		119	70 - 130
alpha-BHC	1.99	2.30		ug/L		116	70 - 130
alpha-Chlordane	1.99	2.20		ug/L		111	70 - 130
Anthracene	1.99	2.19		ug/L		110	70 - 130
Atrazine	1.99	2.43		ug/L		122	70 - 130
Benz(a)anthracene	1.99	2.27		ug/L		114	70 - 130
Benzo[a]pyrene	1.99	2.30		ug/L		116	70 - 130
Benzo[b]fluoranthene	1.99	2.46		ug/L		124	70 - 130
Benzo[g,h,i]perylene	1.99	2.44		ug/L		123	70 - 130
Benzo[k]fluoranthene	1.99	2.18		ug/L		110	70 - 130
beta-BHC	1.99	2.40		ug/L		121	70 - 130
Bromacil	1.99	2.58		ug/L		130	70 - 130
Butachlor	1.99	2.45		ug/L		123	70 - 130
Butylbenzylphthalate	1.99	2.47		ug/L		124	70 - 130
Caffeine	1.99	1.62		ug/L		81	45 - 137
Chlorobenzilate	1.99	2.50		ug/L		126	70 - 130
Chloroneb	1.99	2.15		ug/L		108	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	2.24		ug/L		112	70 - 130
Chlorpyrifos	1.99	2.38		ug/L		120	70 - 130
Chrysene	1.99	2.22		ug/L		111	70 - 130
delta-BHC	1.99	2.33		ug/L		117	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.37		ug/L		119	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	2.32		ug/L		117	70 - 130
Diazinon (Qualitative)	1.99	2.22		ug/L		111	15 - 132
Dibenz(a,h)anthracene	1.99	2.50		ug/L		126	70 - 130
Diclorvos (DDVP)	1.99	2.43		ug/L		122	70 - 130
Dieldrin	1.99	2.18		ug/L		110	70 - 130
Diethylphthalate	1.99	2.17		ug/L		109	70 - 130
Dimethoate	1.99	1.61		ug/L		81	35 - 100
Dimethylphthalate	1.99	2.19		ug/L		110	70 - 130
Di-n-butyl phthalate	3.98	4.45		ug/L		112	70 - 130
Di-n-octyl phthalate	1.99	2.20		ug/L		111	70 - 130
Endosulfan I (Alpha)	1.99	2.15		ug/L		108	70 - 130
Endosulfan II (Beta)	1.99	2.27		ug/L		114	70 - 130
Endosulfan sulfate	1.99	2.35		ug/L		118	70 - 130
Endrin	1.99	2.49		ug/L		125	70 - 130
Endrin aldehyde	1.99	2.12		ug/L		106	70 - 130
EPTC	1.99	2.42		ug/L		122	70 - 130
Fluoranthene	1.99	2.31		ug/L		116	70 - 130
Fluorene	1.99	2.17		ug/L		109	70 - 130
gamma-Chlordane	1.99	2.16		ug/L		109	70 - 130
Heptachlor	1.99	2.33		ug/L		117	70 - 130

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: LCS 380-29551/3-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor epoxide (isomer B)	1.99	2.27		ug/L		114	70 - 130
Hexachlorobenzene	1.99	2.02		ug/L		101	70 - 130
Hexachlorocyclopentadiene	1.99	2.36		ug/L		119	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.42		ug/L		122	70 - 130
Isophorone	1.99	2.18		ug/L		109	70 - 130
Lindane	1.99	2.42		ug/L		122	70 - 130
Malathion	1.99	2.66	*+	ug/L		134	70 - 130
Methoxychlor	1.99	2.75	*+	ug/L		139	70 - 130
Metolachlor	1.99	2.44		ug/L		123	70 - 130
Metribuzin	1.99	2.39		ug/L		120	70 - 130
Molinate	1.99	2.37		ug/L		119	70 - 130
Naphthalene	1.99	2.14		ug/L		108	70 - 130
Parathion	1.99	2.78	*+	ug/L		140	70 - 130
Pendimethalin (Penoxaline)	1.99	2.38		ug/L		120	70 - 130
Phenanthrene	1.99	2.21		ug/L		111	70 - 130
Propachlor	1.99	2.30		ug/L		116	70 - 130
Pyrene	1.99	2.35		ug/L		118	70 - 130
Simazine	1.99	2.51		ug/L		126	70 - 130
Terbacil	1.99	2.34		ug/L		118	70 - 130
Terbutylazine	1.99	2.45		ug/L		123	70 - 130
Thiobencarb	1.99	2.28		ug/L		115	70 - 130
trans-Nonachlor	1.99	2.18		ug/L		110	70 - 130
Trifluralin	1.99	2.30		ug/L		116	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	103		70 - 130
Triphenylphosphate	103		70 - 130
Perylene-d12	95		70 - 130

Lab Sample ID: LCSD 380-29551/4-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	2.27		ug/L		114	70 - 130	2	20
2,4'-DDE	1.99	2.09		ug/L		105	70 - 130	1	20
2,4'-DDT	1.99	2.30		ug/L		116	70 - 130	2	20
2,4-Dinitrotoluene	1.99	2.15		ug/L		108	70 - 130	5	20
2,6-Dinitrotoluene	1.99	2.10		ug/L		106	70 - 130	6	20
4,4'-DDD	1.99	2.28		ug/L		115	70 - 130	2	20
4,4'-DDE	1.99	2.28		ug/L		115	70 - 130	1	20
4,4'-DDT	1.99	2.47		ug/L		124	70 - 130	2	20
Acenaphthene	1.99	2.18		ug/L		110	70 - 130	1	20
Acenaphthylene	1.99	2.14		ug/L		108	70 - 130	2	20
Acetochlor	1.99	2.25		ug/L		114	70 - 130	2	20
Alachlor	1.99	2.38		ug/L		120	70 - 130	1	20
alpha-BHC	1.99	2.25		ug/L		113	70 - 130	2	20
alpha-Chlordane	1.99	2.20		ug/L		111	70 - 130	0	20

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: LCSD 380-29551/4-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	RPD
		Result	Qualifier				Limits		Limit
Anthracene	1.99	2.21		ug/L		111	70 - 130	1	20
Atrazine	1.99	2.34		ug/L		118	70 - 130	4	20
Benz(a)anthracene	1.99	2.23		ug/L		112	70 - 130	2	20
Benzo[a]pyrene	1.99	2.28		ug/L		115	70 - 130	1	20
Benzo[b]fluoranthene	1.99	2.42		ug/L		122	70 - 130	1	20
Benzo[g,h,i]perylene	1.99	2.52		ug/L		127	70 - 130	3	20
Benzo[k]fluoranthene	1.99	2.30		ug/L		116	70 - 130	5	20
beta-BHC	1.99	2.31		ug/L		116	70 - 130	4	20
Bromacil	1.99	2.55		ug/L		128	70 - 130	1	20
Butachlor	1.99	2.46		ug/L		124	70 - 130	1	20
Butylbenzylphthalate	1.99	2.40		ug/L		121	70 - 130	3	20
Caffeine	1.99	1.49		ug/L		75	45 - 137	8	20
Chlorobenzilate	1.99	2.49		ug/L		125	70 - 130	0	20
Chloroneb	1.99	2.10		ug/L		106	70 - 130	2	20
Chlorothalonil (Draconil, Bravo)	1.99	2.26		ug/L		114	70 - 130	1	20
Chlorpyrifos	1.99	2.39		ug/L		120	70 - 130	1	20
Chrysene	1.99	2.25		ug/L		113	70 - 130	2	20
delta-BHC	1.99	2.32		ug/L		117	70 - 130	0	20
Di(2-ethylhexyl)adipate	1.99	2.29		ug/L		115	70 - 130	3	20
Bis(2-ethylhexyl) phthalate	1.99	2.28		ug/L		115	70 - 130	2	20
Diazinon (Qualitative)	1.99	2.16		ug/L		109	15 - 132	3	20
Dibenz(a,h)anthracene	1.99	2.46		ug/L		124	70 - 130	2	20
Diclorvos (DDVP)	1.99	2.43		ug/L		123	70 - 130	0	20
Dieldrin	1.99	2.21		ug/L		111	70 - 130	1	20
Diethylphthalate	1.99	2.13		ug/L		107	70 - 130	2	20
Dimethoate	1.99	1.18	*1	ug/L		60	35 - 100	31	20
Dimethylphthalate	1.99	2.09		ug/L		105	70 - 130	5	20
Di-n-butyl phthalate	3.97	4.47		ug/L		113	70 - 130	0	20
Di-n-octyl phthalate	1.99	2.08		ug/L		105	70 - 130	6	20
Endosulfan I (Alpha)	1.99	2.13		ug/L		107	70 - 130	1	20
Endosulfan II (Beta)	1.99	2.25		ug/L		113	70 - 130	1	20
Endosulfan sulfate	1.99	2.29		ug/L		115	70 - 130	3	20
Endrin	1.99	2.53		ug/L		128	70 - 130	2	20
Endrin aldehyde	1.99	2.12		ug/L		107	70 - 130	0	20
EPTC	1.99	2.48		ug/L		125	70 - 130	2	20
Fluoranthene	1.99	2.27		ug/L		114	70 - 130	2	20
Fluorene	1.99	2.14		ug/L		108	70 - 130	2	20
gamma-Chlordane	1.99	2.15		ug/L		108	70 - 130	0	20
Heptachlor	1.99	2.31		ug/L		116	70 - 130	1	20
Heptachlor epoxide (isomer B)	1.99	2.27		ug/L		114	70 - 130	0	20
Hexachlorobenzene	1.99	1.98		ug/L		100	70 - 130	2	20
Hexachlorocyclopentadiene	1.99	2.39		ug/L		120	70 - 130	1	20
Indeno[1,2,3-cd]pyrene	1.99	2.45		ug/L		123	70 - 130	1	20
Isophorone	1.99	2.14		ug/L		108	70 - 130	2	20
Lindane	1.99	2.39		ug/L		120	70 - 130	1	20
Malathion	1.99	2.71	*+	ug/L		136	70 - 130	2	20
Methoxychlor	1.99	2.80	*+	ug/L		141	70 - 130	2	20
Metolachlor	1.99	2.42		ug/L		122	70 - 130	1	20
Metribuzin	1.99	2.38		ug/L		120	70 - 130	1	20

