eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/1/2023 2:16:07 PM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-31360-1

Eurofins Eaton Monrovia
750 Royal Oaks Drive
Suite 100
Monrovia CA 91016

See page two for job notes and contact information.

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

Rachelle Arada

Generated
2/1/2023 2:16:07 PM

Authorized for release by
Rachelle Arada, Manager of Project Management
Rachelle.Arada@et.eurofinsus.com
(626)386-1106

Table of Contents

Definitions/Glossary

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

Job ID: 380-31360-1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
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

Job ID: 380-31360-1

Laboratory: Eurofins Eaton Monrovia

Narrative

Job Narrative
380-31360-1

Comments
No additional comments.

Receipt
The samples were received on 12/14/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, an where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS Semi VOA
Method 525.2: The laboratory control sample duplicate (LCSD) for preparation batch 380-26937 and analytical batch 380-27096 recovered outside control limits for the following analyte: Di(2-ethylhexyl)adipate. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

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

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: 380-31360-1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-31360-1

No Detections.

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-31360-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-31360-1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/12/22 10:30
Date Received: 12/14/22 10:00

Lab Sample ID: 380-31360-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
2,4'-DDE	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
2,4'-DDT	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
2,4-Dinitrotoluene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
2,6-Dinitrotoluene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
4,4'-DDD	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
4,4'-DDE	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
4,4'-DDT	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Acenaphthene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Acenaphthylene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Acetochlor	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Alachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
alpha-BHC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
alpha-Chlordane	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Anthracene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 16:41	1
Atrazine	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Benz(a)anthracene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Benzo[a]pyrene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 16:41	1
Benzo[b]fluoranthene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 16:41	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Benzo[k]fluoranthene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 16:41	1
beta-BHC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Bromacil	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Butachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Butylbenzylphthalate	ND		0.50		ug/L		12/15/22 07:21	12/16/22 16:41	1
Caffeine	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Chlorobenzilate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Chloroneb	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Chlorpyrifos	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Chrysene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 16:41	1
delta-BHC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Di(2-ethylhexyl)adipate	ND	*+ ^3+	0.60		ug/L		12/15/22 07:21	12/16/22 16:41	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		12/15/22 07:21	12/16/22 16:41	1
Diazinon (Qualitative)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Diclorvos (DDVP)	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Dieldrin	ND		0.20		ug/L		12/15/22 07:21	12/16/22 16:41	1
Diethylphthalate	ND		0.50		ug/L		12/15/22 07:21	12/16/22 16:41	1
Dimethoate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Dimethylphthalate	ND		0.50		ug/L		12/15/22 07:21	12/16/22 16:41	1
Di-n-butyl phthalate	ND		0.99		ug/L		12/15/22 07:21	12/16/22 16:41	1
Di-n-octyl phthalate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Endosulfan I (Alpha)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Endosulfan II (Beta)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Endosulfan sulfate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Endrin	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Endrin aldehyde	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
EPTC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/12/22 10:30
Date Received: 12/14/22 10:00