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: LCSD 380-29551/4-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Molinate	1.99	2.28		ug/L		115	70 - 130	4	20
Naphthalene	1.99	2.11		ug/L		106	70 - 130	1	20
Parathion	1.99	2.83	*+	ug/L		143	70 - 130	2	20
Pendimethalin (Penoxaline)	1.99	2.42		ug/L		122	70 - 130	2	20
Phenanthrene	1.99	2.21		ug/L		111	70 - 130	0	20
Propachlor	1.99	2.28		ug/L		115	70 - 130	1	20
Pyrene	1.99	2.33		ug/L		117	70 - 130	1	20
Simazine	1.99	2.44		ug/L		123	70 - 130	3	20
Terbacil	1.99	2.50		ug/L		126	70 - 130	6	20
Terbutylazine	1.99	2.41		ug/L		121	70 - 130	2	20
Thiobencarb	1.99	2.25		ug/L		113	70 - 130	1	20
trans-Nonachlor	1.99	2.19		ug/L		110	70 - 130	0	20
Trifluralin	1.99	2.29		ug/L		115	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Nitro-m-xylene	102		70 - 130
Triphenylphosphate	103		70 - 130
Perylene-d12	96		70 - 130

Lab Sample ID: MRL 380-29551/2-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0995	0.132		ug/L		133	50 - 150
2,4'-DDE	0.0995	0.114		ug/L		115	50 - 150
2,4'-DDT	0.0995	0.111		ug/L		111	50 - 150
2,4-Dinitrotoluene	0.0995	0.0978	J	ug/L		98	50 - 150
2,6-Dinitrotoluene	0.0995	0.116		ug/L		116	50 - 150
4,4'-DDD	0.0995	0.116		ug/L		116	50 - 150
4,4'-DDE	0.0995	0.107		ug/L		107	50 - 150
4,4'-DDT	0.0995	0.122		ug/L		123	50 - 150
Acenaphthene	0.0995	0.111		ug/L		112	50 - 150
Acenaphthylene	0.0995	0.100		ug/L		101	50 - 150
Acetochlor	0.0498	0.0467	J	ug/L		94	50 - 150
Alachlor	0.0498	0.0568		ug/L		114	50 - 150
alpha-BHC	0.0995	0.107		ug/L		108	50 - 150
alpha-Chlordane	0.0249	0.0300	J	ug/L		121	50 - 150
Anthracene	0.0199	0.0206		ug/L		103	50 - 150
Atrazine	0.0498	0.0537		ug/L		108	50 - 150
Benz(a)anthracene	0.0498	0.0528		ug/L		106	50 - 150
Benzo[a]pyrene	0.0199	0.0197	J	ug/L		99	50 - 150
Benzo[b]fluoranthene	0.0199	0.0225		ug/L		113	50 - 150
Benzo[g,h,i]perylene	0.0498	0.0458	J	ug/L		92	50 - 150
Benzo[k]fluoranthene	0.0199	0.0197	J	ug/L		99	50 - 150
beta-BHC	0.0995	0.112		ug/L		113	50 - 150
Bromacil	0.0995	0.119		ug/L		120	50 - 150
Butachlor	0.0498	0.0610		ug/L		123	50 - 150

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: MRL 380-29551/2-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butylbenzylphthalate	0.149	0.202	J	ug/L		136	50 - 150
Caffeine	0.0498	0.0391	J	ug/L		79	50 - 150
Chlorobenzilate	0.0995	0.123		ug/L		123	50 - 150
Chloroneb	0.0995	0.122		ug/L		123	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0995	0.173	^3+	ug/L		174	50 - 150
Chlorpyrifos	0.0498	0.0639		ug/L		129	50 - 150
Chrysene	0.0199	0.0245		ug/L		123	50 - 150
delta-BHC	0.0995	0.127		ug/L		128	50 - 150
Di(2-ethylhexyl)adipate	0.299	0.387	J	ug/L		130	50 - 150
Bis(2-ethylhexyl) phthalate	0.597	0.783		ug/L		131	50 - 150
Diazinon (Qualitative)	0.0995	0.104		ug/L		104	15 - 132
Dibenz(a,h)anthracene	0.0498	0.0463	J	ug/L		93	50 - 150
Diclorvos (DDVP)	0.0498	0.0851	^3+	ug/L		171	50 - 150
Dieldrin	0.0995	0.117	J	ug/L		118	50 - 150
Diethylphthalate	0.149	0.165	J	ug/L		110	50 - 150
Dimethoate	0.0995	0.0457	J	ug/L		46	35 - 100
Dimethylphthalate	0.299	0.327	J	ug/L		110	50 - 150
Di-n-butyl phthalate	0.299	0.380	J	ug/L		127	49 - 243
Di-n-octyl phthalate	0.0995	0.105		ug/L		106	50 - 150
Endosulfan I (Alpha)	0.0995	0.114		ug/L		115	50 - 150
Endosulfan II (Beta)	0.0995	0.134		ug/L		135	50 - 150
Endosulfan sulfate	0.0995	0.116		ug/L		117	50 - 150
Endrin	0.0995	0.140		ug/L		141	50 - 150
Endrin aldehyde	0.0995	0.101		ug/L		101	50 - 150
EPTC	0.0995	0.120		ug/L		121	50 - 150
Fluoranthene	0.0498	0.0616	J	ug/L		124	50 - 150
Fluorene	0.0498	0.0546		ug/L		110	50 - 150
gamma-Chlordane	0.0249	0.0302	J	ug/L		122	50 - 150
Heptachlor	0.0398	0.0483		ug/L		121	50 - 150
Heptachlor epoxide (isomer B)	0.0498	0.0564		ug/L		113	50 - 150
Hexachlorobenzene	0.0498	0.0496	J	ug/L		100	50 - 150
Hexachlorocyclopentadiene	0.0498	0.0552		ug/L		111	50 - 150
Indeno[1,2,3-cd]pyrene	0.0498	0.0453	J	ug/L		91	50 - 150
Isophorone	0.0995	0.107	J	ug/L		108	50 - 150
Lindane	0.0398	0.0420		ug/L		106	50 - 150
Malathion	0.0995	0.111		ug/L		111	50 - 150
Methoxychlor	0.0995	0.114		ug/L		114	50 - 150
Metolachlor	0.0498	0.0612		ug/L		123	50 - 150
Metribuzin	0.0498	0.0716		ug/L		144	50 - 150
Molinate	0.0995	0.119		ug/L		120	50 - 150
Naphthalene	0.0995	0.113	J	ug/L		114	50 - 150
Parathion	0.0995	0.135		ug/L		136	50 - 150
Pendimethalin (Penoxaline)	0.0995	0.0897	J	ug/L		90	50 - 150
Phenanthrene	0.0199	0.0238	J	ug/L		120	50 - 150
Propachlor	0.0498	0.0490	J	ug/L		98	50 - 150
Pyrene	0.0498	0.0597		ug/L		120	50 - 150
Simazine	0.0498	0.0574		ug/L		115	50 - 150
Terbacil	0.0995	0.128		ug/L		129	50 - 150
Terbutylazine	0.0995	0.108		ug/L		109	50 - 150

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: MRL 380-29551/2-A
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Thiobencarb	0.0995	0.130	J	ug/L		131	50 - 150
trans-Nonachlor	0.0249	0.0272	J	ug/L		109	50 - 150
Trifluralin	0.0995	0.0929	J	ug/L		93	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	103		70 - 130
Triphenylphosphate	108		70 - 130
Perylene-d12	93		70 - 130

Lab Sample ID: 380-33826-A-1-A MS
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		2.07	2.38		ug/L		115	70 - 130
2,4'-DDE	ND		2.07	2.15		ug/L		104	70 - 130
2,4'-DDT	ND		2.07	2.37		ug/L		115	70 - 130
2,4-Dinitrotoluene	ND		2.07	2.51		ug/L		121	70 - 130
2,6-Dinitrotoluene	ND		2.07	2.42		ug/L		117	70 - 130
4,4'-DDD	ND		2.07	2.39		ug/L		115	70 - 130
4,4'-DDE	ND		2.07	2.33		ug/L		113	70 - 130
4,4'-DDT	ND		2.07	2.55		ug/L		123	70 - 130
Acenaphthene	ND		2.07	2.26		ug/L		109	70 - 130
Acenaphthylene	ND		2.07	2.31		ug/L		112	70 - 130
Acetochlor	ND		2.07	2.39		ug/L		116	70 - 130
Alachlor	ND		2.07	2.50		ug/L		121	70 - 130
alpha-BHC	ND		2.07	2.45		ug/L		119	70 - 130
alpha-Chlordane	ND		2.07	2.25		ug/L		109	70 - 130
Anthracene	ND	F2	2.07	2.25		ug/L		109	70 - 130
Atrazine	ND		2.07	2.54		ug/L		123	70 - 130
Benz(a)anthracene	ND		2.07	2.42		ug/L		117	70 - 130
Benzo[a]pyrene	ND		2.07	2.46		ug/L		119	70 - 130
Benzo[b]fluoranthene	ND		2.07	2.52		ug/L		122	70 - 130
Benzo[g,h,i]perylene	ND		2.07	2.56		ug/L		124	70 - 130
Benzo[k]fluoranthene	ND		2.07	2.48		ug/L		120	70 - 130
beta-BHC	ND		2.07	2.50		ug/L		121	70 - 130
Bromacil	ND	F1	2.07	3.00	F1	ug/L		145	70 - 130
Butachlor	ND		2.07	2.59		ug/L		125	70 - 130
Butylbenzylphthalate	ND		2.07	2.64		ug/L		120	70 - 130
Caffeine	ND		2.07	1.82		ug/L		88	46 - 144
Chlorobenzilate	ND	F1	2.07	2.74	F1	ug/L		133	70 - 130
Chloroneb	ND		2.07	2.24		ug/L		109	70 - 130
Chlorothalonil (Draconil, Bravo)	ND	^3+	2.07	2.33		ug/L		113	70 - 130
Chlorpyrifos	ND		2.07	2.48		ug/L		120	70 - 130
Chrysene	ND		2.07	2.32		ug/L		112	70 - 130
delta-BHC	ND		2.07	2.42		ug/L		117	70 - 130
Di(2-ethylhexyl)adipate	ND		2.07	2.42		ug/L		117	70 - 130
Bis(2-ethylhexyl) phthalate	ND		2.07	2.22		ug/L		108	70 - 130

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33826-A-1-A MS
Matrix: Water
Analysis Batch: 29672

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29551

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Diazinon (Qualitative)	ND		2.07	2.39		ug/L		116	15 - 132
Dibenz(a,h)anthracene	ND		2.07	2.50		ug/L		121	70 - 130
Diclorvos (DDVP)	ND	^3+	2.07	2.66		ug/L		129	70 - 130
Dieldrin	ND		2.07	2.27		ug/L		110	70 - 130
Diethylphthalate	ND		2.07	2.38		ug/L		115	70 - 130
Dimethoate	ND	*1	2.07	1.89		ug/L		91	34 - 111
Dimethylphthalate	ND		2.07	2.30		ug/L		111	70 - 130
Di-n-butyl phthalate	ND		4.13	4.79		ug/L		116	70 - 130
Di-n-octyl phthalate	ND		2.07	2.10		ug/L		102	70 - 130
Endosulfan I (Alpha)	ND		2.07	2.20		ug/L		106	70 - 130
Endosulfan II (Beta)	ND		2.07	2.41		ug/L		117	70 - 130
Endosulfan sulfate	ND		2.07	2.44		ug/L		118	70 - 130
Endrin	ND		2.07	2.68		ug/L		130	70 - 130
Endrin aldehyde	ND		2.07	1.98		ug/L		96	70 - 130
EPTC	ND		2.07	2.59		ug/L		125	70 - 130
Fluoranthene	ND		2.07	2.37		ug/L		115	70 - 130
Fluorene	ND		2.07	2.28		ug/L		110	70 - 130
gamma-Chlordane	ND		2.07	2.25		ug/L		109	70 - 130
Heptachlor	ND		2.07	2.38		ug/L		115	70 - 130
Heptachlor epoxide (isomer B)	ND		2.07	2.35		ug/L		114	70 - 130
Hexachlorobenzene	ND		2.07	2.15		ug/L		104	70 - 130
Hexachlorocyclopentadiene	ND		2.07	2.39		ug/L		116	70 - 130
Indeno[1,2,3-cd]pyrene	ND		2.07	2.59		ug/L		125	70 - 130
Isophorone	ND		2.07	2.24		ug/L		108	70 - 130
Lindane	ND		2.07	2.58		ug/L		125	70 - 130
Malathion	ND	*+ F1	2.07	2.85	F1	ug/L		138	70 - 130
Methoxychlor	ND	*+ F1	2.07	2.95	F1	ug/L		143	70 - 130
Metolachlor	ND		2.07	2.58		ug/L		125	70 - 130
Metribuzin	ND		2.07	2.63		ug/L		127	70 - 130
Molinate	ND		2.07	2.56		ug/L		124	70 - 130
Naphthalene	ND		2.07	2.21		ug/L		107	70 - 130
Parathion	ND	*+ F1	2.07	2.90	F1	ug/L		140	70 - 130
Pendimethalin (Penoxaline)	ND		2.07	2.55		ug/L		123	70 - 130
Phenanthrene	ND		2.07	2.27		ug/L		110	70 - 130
Propachlor	ND		2.07	2.53		ug/L		123	70 - 130
Pyrene	ND		2.07	2.43		ug/L		117	70 - 130
Simazine	ND	F1	2.07	2.72	F1	ug/L		131	70 - 130
Terbacil	ND		2.07	2.62		ug/L		127	70 - 130
Terbutylazine	ND		2.07	2.55		ug/L		123	70 - 130
Thiobencarb	ND		2.07	2.39		ug/L		116	70 - 130
trans-Nonachlor	ND		2.07	2.22		ug/L		108	70 - 130
Trifluralin	ND		2.07	2.52		ug/L		122	70 - 130
		MS MS							
Surrogate		%Recovery	Qualifier	Limits					
2-Nitro-m-xylene		103		70 - 130					
Triphenylphosphate		109		70 - 130					
Perylene-d12		99		70 - 130					

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33826-A-1-B MSD

Matrix: Water

Analysis Batch: 29672

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 29551

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
2,4'-DDD	ND		2.09	2.40		ug/L		115	70 - 130	1	20
2,4'-DDE	ND		2.09	2.17		ug/L		104	70 - 130	1	20
2,4'-DDT	ND		2.09	2.42		ug/L		116	70 - 130	2	20
2,4-Dinitrotoluene	ND		2.09	2.51		ug/L		120	70 - 130	0	20
2,6-Dinitrotoluene	ND		2.09	2.42		ug/L		116	70 - 130	0	20
4,4'-DDD	ND		2.09	2.45		ug/L		117	70 - 130	3	20
4,4'-DDE	ND		2.09	2.37		ug/L		113	70 - 130	1	20
4,4'-DDT	ND		2.09	2.59		ug/L		124	70 - 130	2	20
Acenaphthene	ND		2.09	2.28		ug/L		109	70 - 130	1	20
Acenaphthylene	ND		2.09	2.30		ug/L		110	70 - 130	1	20
Acetochlor	ND		2.09	2.39		ug/L		115	70 - 130	0	20
Alachlor	ND		2.09	2.51		ug/L		120	70 - 130	0	20
alpha-BHC	ND		2.09	2.43		ug/L		116	70 - 130	1	20
alpha-Chlordane	ND		2.09	2.30		ug/L		110	70 - 130	2	20
Anthracene	ND	F2	2.09	1.49	F2	ug/L		72	70 - 130	41	20
Atrazine	ND		2.09	2.55		ug/L		122	70 - 130	0	20
Benz(a)anthracene	ND		2.09	2.25		ug/L		108	70 - 130	7	20
Benzo[a]pyrene	ND		2.09	2.05		ug/L		98	70 - 130	18	20
Benzo[b]fluoranthene	ND		2.09	2.55		ug/L		122	70 - 130	1	20
Benzo[g,h,i]perylene	ND		2.09	2.61		ug/L		125	70 - 130	2	20
Benzo[k]fluoranthene	ND		2.09	2.41		ug/L		116	70 - 130	3	20
beta-BHC	ND		2.09	2.50		ug/L		120	70 - 130	0	20
Bromacil	ND	F1	2.09	2.97	F1	ug/L		142	70 - 130	1	20
Butachlor	ND		2.09	2.63		ug/L		126	70 - 130	2	20
Butylbenzylphthalate	ND		2.09	2.64		ug/L		119	70 - 130	0	20
Caffeine	ND		2.09	1.82		ug/L		87	46 - 144	0	20
Chlorobenzilate	ND	F1	2.09	2.83	F1	ug/L		135	70 - 130	3	20
Chloroneb	ND		2.09	2.22		ug/L		106	70 - 130	1	20
Chlorothalonil (Draconil, Bravo)	ND	^3+	2.09	2.39		ug/L		114	70 - 130	2	20
Chlorpyrifos	ND		2.09	2.51		ug/L		120	70 - 130	1	20
Chrysene	ND		2.09	2.37		ug/L		114	70 - 130	2	20
delta-BHC	ND		2.09	2.46		ug/L		118	70 - 130	2	20
Di(2-ethylhexyl)adipate	ND		2.09	2.42		ug/L		116	70 - 130	0	20
Bis(2-ethylhexyl) phthalate	ND		2.09	2.29		ug/L		110	70 - 130	3	20
Diazinon (Qualitative)	ND		2.09	2.39		ug/L		114	15 - 132	0	20
Dibenz(a,h)anthracene	ND		2.09	2.60		ug/L		124	70 - 130	4	20
Diclorvos (DDVP)	ND	^3+	2.09	2.60		ug/L		125	70 - 130	2	20
Dieldrin	ND		2.09	2.31		ug/L		111	70 - 130	2	20
Diethylphthalate	ND		2.09	2.38		ug/L		114	70 - 130	0	20
Dimethoate	ND	*1	2.09	1.86		ug/L		89	34 - 111	1	20
Dimethylphthalate	ND		2.09	2.26		ug/L		109	70 - 130	2	20
Di-n-butyl phthalate	ND		4.17	4.72		ug/L		113	70 - 130	2	20
Di-n-octyl phthalate	ND		2.09	2.18		ug/L		105	70 - 130	4	20
Endosulfan I (Alpha)	ND		2.09	2.25		ug/L		108	70 - 130	2	20
Endosulfan II (Beta)	ND		2.09	2.47		ug/L		119	70 - 130	3	20
Endosulfan sulfate	ND		2.09	2.50		ug/L		120	70 - 130	3	20
Endrin	ND		2.09	2.65		ug/L		127	70 - 130	1	20
Endrin aldehyde	ND		2.09	2.04		ug/L		98	70 - 130	3	20