Lab Sample ID: 380-31360-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Fluorene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
gamma-Chlordane	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Heptachlor	ND		0.040		ug/L		12/15/22 07:21	12/16/22 16:41	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Hexachlorobenzene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Isophorone	ND		0.50		ug/L		12/15/22 07:21	12/16/22 16:41	1
Lindane	ND		0.040		ug/L		12/15/22 07:21	12/16/22 16:41	1
Malathion	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Methoxychlor	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Metolachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Metribuzin	ND	^3+	0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Molinate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Naphthalene	ND		0.30		ug/L		12/15/22 07:21	12/16/22 16:41	1
Parathion	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		12/15/22 07:21	12/16/22 16:41	1
Phenanthrene	ND		0.040		ug/L		12/15/22 07:21	12/16/22 16:41	1
Propachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Pyrene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Simazine	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Terbacil	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Terbuthylazine	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1
Thiobencarb	ND		0.20		ug/L		12/15/22 07:21	12/16/22 16:41	1
trans-Nonachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 16:41	1
Trifluralin	ND		0.099		ug/L		12/15/22 07:21	12/16/22 16:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexathiane	*1.8*	*T J N*	*ug/L*		*4.57*	*13798-23-7*	*12/15/22 07:21*	*12/16/22 16:41*	*1*
Unknown	*3.9*	*T J*	*ug/L*		*6.46*		*12/15/22 07:21*	*12/16/22 16:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*100*		*70 - 130*	*12/15/22 07:21*	*12/16/22 16:41*	*1*
Triphenylphosphate	*99*		*70 - 130*	*12/15/22 07:21*	*12/16/22 16:41*	*1*
Perylene-d12	*95*		*70 - 130*	*12/15/22 07:21*	*12/16/22 16:41*	*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		12/15/22 00:00	12/25/22 20:28	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Acenaphthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Anthracene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-31360-1
Date Collected: 12/12/22 10:30
Matrix: Drinking Water
Date Received: 12/14/22 10:00
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Biphenyl	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Chrysene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/15/22 00:00	12/25/22 20:28	1
Fluoranthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Fluorene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Naphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Perylene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Phenanthrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1
Pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*94*		*45 - 118*	*12/15/22 00:00*	*12/25/22 20:28*	*1*
(d10-Phenanthrene)	*99*		*56 - 123*	*12/15/22 00:00*	*12/25/22 20:28*	*1*
(d12-Chrysene)	*97*		*36 - 142*	*12/15/22 00:00*	*12/25/22 20:28*	*1*
(d12-Perylene)	*85*		*36 - 161*	*12/15/22 00:00*	*12/25/22 20:28*	*1*
(d8-Naphthalene)	*87*		*20 - 112*	*12/15/22 00:00*	*12/25/22 20:28*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			12/19/22 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*87*		*60 - 140*		*12/19/22 20:12*	*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	0.026		mg/L			01/05/23 18:03	1
JP5	ND	U	0.052		mg/L			01/05/23 18:03	1
JP8	ND	U	0.052		mg/L			01/05/23 18:03	1
MOTOR OIL	ND	U	0.052		mg/L			01/05/23 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*74*		*60 - 130*		*01/05/23 18:03*	*1*
HEXACOSANE	*95*		*60 - 130*		*01/05/23 18:03*	*1*

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-31360-2
Date Collected: 12/12/22 10:30
Matrix: Water
Date Received: 12/14/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			12/19/22 20:49	1

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

Job ID: 380-31360-1

Client Sample ID: TB MOANALUA WELLS
Date Collected: 12/12/22 10:30
Date Received: 12/14/22 10:00

Lab Sample ID: 380-31360-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	91		60 - 140		12/19/22 20:49	1

Action Limit Summary

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

Job ID: 380-31360-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-31360-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	Limit	RL	Method	Prep Type
Alachlor	ND		ug/L	2	0.050	525.2	Total/NA
Atrazine	ND		ug/L	3	0.050	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND	*+ ^3+	ug/L	400	0.60	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.60	525.2	Total/NA
Endrin	ND		ug/L	2	0.099	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.050	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.099	525.2	Total/NA
Simazine	ND		ug/L	4	0.050	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-31360-1

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-31360-1	MOANALUA WELLS	100	99	95

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**

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-31149-S-1-A MS	Matrix Spike	99	107	100
380-31185-J-1-A DU	Duplicate	98	106	96
LCS 380-26937/3-A	Lab Control Sample	101	103	100
LCSD 380-26937/4-A	Lab Control Sample Dup	99	109	98
MB 380-26937/1-A	Method Blank	99	106	97
MRL 380-26937/2-A	Lab Control Sample	98	106	96

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**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
102905-B1	Method Blank	96	99	95	93	80
102905-BS1	Lab Control Sample	88	92	79	83	76
102905-BS2	Lab Control Sample Dup	95	98	89	91	84

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**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(45-118)	(56-123)	(36-142)	(20-112)	(36-161)
380-31360-1	MOANALUA WELLS	94	99	97	87	85

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)
(d10-Phenanthrene) = (d10-Phenanthrene)

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-31360-1
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)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-31360-1	MOANALUA WELLS	87