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33826-A-1-B MSD

Matrix: Water

Analysis Batch: 29672

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 29551

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits			Limit
EPTC	ND		2.09	2.58		ug/L		124	70 - 130	0	20
Fluoranthene	ND		2.09	2.41		ug/L		115	70 - 130	2	20
Fluorene	ND		2.09	2.28		ug/L		110	70 - 130	0	20
gamma-Chlordane	ND		2.09	2.26		ug/L		108	70 - 130	0	20
Heptachlor	ND		2.09	2.45		ug/L		118	70 - 130	3	20
Heptachlor epoxide (isomer B)	ND		2.09	2.40		ug/L		115	70 - 130	2	20
Hexachlorobenzene	ND		2.09	2.14		ug/L		103	70 - 130	0	20
Hexachlorocyclopentadiene	ND		2.09	2.47		ug/L		119	70 - 130	3	20
Indeno[1,2,3-cd]pyrene	ND		2.09	2.55		ug/L		122	70 - 130	2	20
Isophorone	ND		2.09	2.27		ug/L		109	70 - 130	2	20
Lindane	ND		2.09	2.62		ug/L		125	70 - 130	1	20
Malathion	ND	*+ F1	2.09	2.90	F1	ug/L		139	70 - 130	1	20
Methoxychlor	ND	*+ F1	2.09	3.00	F1	ug/L		144	70 - 130	1	20
Metolachlor	ND		2.09	2.60		ug/L		125	70 - 130	1	20
Metribuzin	ND		2.09	2.63		ug/L		126	70 - 130	0	20
Molinate	ND		2.09	2.59		ug/L		124	70 - 130	1	20
Naphthalene	ND		2.09	2.25		ug/L		108	70 - 130	2	20
Parathion	ND	*+ F1	2.09	2.99	F1	ug/L		143	70 - 130	3	20
Pendimethalin (Penoxaline)	ND		2.09	2.60		ug/L		124	70 - 130	2	20
Phenanthrene	ND		2.09	2.32		ug/L		111	70 - 130	2	20
Propachlor	ND		2.09	2.53		ug/L		121	70 - 130	0	20
Pyrene	ND		2.09	2.45		ug/L		117	70 - 130	1	20
Simazine	ND	F1	2.09	2.68		ug/L		128	70 - 130	1	20
Terbacil	ND		2.09	2.57		ug/L		123	70 - 130	2	20
Terbutylazine	ND		2.09	2.54		ug/L		122	70 - 130	0	20
Thiobencarb	ND		2.09	2.42		ug/L		116	70 - 130	1	20
trans-Nonachlor	ND		2.09	2.25		ug/L		108	70 - 130	1	20
Trifluralin	ND		2.09	2.52		ug/L		121	70 - 130	0	20
		MSD	MSD								
Surrogate		%Recovery	Qualifier		Limits						
2-Nitro-m-xylene		105			70 - 130						
Triphenylphosphate		108			70 - 130						
Perylene-d12		96			70 - 130						

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

Lab Sample ID: 103243-B1

Matrix: BlankMatrix

Analysis Batch: O-40096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: O-40096_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Acenaphthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Acenaphthylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 103243-B1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benz[a]anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Biphenyl	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Chrysene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Dibenzothiophene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		01/09/23 00:00	01/25/23 17:49	1
Fluoranthene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Fluorene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Naphthalene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Perylene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Phenanthrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1
Pyrene	ND		0.005	0.001	µg/L		01/09/23 00:00	01/25/23 17:49	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	64		27 - 133	01/09/23 00:00	01/25/23 17:49	1
(d10-Phenanthrene)	67		43 - 129	01/09/23 00:00	01/25/23 17:49	1
(d12-Chrysene)	54		52 - 144	01/09/23 00:00	01/25/23 17:49	1
(d12-Perylene)	51		36 - 161	01/09/23 00:00	01/25/23 17:49	1
(d8-Naphthalene)	61		25 - 125	01/09/23 00:00	01/25/23 17:49	1

Lab Sample ID: 103243-BS1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.636		µg/L		127	31 - 128
1-Methylphenanthrene	0.5	0.549		µg/L		110	66 - 127
2,3,5-Trimethylnaphthalene	1	0.651		µg/L		65	55 - 122
2,6-Dimethylnaphthalene	0.5	0.598		µg/L		120	48 - 120
2-Methylnaphthalene	1.5	1.95		µg/L		130	47 - 130
Acenaphthene	1.5	1.96		µg/L		131	53 - 131
Acenaphthylene	1.5	2.04		µg/L		136	43 - 140
Anthracene	1.5	2.01		µg/L		134	58 - 135
Benz[a]anthracene	1.5	1.62		µg/L		108	55 - 145
Benzo[a]pyrene	1.5	1.6		µg/L		107	51 - 143
Benzo[b]fluoranthene	1.5	1.74		µg/L		116	46 - 165
Benzo[e]pyrene	0.5	0.505		µg/L		101	42 - 152
Benzo[g,h,i]perylene	1.5	1.71		µg/L		114	63 - 133
Benzo[k]fluoranthene	1.5	1.7		µg/L		113	56 - 145
Biphenyl	1	0.693		µg/L		69	56 - 119
Chrysene	1.5	1.61		µg/L		107	56 - 141

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 103243-BS1
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dibenz[a,h]anthracene	1.5	1.88		µg/L		125	55 - 150
Dibenzo[a,l]pyrene	0.5	0.424		µg/L		85	50 - 150
Dibenzothiophene	0.5	0.589		µg/L		118	46 - 126
Disalicylidenepropanediamine	50	39.7		µg/L		79	50 - 150
Fluoranthene	1.5	2.07		µg/L		138	60 - 146
Fluorene	2	2.08		µg/L		104	58 - 131
Indeno[1,2,3-cd]pyrene	1.5	1.8		µg/L		120	50 - 151
Naphthalene	1.5	1.85		µg/L		123	41 - 126
Perylene	0.5	0.515		µg/L		103	48 - 141
Phenanthrene	2	2.05		µg/L		102	67 - 127
Pyrene	1.5	1.98		µg/L		132	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	62		27 - 133
(d10-Phenanthrene)	63		43 - 129
(d12-Chrysene)	54		52 - 144
(d12-Perylene)	52		36 - 161
(d8-Naphthalene)	58		25 - 125

Lab Sample ID: 103243-BS2
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.603		µg/L		121	31 - 128	5	30
1-Methylphenanthrene	0.5	0.537		µg/L		107	66 - 127	3	30
2,3,5-Trimethylnaphthalene	1	0.603		µg/L		60	55 - 122	8	30
2,6-Dimethylnaphthalene	0.5	0.589		µg/L		118	48 - 120	2	30
2-Methylnaphthalene	1.5	1.82		µg/L		121	47 - 130	7	30
Acenaphthene	1.5	1.88		µg/L		125	53 - 131	5	30
Acenaphthylene	1.5	1.95		µg/L		130	43 - 140	5	30
Anthracene	1.5	1.94		µg/L		129	58 - 135	4	30
Benz[a]anthracene	1.5	1.53		µg/L		102	55 - 145	6	30
Benzo[a]pyrene	1.5	1.53		µg/L		102	51 - 143	5	30
Benzo[b]fluoranthene	1.5	1.66		µg/L		111	46 - 165	4	30
Benzo[e]pyrene	0.5	0.497		µg/L		99	42 - 152	2	30
Benzo[g,h,i]perylene	1.5	1.64		µg/L		109	63 - 133	4	30
Benzo[k]fluoranthene	1.5	1.59		µg/L		106	56 - 145	6	30
Biphenyl	1	0.655		µg/L		65	56 - 119	4	30
Chrysene	1.5	1.53		µg/L		102	56 - 141	5	30
Dibenz[a,h]anthracene	1.5	1.8		µg/L		120	55 - 150	4	30
Dibenzo[a,l]pyrene	0.5	0.426		µg/L		85	50 - 150	0	30
Dibenzothiophene	0.5	0.566		µg/L		113	46 - 126	4	30
Disalicylidenepropanediamine	50	46		µg/L		92	50 - 150	15	30
Fluoranthene	1.5	2.05		µg/L		137	60 - 146	1	30
Fluorene	2	1.99		µg/L		100	58 - 131	4	30
Indeno[1,2,3-cd]pyrene	1.5	1.76		µg/L		117	50 - 151	3	30
Naphthalene	1.5	1.72		µg/L		115	41 - 126	7	30

Eurofins Drinking Water Testing Pomona

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 103243-BS2
Matrix: BlankMatrix
Analysis Batch: O-40096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40096_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Perylene	0.5	0.498		µg/L		100	48 - 141	3	30	
Phenanthrene	2	1.98		µg/L		99	67 - 127	3	30	
Pyrene	1.5	1.95		µg/L		130	54 - 156	2	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	59		27 - 133
(d10-Phenanthrene)	62		43 - 129
(d12-Chrysene)	52		52 - 144
(d12-Perylene)	50		36 - 161
(d8-Naphthalene)	54		25 - 125

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

Lab Sample ID: 23VG39A04B
Matrix: WATER
Analysis Batch: 23VG39A04

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
GASOLINE	ND	U	0.02		mg/L			01/11/23 13:33	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOFLUOROBENZENE					01/11/23 13:33	1

Lab Sample ID: 23VG39A04L
Matrix: WATER
Analysis Batch: 23VG39A04

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
GASOLINE	0.5	0.469		mg/L		94	60 - 130	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOFLUOROBENZENE	107		70 - 130

Lab Sample ID: 23A072-01M
Matrix: WATER
Analysis Batch: 23VG39A04

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	RPD
GASOLINE	ND		0.5	0.474		mg/L		95	50 - 130	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
BROMOFLUOROBENZENE	109		60 - 140

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 23A072-01S
Matrix: WATER
Analysis Batch: 23VG39A04

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
GASOLINE	ND		0.5	0.472		mg/L		94	50 - 130	0	30
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
BROMOFLUOROBENZENE	109		60 - 140								

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

Lab Sample ID: 23DSA020WB
Matrix: WATER
Analysis Batch: 23DSA020W

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			01/19/23 15:37	1
JP5	ND	U	0.05		mg/L			01/19/23 15:37	1
JP8	ND	U	0.05		mg/L			01/19/23 15:37	1
MOTOR OIL	ND	U	0.05		mg/L			01/19/23 15:37	1
Surrogate	%Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac	
BROMOBENZENE							01/19/23 15:37	1	
HEXACOSANE							01/19/23 15:37	1	

Lab Sample ID: 23DSA020WL
Matrix: WATER
Analysis Batch: 23DSA020W

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	2.33		mg/L		93	50 - 130
Surrogate	%Recovery	LCS Qualifier	LCS Limits				
BROMOBENZENE	97		60 - 130				
HEXACOSANE	102		60 - 130				