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)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
22VGH7L05C	LCD	104
22VGH7L05L	Lab Control Sample	101

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)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-31360-2	TB MOANALUA WELLS	91

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)
		BFB
Lab Sample ID	Client Sample ID	
22VGH7L05B	Method Blank	

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

Matrix: Drinking Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-31360-1	MOANALUA WELLS	74	95

Surrogate Legend
BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-31360-1
Project/Site: RED-HILL

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

Matrix: WATER **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID		
22DSL035WB	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)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
22DSL035WC	LCD	93	107
22DSL035WL	Lab Control Sample	94	108
22J5L035WC	LCD	109	105
22J5L035WL	Lab Control Sample	91	102
22J8L035WC	LCD	105	113
22J8L035WL	Lab Control Sample	96	102

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Lab Sample ID: MB 380-26937/1-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 26937

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
2,4'-DDE	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
2,4'-DDT	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
2,4-Dinitrotoluene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
2,6-Dinitrotoluene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
4,4'-DDD	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
4,4'-DDE	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
4,4'-DDT	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Acenaphthene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Acenaphthylene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Acetochlor	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Alachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
alpha-BHC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
alpha-Chlordane	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Anthracene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 14:22	1
Atrazine	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Benz(a)anthracene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Benzo[a]pyrene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 14:22	1
Benzo[b]fluoranthene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 14:22	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Benzo[k]fluoranthene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 14:22	1
beta-BHC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Bromacil	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Butachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Butylbenzylphthalate	ND		0.50		ug/L		12/15/22 07:21	12/16/22 14:22	1
Caffeine	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Chlorobenzilate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Chloroneb	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Chlorpyrifos	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Chrysene	ND		0.020		ug/L		12/15/22 07:21	12/16/22 14:22	1
delta-BHC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		12/15/22 07:21	12/16/22 14:22	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		12/15/22 07:21	12/16/22 14:22	1
Diazinon (Qualitative)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Diclorvos (DDVP)	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Dieldrin	ND		0.20		ug/L		12/15/22 07:21	12/16/22 14:22	1
Diethylphthalate	ND		0.50		ug/L		12/15/22 07:21	12/16/22 14:22	1
Dimethoate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Dimethylphthalate	ND		0.50		ug/L		12/15/22 07:21	12/16/22 14:22	1
Di-n-butyl phthalate	ND		0.99		ug/L		12/15/22 07:21	12/16/22 14:22	1
Di-n-octyl phthalate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Endosulfan I (Alpha)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Endosulfan II (Beta)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Endosulfan sulfate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Endrin	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Endrin aldehyde	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1

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

Lab Sample ID: MB 380-26937/1-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 26937

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Fluoranthene	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Fluorene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
gamma-Chlordane	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Heptachlor	ND		0.040		ug/L		12/15/22 07:21	12/16/22 14:22	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Hexachlorobenzene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Isophorone	ND		0.50		ug/L		12/15/22 07:21	12/16/22 14:22	1
Lindane	ND		0.040		ug/L		12/15/22 07:21	12/16/22 14:22	1
Malathion	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Methoxychlor	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Metolachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Metribuzin	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Molinate	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Naphthalene	ND		0.30		ug/L		12/15/22 07:21	12/16/22 14:22	1
Parathion	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		12/15/22 07:21	12/16/22 14:22	1
Phenanthrene	ND		0.040		ug/L		12/15/22 07:21	12/16/22 14:22	1
Propachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Pyrene	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Simazine	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Terbacil	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Terbuthylazine	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1
Thiobencarb	ND		0.20		ug/L		12/15/22 07:21	12/16/22 14:22	1
trans-Nonachlor	ND		0.050		ug/L		12/15/22 07:21	12/16/22 14:22	1
Trifluralin	ND		0.099		ug/L		12/15/22 07:21	12/16/22 14:22	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*1.81*	*T J*	*ug/L*		*2.39*		*12/15/22 07:21*	*12/16/22 14:22*	*1*
Unknown	*1.02*	*T J*	*ug/L*		*2.68*		*12/15/22 07:21*	*12/16/22 14:22*	*1*
Unknown	*0.776*	*T J*	*ug/L*		*6.44*		*12/15/22 07:21*	*12/16/22 14:22*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*99*		*70 - 130*	*12/15/22 07:21*	*12/16/22 14:22*	*1*
Triphenylphosphate	*106*		*70 - 130*	*12/15/22 07:21*	*12/16/22 14:22*	*1*
Perylene-d12	*97*		*70 - 130*	*12/15/22 07:21*	*12/16/22 14:22*	*1*