Lab Sample ID: 23J5A020WL
Matrix: WATER
Analysis Batch: 23DSA020W

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	2.15		mg/L		86	30 - 160
Surrogate	%Recovery	LCS Qualifier	LCS Limits				
BROMOBENZENE	89		60 - 130				
HEXACOSANE	108		60 - 130				

QC Sample Results

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

Job ID: 380-33596-1

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

Lab Sample ID: 23J8A020WL
Matrix: WATER
Analysis Batch: 23DSA020W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP8	2.5	1.83		mg/L		73	30 - 160
Surrogate		LCS	LCS				
		%Recovery	Qualifier				Limits
BROMOBENZENE		92					60 - 130
HEXACOSANE		101					60 - 130

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QC Association Summary

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

Job ID: 380-33596-1

GC/MS Semi VOA

Prep Batch: 29551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	
MB 380-29551/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-29551/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-29551/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-29551/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-33826-A-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-33826-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	525.2	

Analysis Batch: 29672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	525.2	29551
MB 380-29551/1-A	Method Blank	Total/NA	Water	525.2	29551
LCS 380-29551/3-A	Lab Control Sample	Total/NA	Water	525.2	29551
LCSD 380-29551/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	29551
MRL 380-29551/2-A	Lab Control Sample	Total/NA	Water	525.2	29551
380-33826-A-1-A MS	Matrix Spike	Total/NA	Water	525.2	29551
380-33826-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	525.2	29551

Subcontract

Analysis Batch: O-40096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40096_P
103243-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40096_P
103243-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40096_P
103243-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40096_P

Analysis Batch: 23DSA020W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSA020WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSA020WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5A020WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8A020WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VG39A04

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

QC Association Summary

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

Job ID: 380-33596-1

Subcontract (Continued)

Analysis Batch: 23VG39A04 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-2	TB AIEA GULCH WELLS PUMP 2 (331-202-TP0	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39A04B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39A04L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23A072-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23A072-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40096_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Total/NA	Drinking Water	EPA_625	
103243-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
103243-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
103243-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-33596-1

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

Lab Sample ID: 380-33596-1

Date Collected: 01/04/23 11:00

Matrix: Drinking Water

Date Received: 01/09/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			29551	N8NE	EA MON	01/12/23 10:40
Total/NA	Analysis	525.2		1	29672	Q8LA	EA MON	01/13/23 14:34
Total/NA	Prep	EPA_625		1	O-40096_P			01/10/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40096	YC		01/26/23 04:07
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39A04	SCerva		01/11/23 15:22
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSA020W	SDees		01/19/23 17:46

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

Lab Sample ID: 380-33596-2

Date Collected: 01/04/23 11:00

Matrix: Water

Date Received: 01/09/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39A04	SCerva		01/11/23 17:10

Laboratory References:

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

EA MON = Eurofins Drinking Water Testing 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: 380-33596-1

Laboratory: Eurofins Drinking Water Testing 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	02-28-23

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
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
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

Accreditation/Certification Summary

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

Job ID: 380-33596-1

Laboratory: Eurofins Drinking Water Testing 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	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



Method Summary

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

Job ID: 380-33596-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA MON
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
525.2	Extraction of Semivolatile Compounds	EPA	EA MON

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

EA MON = Eurofins Drinking Water Testing 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: 380-33596-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-33596-1	AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Drinking Water	01/04/23 11:00	01/09/23 09:30
380-33596-2	TB AIEA GULCH WELLS PUMP 2 (331-202-TP072)	Water	01/04/23 11:00	01/09/23 09:30

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Date: 02-01-2023
EMAX Batch No.: 23A072

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-33596

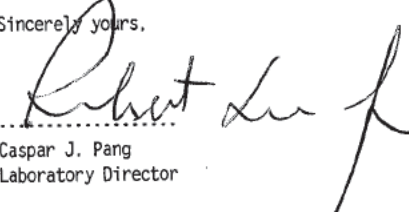
Enclosed is the Laboratory report for samples received on 01/10/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-33596-1	A072-01	01/04/23	WATER	TPH GASOLINE TPH
380-33596-2	A072-02	01/04/23	WATER	TPH GASOLINE
380-33596-1MS	A072-01M	01/04/23	WATER	TPH GASOLINE
380-33596-1MSD	A072-01S	01/04/23	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

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

Chain of Custody Record



Environment Testing



23A072

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	GOC No:
EMAX Laboratories Inc		Arada, Rachelle	380-32848.1	380-32848.1	380-32848.1
Address: 3051 Fujita Street, Torrance, CA, 90505		E-Mail: Rachelle.Arada@et.eurofins.com	State of Origin: Hawaii	Page: Page 1 of 1	
Phone: PO #: WO #:		Accreditations Required (See note): State - Hawaii	Job #:	380-33596-1	
Project Name: RED-HILL		Due Date Requested: 1/23/2023	Preservation Codes:		
Site: Honolulu BWS Sites		TAT Requested (days):	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NH ₄ SO ₄ F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Swastich, G=water)
AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-33596-1)		1/4/23	11:00 Hawaiian	Water	Water
TB AIEA GULCH WELLS PUMP 2 (331-202-TP072) (380-33596-1)		1/4/23	11:00 Hawaiian	Water	Water
Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)	Form MS/MSD (Yes or No)	SUB (8015 Gas (Furgable) LL (EAL)) 8015 Gas	SUB (8015 LL DROM/R0J/P5/JP8) 8015 LL DROM/R0J/P5/JP8
Total Number of Containers		6	6	6	6
Special Instructions/Note:		See Attached Instructions			
Special Instructions/Note:		See Attached Instructions			

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification

Unconfirmed Return To Client Disposal By Lab Archive For Months

Special Instructions/QC Requirements:

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Date: 1-10-23 09:30
 Relinquished by: *Chad Brooks* Company: *EEA*
 Relinquished by: 01/10/23 16:55
 Relinquished by: 01/10/23 16:55 Company: *EMAX*

Cooler Temperature(s) °C and Other Remarks: Temp. 5-2/5.0

REPORT ID: 23A072





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 type="checkbox"/> Client Delivery	Airbill / Tracking Number	ECN <u>23A072</u> Recipient <u>Jocelyne Sais-Rames</u> Date <u>01/10/23</u> Time <u>16:55</u>
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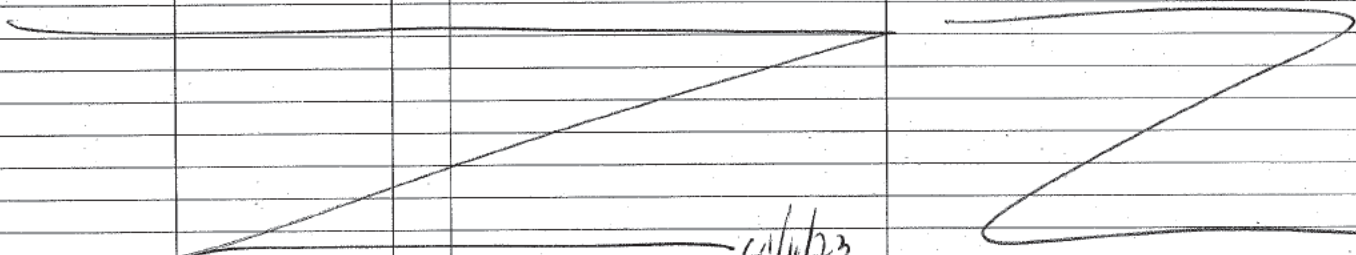
COC INSPECTION

<input checked="" type="checkbox"/> Client Name	<input type="checkbox"/> Client PM/FC	<input type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input type="checkbox"/> Matrix
<input 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>15.2/3.0C</u>	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
Thermometer: <u>A - S/N 221052768</u>	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
		<u>B - S/N 210760237</u>	<input type="checkbox"/> Cooler 9 _____ °C
			<input type="checkbox"/> Cooler 10 _____ °C
			C - S/N _____ D - S/N _____
Comments: <input type="checkbox"/> Temperature is out of range. PM was informed IMMEDIATELY.			
Note:			

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID/Information	Corrective Action
1	5,6	D1	JPS/JPS not indicated	R8
2	7,8	D22	2nd Date/Time reads: 12/5/22 at 8:00	R1
				

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. NB 1/12/23

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

- LEGEND:**
- | | | |
|---|---|--|
| <p>Code Description-Sample Management</p> <p>D1 Analysis is not indicated in <u>label</u></p> <p>D2 Analysis mismatch COC vs label</p> <p>D3 Sample ID mismatch COC vs label</p> <p>D4 Sample ID is not indicated in _____</p> <p>D5 Container -[improper] [leaking] [broken]</p> <p>D6 Date/Time is not indicated in _____</p> <p>D7 Date/Time mismatch COC vs label</p> <p>D8 Sample listed in COC is not received</p> <p>D9 Sample received is not listed in COC</p> <p>D10 No initial/date on corrections in COC/label</p> <p>D11 Container count mismatch COC vs received</p> <p>D12 Container size mismatch COC vs received</p> | <p>Code Description-Sample Management</p> <p>D13 Out of Holding Time</p> <p>D14 Bubble is >6mm</p> <p>D15 No trip blank in cooler</p> <p>D16 Preservation not indicated in _____</p> <p>D17 Preservation mismatch COC vs label</p> <p>D18 Insufficient chemical preservative</p> <p>D19 Insufficient Sample</p> <p>D20 No filtration info for dissolved analysis</p> <p>D21 No sample for moisture determination</p> <p>D22 <u>2nd date/time is incorrect on label</u></p> <p>D23 _____</p> <p>D24 _____</p> | <p><input type="checkbox"/> Continue to next page.</p> <p>Code Description-Sample Management</p> <p>R1 Proceed as indicated in <input type="checkbox"/> COC <input type="checkbox"/> Label</p> <p>R2 Refer to attached instruction</p> <p>R3 Cancel the analysis</p> <p>R4 Use vial with smallest bubble first</p> <p>R5 Log-in with latest sampling date and time+1 min</p> <p>R6 Adjust pH as necessary</p> <p>R7 Filter and preserved as necessary</p> <p>R8 <u>Deformed client</u></p> <p>R9 _____</p> <p>R10 _____</p> <p>R11 _____</p> <p>R12 _____</p> |
|---|---|--|

REVIEWS:

Sample Labeling Maria Cepeda SRF Cepeda
 Date 01/11/23 Date 1/11/23

REPORT ID: 23A072 PM MB
Date 1/12/23
Page 3 of 32
3/2/2023

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

380-33596

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

SDG#: 23A072

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CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-33596

SDG : 23A072

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

A total of two(2) water samples were received on 01/10/23 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. VG39A04B - 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. VG39A04L/VG39A04C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in A072-01M/A072-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG NO. : 23A072
Instrument ID : GCT039

Client : EUROFINS EATON ANALYTICAL
Project : 380-33596

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
WATER									
MBLK1W	VG39A04B	1	NA	01/11/2313:33	01/11/2313:33	EAL1005A	EAL1003A	23VG39A04	Method Blank
LCS1W	VG39A04L	1	NA	01/11/2314:09	01/11/2314:09	EAL1006A	EAL1003A	23VG39A04	Lab Control Sample (LCS)
LCD1W	VG39A04C	1	NA	01/11/2314:45	01/11/2314:45	EAL1007A	EAL1003A	23VG39A04	LCS Duplicate
380-33596-1	A072-01	1	NA	01/11/2315:22	01/11/2315:22	EAL1008A	EAL1003A	23VG39A04	Field Sample
380-33596-1MS	A072-01M	1	NA	01/11/2315:57	01/11/2315:57	EAL1009A	EAL1003A	23VG39A04	Matrix Spike Sample (MS)
380-33596-1MSD	A072-01S	1	NA	01/11/2316:33	01/11/2316:33	EAL1010A	EAL1003A	23VG39A04	MS Duplicate (MSD)
380-33596-2	A072-02	1	NA	01/11/2317:10	01/11/2317:10	EAL1011A	EAL1003A	23VG39A04	Field Sample

FN - Filename
% Moist - Percent Moisture

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SAMPLE RESULTS

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected: 01/04/23 11:00
Project	: 380-33596	Date Received: 01/10/23
Batch No.	: 23A072	Date Extracted: 01/11/23 15:22
Sample ID	: 380-33596-1	Date Analyzed: 01/11/23 15:22
Lab Samp ID:	A072-01	Dilution Factor: 1
Lab File ID:	EA11008A	Matrix: WATER
Ext Btch ID:	23VG39A04	% Moisture: NA
Calib. Ref.:	EA11003A	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	0.0330	0.0400	83	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:	01/04/23 11:00
Project	: 380-33596	Date Received:	01/10/23
Batch No.	: 23A072	Date Extracted:	01/11/23 17:10
Sample ID	: 380-33596-2	Date Analyzed:	01/11/23 17:10
Lab Samp ID:	A072-02	Dilution Factor:	1
Lab File ID:	EA11011A	Matrix:	WATER
Ext Btch ID:	23VG39A04	% Moisture:	NA
Calib. Ref.:	EA11003A	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	0.0308	0.0400	77	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

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

Client : EUROFINS EATON ANALYTICAL Date Collected: 01/11/23 13:33
Project : 380-33596 Date Received: 01/11/23
Batch No. : 23A072 Date Extracted: 01/11/23 13:33
Sample ID : MBLK1W Date Analyzed: 01/11/23 13:33
Lab Samp ID: VG39A04B Dilution Factor: 1
Lab File ID: EA11005A Matrix: WATER
Ext Btch ID: 23VG39A04 % Moisture: NA
Calib. Ref.: EA11003A 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	0.0319	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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-33596
BATCH NO. : 23A072
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39A04B	VG39A04L	VG39A04C
LAB FILE ID	: EA11005A	EA11006A	EA11007A
DATE PREPARED	: 01/11/23 13:33	01/11/23 14:09	01/11/23 14:45
DATE ANALYZED	: 01/11/23 13:33	01/11/23 14:09	01/11/23 14:45
PREP BATCH	: 23VG39A04	23VG39A04	23VG39A04
CALIBRATION REF:	EA11003A	EA11003A	EA11003A

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	0.469	94	0.500	0.468	94	0	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0426	107	0.0400	0.0435	109	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 : 380-33596
BATCH NO. : 23A072
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-33596-1	380-33596-1MS	380-33596-1MSD
LAB SAMPLE ID	: A072-01	A072-01M	A072-01S
LAB FILE ID	: EA11008A	EA11009A	EA11010A
DATE PREPARED	: 01/11/23 15:22	01/11/23 15:57	01/11/23 16:33
DATE ANALYZED	: 01/11/23 15:22	01/11/23 15:57	01/11/23 16:33
PREP BATCH	: 23VG39A04	23VG39A04	23VG39A04
CALIBRATION REF:	EA11003A	EA11003A	EA11003A

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	0.474	95	0.500	0.472	94	0	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0435	109	0.0400	0.0435	109	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-33596

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23A072



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-33596

SDG : 23A072

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/10/23 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. DSA020WB - 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. DSA020WL/DSA020WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

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: 380-33596

SDG : 23A072

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/10/23 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. DSA020WB - 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. J5A020WL/J5A020WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

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: 380-33596

SDG : 23A072

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 01/10/23 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. DSA020WB - 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. J8A020WL/J8A020WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

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

Client : EUROFINS EATON ANALYTICAL SDG NO. : 23A072
 Project : 380-33596 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
					WATER				
MBLK1W	DSA020WB	1	NA	01/19/2315:37	01/17/2314:00	LA19016A	LA19009A	23DSA020W	Method Blank
LCS1W	DSA020WL	1	NA	01/19/2315:55	01/17/2314:00	LA19017A	LA19009A	23DSA020W	Lab Control Sample (LCS)
LCD1W	DSA020WC	1	NA	01/19/2316:14	01/17/2314:00	LA19018A	LA19009A	23DSA020W	LCS Duplicate
380-33596-1	A072-01	1	NA	01/19/2317:46	01/17/2314:00	LA19023A	LA19009A	23DSA020W	Field Sample

FN - Filename
 % Moist - Percent Moisture



LAB CHRONICLE
 PETROLEUM HYDROCARBONS BY EXTRACTION

SDG NO. : 23A072
 Instrument ID : D5

Client : EUROFINS EATON ANALYTICAL
 Project : 380-33596

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Datetime	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
					WATER				
MBLK1W	DSA020WB	1	NA	01/19/2315:37	01/17/2314:00	LA19016A	LA19010A	23DSA020W	Method Blank
LCS1W	J5A020WL	1	NA	01/19/2316:32	01/17/2314:00	LA19019A	LA19010A	23DSA020W	Lab Control Sample (LCS)
LCD1W	J5A020WC	1	NA	01/19/2316:51	01/17/2314:00	LA19020A	LA19010A	23DSA020W	LCS Duplicate
380-33596-1	A072-01	1	NA	01/19/2317:46	01/17/2314:00	LA19023A	LA19010A	23DSA020W	Field Sample

FN - Filename
 % Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

SDG NO. : 23A072
Instrument ID : D5

Client : EUROFINS EATON ANALYTICAL
Project : 380-33596

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSA020WB	1	NA	01/19/2315:37	01/17/2314:00	LA19016A	LA19011A	23DSA020W	Method Blank
LCS1W	J8A020WL	1	NA	01/19/2317:09	01/17/2314:00	LA19021A	LA19011A	23DSA020W	Lab Control Sample (LCS)
LCD1W	J8A020WC	1	NA	01/19/2317:27	01/17/2314:00	LA19022A	LA19011A	23DSA020W	LCS Duplicate
380-33596-1	A072-01	1	NA	01/19/2317:46	01/17/2314:00	LA19023A	LA19011A	23DSA020W	Field Sample

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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Client      : EUROFINS EATON ANALYTICAL   Date Collected: 01/04/23 11:00
Project    : 380-33596                   Date Received: 01/10/23
Batch No.  : 23A072                       Date Extracted: 01/17/23 14:00
Sample ID  : 380-33596-1                 Date Analyzed: 01/19/23 17:46
Lab Samp ID: 23A072-01                   Dilution Factor: 1
Lab File ID: LA19023A                     Matrix: WATER
Ext Btch ID: 23DSA020W                    % Moisture: NA
Calib. Ref.: LA19009A                     Instrument ID: D5
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PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.029	0.015	
Motor Oil	ND	0.058	0.029	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.545	0.580	94	60-130
Hexacosane	0.163	0.145	113	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 : 860ml Final Volume : 5ml
Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/04/23 11:00
Project	: 380-33596	Date Received:	01/10/23
Batch No.	: 23A072	Date Extracted:	01/17/23 14:00
Sample ID	: 380-33596-1	Date Analyzed:	01/19/23 17:46
Lab Samp ID:	23A072-01	Dilution Factor:	1
Lab File ID:	LA19023A	Matrix:	WATER
Ext Btch ID:	23DSA020W	% Moisture:	NA
Calib. Ref.:	LA19010A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.058	0.029	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.545	0.580	94	60-130
Hexacosane	0.163	0.145	113	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 : 860ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/04/23 11:00
Project	: 380-33596	Date Received:	01/10/23
Batch No.	: 23A072	Date Extracted:	01/17/23 14:00
Sample ID	: 380-33596-1	Date Analyzed:	01/19/23 17:46
Lab Samp ID:	23A072-01	Dilution Factor:	1
Lab File ID:	LA19023A	Matrix:	WATER
Ext Btch ID:	23DSA020W	% Moisture:	NA
Calib. Ref.:	LA19011A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.058	0.029

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.545	0.580	94	60-130
Hexacosane	0.163	0.145	113	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 : 860ml