Lab Sample ID: LCS 380-26937/3-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.99	1.98		ug/L		100	70 - 130
2,4'-DDE	1.99	1.91		ug/L		96	70 - 130
2,4'-DDT	1.99	1.97		ug/L		99	70 - 130

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

Lab Sample ID: LCS 380-26937/3-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.99	1.73		ug/L		87	70 - 130
2,6-Dinitrotoluene	1.99	1.67		ug/L		84	70 - 130
4,4'-DDD	1.99	1.99		ug/L		100	70 - 130
4,4'-DDE	1.99	1.81		ug/L		91	70 - 130
4,4'-DDT	1.99	1.77		ug/L		89	70 - 130
Acenaphthene	1.99	1.71		ug/L		86	70 - 130
Acenaphthylene	1.99	1.82		ug/L		92	70 - 130
Acetochlor	1.99	1.90		ug/L		95	70 - 130
Alachlor	1.99	1.78		ug/L		90	70 - 130
alpha-BHC	1.99	1.87		ug/L		94	70 - 130
alpha-Chlordane	1.99	1.67		ug/L		84	70 - 130
Anthracene	1.99	1.83		ug/L		92	70 - 130
Atrazine	1.99	1.87		ug/L		94	70 - 130
Benz(a)anthracene	1.99	1.96		ug/L		99	70 - 130
Benzo[a]pyrene	1.99	2.08		ug/L		105	70 - 130
Benzo[b]fluoranthene	1.99	1.99		ug/L		100	70 - 130
Benzo[g,h,i]perylene	1.99	2.08		ug/L		105	70 - 130
Benzo[k]fluoranthene	1.99	2.18		ug/L		110	70 - 130
beta-BHC	1.99	1.82		ug/L		92	70 - 130
Bromacil	1.99	1.83		ug/L		92	70 - 130
Butachlor	1.99	1.94		ug/L		98	70 - 130
Butylbenzylphthalate	1.99	2.11		ug/L		106	70 - 130
Caffeine	1.99	1.80		ug/L		91	45 - 137
Chlorobenzilate	1.99	1.97		ug/L		99	70 - 130
Chloroneb	1.99	1.90		ug/L		95	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	1.66		ug/L		83	70 - 130
Chlorpyrifos	1.99	2.15		ug/L		108	70 - 130
Chrysene	1.99	1.93		ug/L		97	70 - 130
delta-BHC	1.99	1.85		ug/L		93	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.31		ug/L		116	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	1.85		ug/L		93	70 - 130
Diazinon (Qualitative)	1.99	1.93		ug/L		97	15 - 132
Dibenz(a,h)anthracene	1.99	2.13		ug/L		107	70 - 130
Diclorvos (DDVP)	1.99	1.84		ug/L		93	70 - 130
Dieldrin	1.99	1.86		ug/L		94	70 - 130
Diethylphthalate	1.99	1.87		ug/L		94	70 - 130
Dimethoate	1.99	1.47		ug/L		74	35 - 100
Dimethylphthalate	1.99	1.83		ug/L		92	70 - 130
Di-n-butyl phthalate	3.97	3.97		ug/L		100	70 - 130
Di-n-octyl phthalate	1.99	1.78		ug/L		90	70 - 130
Endosulfan I (Alpha)	1.99	1.87		ug/L		94	70 - 130
Endosulfan II (Beta)	1.99	1.97		ug/L		99	70 - 130
Endosulfan sulfate	1.99	2.06		ug/L		104	70 - 130
Endrin	1.99	2.18		ug/L		110	70 - 130
Endrin aldehyde	1.99	1.55		ug/L		78	70 - 130
EPTC	1.99	2.04		ug/L		103	70 - 130
Fluoranthene	1.99	1.95		ug/L		98	70 - 130
Fluorene	1.99	1.81		ug/L		91	70 - 130
gamma-Chlordane	1.99	1.62		ug/L		81	70 - 130