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: 01/17/23 14:00
Project : 380-33596	Date Received: 01/17/23
Batch No. : 23A072	Date Extracted: 01/17/23 14:00
Sample ID : MBLK1W	Date Analyzed: 01/19/23 15:37
Lab Samp ID: DSA020WB	Dilution Factor: 1
Lab File ID: LA19016A	Matrix: WATER
Ext Btch ID: 23DSA020W	% Moisture: NA
Calib. Ref.: LA19009A	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	0.443	0.500	89	60-130
Hexacosane	0.124	0.125	99	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 : 380-33596
BATCH NO. : 23A072
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA020WB	DSA020WL	DSA020WC
LAB FILE ID	: LA19016A	LA19017A	LA19018A
DATE PREPARED	: 01/17/23 14:00	01/17/23 14:00	01/17/23 14:00
DATE ANALYZED	: 01/19/23 15:37	01/19/23 15:55	01/19/23 16:14
PREP BATCH	: 23DSA020W	23DSA020W	23DSA020W
CALIBRATION REF:	LA19009A	LA19009A	LA19009A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.33	93	2.50	2.24	90	4	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.487	97	0.500	0.454	91	60-130
Hexacosane	0.125	0.127	102	0.125	0.130	104	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/17/23 14:00
Project	: 380-33596	Date Received:	01/17/23
Batch No.	: 23A072	Date Extracted:	01/17/23 14:00
Sample ID	: MBLK1W	Date Analyzed:	01/19/23 15:37
Lab Samp ID:	DSA020WB	Dilution Factor:	1
Lab File ID:	LA19016A	Matrix:	WATER
Ext Btch ID:	23DSA020W	% Moisture:	NA
Calib. Ref.:	LA19010A	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	0.443	0.500	89	60-130
Hexacosane	0.124	0.125	99	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 : 380-33596
BATCH NO. : 23A072
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA020WB	J5A020WL	J5A020WC
LAB FILE ID	: LA19016A	LA19019A	LA19020A
DATE PREPARED	: 01/17/23 14:00	01/17/23 14:00	01/17/23 14:00
DATE ANALYZED	: 01/19/23 15:37	01/19/23 16:32	01/19/23 16:51
PREP BATCH	: 23DSA020W	23DSA020W	23DSA020W
CALIBRATION REF:	LA19010A	LA19010A	LA19010A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	2.15	86	2.50	2.19	88	2	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.446	89	0.500	0.501	100	60-130
Hexacosane	0.125	0.135	108	0.125	0.134	107	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	01/17/23 14:00
Project	: 380-33596	Date Received:	01/17/23
Batch No.	: 23A072	Date Extracted:	01/17/23 14:00
Sample ID	: MBLK1W	Date Analyzed:	01/19/23 15:37
Lab Samp ID:	DSA020WB	Dilution Factor:	1
Lab File ID:	LA19016A	Matrix:	WATER
Ext Btch ID:	23DSA020W	% Moisture:	NA
Calib. Ref.:	LA19011A	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	0.443	0.500	89	60-130
Hexacosane	0.124	0.125	99	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 : 380-33596
BATCH NO. : 23A072
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSA020WB	J8A020WL	J8A020WC
LAB FILE ID	: LA19016A	LA19021A	LA19022A
DATE PREPARED	: 01/17/23 14:00	01/17/23 14:00	01/17/23 14:00
DATE ANALYZED	: 01/19/23 15:37	01/19/23 17:09	01/19/23 17:27
PREP BATCH	: 23DSA020W	23DSA020W	23DSA020W
CALIBRATION REF:	LA19011A	LA19011A	LA19011A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.50	1.83	73	2.50	2.08	83	13	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.461	92	0.500	0.544	109	60-130
Hexacosane	0.125	0.126	101	0.125	0.135	108	60-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

January 30, 2023

Rosalynn Dang
Eurofins Eaton Analytical
750 Royal Oaks Drive
Suite 100
Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-33596-1
Physis Project ID: 1407003-360

Dear Rosalynn,


Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 1/10/2023. 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

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: 1407003-360

RED-HILL Project # 38001111 Job # 380-33596-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
103244	AIEA GULCH WELLS PUMP	331-202-TP072 (380-33596-1)	1/4/2023	11:00	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.

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.

BIANALYTICALS REPORT

TERRA AURA
ENVIRONMENTAL LABORATORIES, INC.

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 103244-R1			AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater				Sampled: 04-Jan-23 11:00		Received: 10-Jan-23		
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40096	10-Jan-23	26-Jan-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 103244-R1	AIEA GULCH WELLS PUMP 2 331-20 Matrix: Samplewater						Sampled:	04-Jan-23 11:00	Received:	10-Jan-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	110	1			Total		O-40096	10-Jan-23	26-Jan-23	
(d10-Phenanthrene)	EPA 625.1	% Recovery	124	1			Total		O-40096	10-Jan-23	26-Jan-23	
(d12-Chrysene)	EPA 625.1	% Recovery	109	1			Total		O-40096	10-Jan-23	26-Jan-23	
(d12-Perylene)	EPA 625.1	% Recovery	96	1			Total		O-40096	10-Jan-23	26-Jan-23	
(d8-Naphthalene)	EPA 625.1	% Recovery	93	1			Total		O-40096	10-Jan-23	26-Jan-23	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23	
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-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-40096	10-Jan-23	26-Jan-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40096	10-Jan-23	26-Jan-23



QUALITY CONTROL REPORT

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 103243-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:				
		Method: EPA 625.1			Batch ID: O-40096		Prepared: 09-Jan-23		Analyzed: 25-Jan-23				
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 103243-BS1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:				
		Method: EPA 625.1			Batch ID: O-40096		Prepared: 09-Jan-23		Analyzed: 25-Jan-23				
Disalicylideneprapanediamin	Total	39.7	1	0.05	0.1	µg/L	50	0	79	50 - 150%	PASS		
Sample ID: 103243-BS2		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:				
		Method: EPA 625.1			Batch ID: O-40096		Prepared: 09-Jan-23		Analyzed: 25-Jan-23				
Disalicylideneprapanediamin	Total	46	1	0.05	0.1	µg/L	50	0	92	50 - 150%	PASS	15	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 103243-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
	Method: EPA 625.1					Batch ID: O-40096	Prepared: 09-Jan-23	Analyzed: 25-Jan-23			
(d10-Acenaphthene)	Total	64	1			% Recovery	100	64	27 - 133%	PASS	
(d10-Phenanthrene)	Total	67	1			% Recovery	100	67	43 - 129%	PASS	
(d12-Chrysene)	Total	54	1			% Recovery	100	54	52 - 144%	PASS	
(d12-Perylene)	Total	51	1			% Recovery	100	51	36 - 161%	PASS	
(d8-Naphthalene)	Total	61	1			% Recovery	100	61	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 CODEc
							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: 103243-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-40096			Prepared: 09-Jan-23		Analyzed: 25-Jan-23					
(d10-Acenaphthene)	Total	62	1			% Recovery	100	0	62	27 - 133%	PASS	
(d10-Phenanthrene)	Total	63	1			% Recovery	100	0	63	43 - 129%	PASS	
(d12-Chrysene)	Total	54	1			% Recovery	100	0	54	52 - 144%	PASS	
(d12-Perylene)	Total	52	1			% Recovery	100	0	52	36 - 161%	PASS	
(d8-Naphthalene)	Total	58	1			% Recovery	100	0	58	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.636	1	0.001	0.005	µg/L	0.5	0	127	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.549	1	0.001	0.005	µg/L	0.5	0	110	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.651	1	0.001	0.005	µg/L	1	0	65	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.598	1	0.001	0.005	µg/L	0.5	0	120	48 - 120%	PASS	
2-Methylnaphthalene	Total	1.95	1	0.001	0.005	µg/L	1.5	0	130	47 - 130%	PASS	
Acenaphthene	Total	1.96	1	0.001	0.005	µg/L	1.5	0	131	53 - 131%	PASS	
Acenaphthylene	Total	2.04	1	0.001	0.005	µg/L	1.5	0	136	43 - 140%	PASS	
Anthracene	Total	2.01	1	0.001	0.005	µg/L	1.5	0	134	58 - 135%	PASS	
Benz[a]anthracene	Total	1.62	1	0.001	0.005	µg/L	1.5	0	108	55 - 145%	PASS	
Benzo[a]pyrene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	1.74	1	0.001	0.005	µg/L	1.5	0	116	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	1.71	1	0.001	0.005	µg/L	1.5	0	114	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	1.7	1	0.001	0.005	µg/L	1.5	0	113	56 - 145%	PASS	
Biphenyl	Total	0.693	1	0.001	0.005	µg/L	1	0	69	56 - 119%	PASS	
Chrysene	Total	1.61	1	0.001	0.005	µg/L	1.5	0	107	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	1.88	1	0.001	0.005	µg/L	1.5	0	125	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	50 - 150%	PASS	
Dibenzothiophene	Total	0.589	1	0.001	0.005	µg/L	0.5	0	118	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	2.07	1	0.001	0.005	µg/L	1.5	0	138	60 - 146%	PASS		
Fluorene	Total	2.08	1	0.001	0.005	µg/L	2	0	104	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	1.8	1	0.001	0.005	µg/L	1.5	0	120	50 - 151%	PASS		
Naphthalene	Total	1.85	1	0.001	0.005	µg/L	1.5	0	123	41 - 126%	PASS		
Perylene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	48 - 141%	PASS		
Phenanthrene	Total	2.05	1	0.001	0.005	µg/L	2	0	102	67 - 127%	PASS		
Pyrene	Total	1.98	1	0.001	0.005	µg/L	1.5	0	132	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: 103243-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-40096			Prepared: 09-Jan-23			Analyzed: 25-Jan-23				
(d10-Acenaphthene)	Total	59	1				% Recovery	100	0	59	27 - 133%	PASS	5	30	PASS
(d10-Phenanthrene)	Total	62	1				% Recovery	100	0	62	43 - 129%	PASS	2	30	PASS
(d12-Chrysene)	Total	52	1				% Recovery	100	0	52	52 - 144%	PASS	4	30	PASS
(d12-Perylene)	Total	50	1				% Recovery	100	0	50	36 - 161%	PASS	4	30	PASS
(d8-Naphthalene)	Total	54	1				% Recovery	100	0	54	25 - 125%	PASS	7	30	PASS
1-Methylnaphthalene	Total	0.603	1	0.001	0.005	µg/L		0.5	0	121	31 - 128%	PASS	5	30	PASS
1-Methylphenanthrene	Total	0.537	1	0.001	0.005	µg/L		0.5	0	107	66 - 127%	PASS	3	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.603	1	0.001	0.005	µg/L		1	0	60	55 - 122%	PASS	8	30	PASS
2,6-Dimethylnaphthalene	Total	0.589	1	0.001	0.005	µg/L		0.5	0	118	48 - 120%	PASS	2	30	PASS
2-Methylnaphthalene	Total	1.82	1	0.001	0.005	µg/L		1.5	0	121	47 - 130%	PASS	7	30	PASS
Acenaphthene	Total	1.88	1	0.001	0.005	µg/L		1.5	0	125	53 - 131%	PASS	5	30	PASS
Acenaphthylene	Total	1.95	1	0.001	0.005	µg/L		1.5	0	130	43 - 140%	PASS	5	30	PASS
Anthracene	Total	1.94	1	0.001	0.005	µg/L		1.5	0	129	58 - 135%	PASS	4	30	PASS
Benz[a]anthracene	Total	1.53	1	0.001	0.005	µg/L		1.5	0	102	55 - 145%	PASS	6	30	PASS
Benzo[a]pyrene	Total	1.53	1	0.001	0.005	µg/L		1.5	0	102	51 - 143%	PASS	5	30	PASS
Benzo[b]fluoranthene	Total	1.66	1	0.001	0.005	µg/L		1.5	0	111	46 - 165%	PASS	4	30	PASS
Benzo[e]pyrene	Total	0.497	1	0.001	0.005	µg/L		0.5	0	99	42 - 152%	PASS	2	30	PASS
Benzo[g,h,i]perylene	Total	1.64	1	0.001	0.005	µg/L		1.5	0	109	63 - 133%	PASS	4	30	PASS
Benzo[k]fluoranthene	Total	1.59	1	0.001	0.005	µg/L		1.5	0	106	56 - 145%	PASS	6	30	PASS
Biphenyl	Total	0.655	1	0.001	0.005	µg/L		1	0	65	56 - 119%	PASS	4	30	PASS
Chrysene	Total	1.53	1	0.001	0.005	µg/L		1.5	0	102	56 - 141%	PASS	5	30	PASS
Dibenz[a,h]anthracene	Total	1.8	1	0.001	0.005	µg/L		1.5	0	120	55 - 150%	PASS	4	30	PASS
Dibenzo[a,l]pyrene	Total	0.426	1	0.001	0.005	µg/L		0.5	0	85	50 - 150%	PASS	0	30	PASS
Dibenzothiophene	Total	0.566	1	0.001	0.005	µg/L		0.5	0	113	46 - 126%	PASS	4	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY		PRECISION		QA CODE _c	
									%	LIMITS	%	LIMITS		
Fluoranthene	Total	2.05	1	0.001	0.005	µg/L	1.5	0	137	60 - 146%	PASS	1	30	PASS
Fluorene	Total	1.99	1	0.001	0.005	µg/L	2	0	100	58 - 131%	PASS	4	30	PASS
Indeno[1,2,3-cd]pyrene	Total	1.76	1	0.001	0.005	µg/L	1.5	0	117	50 - 151%	PASS	3	30	PASS
Naphthalene	Total	1.72	1	0.001	0.005	µg/L	1.5	0	115	41 - 126%	PASS	7	30	PASS
Perylene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	48 - 141%	PASS	3	30	PASS
Phenanthrene	Total	1.98	1	0.001	0.005	µg/L	2	0	99	67 - 127%	PASS	3	30	PASS
Pyrene	Total	1.95	1	0.001	0.005	µg/L	1.5	0	130	54 - 156%	PASS	2	30	PASS

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PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 103244

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.3282	1.0356	1111	Anthracene-D10-	1517-22-2	94
57.7594	0.4172	448	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	98
10.2749	0.2068	222	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	88
10.9408	0.1715	184	Cyclopropane, 2-bromo-1,1,3-trimethyl-	36617-00-2	92
32.9827	0.1387	149	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.7361	0.1255	135	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	93
10.6737	0.1122	120	Octane, 3-methyl-6-methylene-	74630-07-2	86

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank Batch O-40096

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
35.9035	2.7768	1111	Anthracene-D10-	1719-06-8	97
57.7615	2.4778	991	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	98
10.9448	2.3970	959	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	90
10.9448	2.3566	943	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	93
10.2785	1.8490	740	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	90
10.6786	0.9186	368	Octane, 3-methyl-6-methylene-	74630-07-2	84
10.7392	0.9151	366	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	93
10.5684	0.8450	338	Hydroperoxide, 1-ethylbutyl	24254-56-6	80
11.2969	0.5527	221	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	94
32.9882	0.5016	201	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
11.2967	0.4919	197	Oxalic acid, cyclohexyl butyl ester	1000309-30-5	92
10.6917	0.4867	195	5-Oxotetrahydrofuran-2-carboxylic acid	4344-84-7	82
10.4937	0.3623	145	2,3,3-Trimethyl-1-hexene	1000113-52-1	89
11.3375	0.3297	132	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	94
10.0303	0.2414	97	Ethanol, 2-butoxy-	111-76-2	96

Concentration estimated using the response for Anthracene-d10

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Project Iteration ID: 1407003-360
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-33596-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: JK
2. Date Received: 1/10/23
3. Time Received: 11:10
4. Client Name: EUROFINS
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0.1°C Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

1. COC(s) included and completely filled out..... Yes / No
2. All sample containers arrived intact..... Yes / No
3. All samples listed on COC(s) are present..... Yes / No
4. Information on containers consistent with information on COC(s)..... Yes / No
5. Correct containers and volume for all analyses indicated..... Yes / No
6. All samples received within method holding time..... Yes / No
7. Correct preservation used for all analyses indicated..... Yes / No
8. Name of sampler included on COC(s)..... Yes / No

Notes:

Chain of Custody Record

Client Information		Sampler: <u>RYAN GREEN</u>		Lab PM: Frank, Debbie L		Carrier Tracking No(s):		COC No: 380-9755-2757.2					
Client Contact: Dr. Ron Fenstermacher		Phone: <u>808 748 5840</u>		E-Mail: Debbie.Frank@et.eurofinsus.com		State of Origin:		Page: Page 2 of 3					
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)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 825 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of Containers	Preservation Codes:	
City: Honolulu		TAT Requested (days):										A - HCL	M - Hexane
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input checked="" 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/HBWS Sites Event Desc: RUSH Weekly 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								
				Z - other (specify)									
				Other:									
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)		Special Instructions/Note:			
						Preservation Code:							
MOANALUA WELLS (331-223-TP202)								Water					
AIEA GULCH WELLS PUMP 1 (331-201-TP071)								Water					
AIEA GULCH WELLS PUMP 2 (331-202-TP072)		1-4-23		1100		G		Water					
AIEA WELLS PUMPS1&2(260)331-203-TP400								Water					
HALAWA SHAFT (331-241-TP401)								Water					
HALAWA WELLS UNITS1&2(331-206-TP065)								Water					
MOANALUA WELLS (331-223-TP202)								Water					
AIEA GULCH WELLS PUMP 1 (331-201-TP071)								Water					
AIEA GULCH WELLS PUMP 2 (331-202-TP072)								Water					
AIEA WELLS PUMPS1&2(260)331-203-TP400								Water					
HALAWA SHAFT (331-241-TP401)								Water					
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:									
Empty Kit Relinquished by:		Date:		Time:		Method of Shipping							
Relinquished by: [Redacted]		Date/Time: 1/5/23 1300		Company:		Received by: [Signature]		Date/Time: 1/5/23 0930		Company: [Signature]			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: (75) 40 39 622									

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Monrovia, CA (Suite 100)

750 Royal Oaks Drive Suite 100

Monrovia, CA 91016

Phone: 626-386-1100

Chain of Custody Record



Environment Testing America

Client Information		Sampler: RYAN GREER	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-9755-2757.3
Client Contact: Dr. Ron Fenstemacher		Phone: 808 748 5840	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin:	Page: Page 3 of 3
Company: City & County of Honolulu		PWSID:	Analysis Requested		
Address: 630 South Beretania Street Chemistry Lab		Due Date Requested:	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDTA Y - Trizma Z - other (specify)		
City: Honolulu		TAT Requested (days):			
State, Zip: HI, 96843		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Phone: 808-748-5091(Tel)		PO #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws.org		WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111	Field Filtered Sample (Yes or No)		
Site: Hawaii		SSOW#:	Perfor M/S/MSD (Yes or No)		
			SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs		
			SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		
			SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil		
			525.2_PRC - (MOD) 525plus Plus TICs		
			SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)		
			Total Number of containers		
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)
					Preservation Code:
					R R RA RA
HALAWA WELLS UNITS1&2(331-206-TP065)					Water
MOANALUA WELLS (331-223-TP202)					Water
TB AIEA GULCH WELLS PUMP1 331-201-TP071					Water
TB AIEA GULCH WELLS PUMP2 331-202-TP07		1-4-23	1100	G	Water
TB AIEA WELLS PUMPS1&2(260)331-203-TP400					Water
TB HALAWA SHAFT (331-241-TP401)					Water
TB HALAWA WELLS UNITS1&2(331-206-TP065)					Water
TB MOANALUA WELLS (331-223-TP202)					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:			
Empty Kit Relinquished by:		Date:	Time:	Method of shipment: FedEx 770958858209	
Relinquished by: RYAN GREER	Date/Time: 4/5/23 1300	Company: HBWS	Received by: Chris Paul	Date/Time: 4.9.23 0930	Company: ECH
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: (150) 4.0-3.9 cel			

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-33596-1

Login Number: 33596

List Source: Eurofins Drinking Water Testing Pomona

List Number: 1

Creator: Carpenter, Kelly

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	