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

Lab Sample ID: LCS 380-26937/3-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26937

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Heptachlor			1.99	1.94		ug/L		97	70 - 130		
Heptachlor epoxide (isomer B)			1.99	1.69		ug/L		85	70 - 130		
Hexachlorobenzene			1.99	1.76		ug/L		89	70 - 130		
Hexachlorocyclopentadiene			1.99	1.68		ug/L		85	70 - 130		
Indeno[1,2,3-cd]pyrene			1.99	2.12		ug/L		107	70 - 130		
Isophorone			1.99	1.94		ug/L		97	70 - 130		
Lindane			1.99	1.82		ug/L		92	70 - 130		
Malathion			1.99	1.98		ug/L		100	70 - 130		
Methoxychlor			1.99	1.92		ug/L		97	70 - 130		
Metolachlor			1.99	1.97		ug/L		99	70 - 130		
Metribuzin			1.99	1.73		ug/L		87	70 - 130		
Molinate			1.99	2.08		ug/L		105	70 - 130		
Naphthalene			1.99	1.92		ug/L		97	70 - 130		
Parathion			1.99	1.98		ug/L		100	70 - 130		
Pendimethalin (Penoxaline)			1.99	1.73		ug/L		87	70 - 130		
Phenanthrene			1.99	1.83		ug/L		92	70 - 130		
Propachlor			1.99	2.04		ug/L		102	70 - 130		
Pyrene			1.99	2.08		ug/L		105	70 - 130		
Simazine			1.99	1.92		ug/L		97	70 - 130		
Terbacil			1.99	1.84		ug/L		93	70 - 130		
Terbuthylazine			1.99	1.78		ug/L		90	70 - 130		
Thiobencarb			1.99	2.23		ug/L		112	70 - 130		
trans-Nonachlor			1.99	1.96		ug/L		99	70 - 130		
Trifluralin			1.99	1.71		ug/L		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Triphenylphosphate	*103*		*70 - 130*
Perylene-d12	*100*		*70 - 130*

Lab Sample ID: LCSD 380-26937/4-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 26937

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD			1.98	2.12		ug/L		107	70 - 130	7	20
2,4'-DDE			1.98	2.06		ug/L		104	70 - 130	8	20
2,4'-DDT			1.98	2.19		ug/L		110	70 - 130	10	20
2,4-Dinitrotoluene			1.98	1.85		ug/L		93	70 - 130	7	20
2,6-Dinitrotoluene			1.98	1.73		ug/L		87	70 - 130	4	20
4,4'-DDD			1.98	2.18		ug/L		110	70 - 130	9	20
4,4'-DDE			1.98	1.98		ug/L		100	70 - 130	9	20
4,4'-DDT			1.98	1.91		ug/L		96	70 - 130	8	20
Acenaphthene			1.98	1.76		ug/L		89	70 - 130	3	20
Acenaphthylene			1.98	1.86		ug/L		94	70 - 130	2	20
Acetochlor			1.98	2.00		ug/L		101	70 - 130	5	20
Alachlor			1.98	1.88		ug/L		95	70 - 130	5	20
alpha-BHC			1.98	1.97		ug/L		100	70 - 130	6	20

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

Lab Sample ID: LCSD 380-26937/4-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 26937

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
alpha-Chlordane			1.98	1.79		ug/L		91	70 - 130	7	20
Anthracene			1.98	1.94		ug/L		98	70 - 130	6	20
Atrazine			1.98	2.02		ug/L		102	70 - 130	8	20
Benz(a)anthracene			1.98	2.14		ug/L		108	70 - 130	9	20
Benzo[a]pyrene			1.98	2.15		ug/L		109	70 - 130	4	20
Benzo[b]fluoranthene			1.98	2.04		ug/L		103	70 - 130	3	20
Benzo[g,h,i]perylene			1.98	2.10		ug/L		106	70 - 130	1	20
Benzo[k]fluoranthene			1.98	2.25		ug/L		113	70 - 130	3	20
beta-BHC			1.98	1.98		ug/L		100	70 - 130	9	20
Bromacil			1.98	2.04		ug/L		103	70 - 130	11	20
Butachlor			1.98	2.10		ug/L		106	70 - 130	8	20
Butylbenzylphthalate			1.98	2.24		ug/L		113	70 - 130	6	20
Caffeine			1.98	1.88		ug/L		95	45 - 137	4	20
Chlorobenzilate			1.98	2.04		ug/L		103	70 - 130	3	20
Chloroneb			1.98	1.98		ug/L		100	70 - 130	4	20
Chlorothalonil (Draconil, Bravo)			1.98	1.92		ug/L		97	70 - 130	15	20
Chlorpyrifos			1.98	2.32		ug/L		117	70 - 130	8	20
Chrysene			1.98	2.01		ug/L		101	70 - 130	4	20
delta-BHC			1.98	2.07		ug/L		104	70 - 130	11	20
Di(2-ethylhexyl)adipate			1.98	2.76	*+	ug/L		139	70 - 130	18	20
Bis(2-ethylhexyl) phthalate			1.98	1.94		ug/L		98	70 - 130	4	20
Diazinon (Qualitative)			1.98	1.96		ug/L		99	15 - 132	1	20
Dibenz(a,h)anthracene			1.98	2.21		ug/L		112	70 - 130	4	20
Diclorvos (DDVP)			1.98	1.92		ug/L		97	70 - 130	4	20
Dieldrin			1.98	1.98		ug/L		100	70 - 130	6	20
Diethylphthalate			1.98	1.95		ug/L		98	70 - 130	4	20
Dimethoate			1.98	1.36		ug/L		68	35 - 100	8	20
Dimethylphthalate			1.98	1.87		ug/L		94	70 - 130	2	20
Di-n-butyl phthalate			3.96	4.09		ug/L		103	70 - 130	3	20
Di-n-octyl phthalate			1.98	1.97		ug/L		99	70 - 130	10	20
Endosulfan I (Alpha)			1.98	2.00		ug/L		101	70 - 130	7	20
Endosulfan II (Beta)			1.98	2.11		ug/L		107	70 - 130	7	20
Endosulfan sulfate			1.98	2.23		ug/L		113	70 - 130	8	20
Endrin			1.98	2.42		ug/L		122	70 - 130	11	20
Endrin aldehyde			1.98	1.59		ug/L		80	70 - 130	3	20
EPTC			1.98	2.01		ug/L		102	70 - 130	1	20
Fluoranthene			1.98	2.12		ug/L		107	70 - 130	8	20
Fluorene			1.98	1.85		ug/L		94	70 - 130	2	20
gamma-Chlordane			1.98	1.75		ug/L		88	70 - 130	8	20
Heptachlor			1.98	2.07		ug/L		104	70 - 130	7	20
Heptachlor epoxide (isomer B)			1.98	1.80		ug/L		91	70 - 130	6	20
Hexachlorobenzene			1.98	1.79		ug/L		91	70 - 130	2	20
Hexachlorocyclopentadiene			1.98	1.74		ug/L		88	70 - 130	3	20
Indeno[1,2,3-cd]pyrene			1.98	2.18		ug/L		110	70 - 130	3	20
Isophorone			1.98	1.93		ug/L		98	70 - 130	0	20
Lindane			1.98	1.97		ug/L		99	70 - 130	8	20
Malathion			1.98	2.16		ug/L		109	70 - 130	9	20
Methoxychlor			1.98	2.00		ug/L		101	70 - 130	4	20
Metolachlor			1.98	2.09		ug/L		105	70 - 130	6	20

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

Lab Sample ID: LCSD 380-26937/4-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 26937

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Metribuzin			1.98	1.65		ug/L		83	70 - 130	4	20
Molinate			1.98	2.13		ug/L		107	70 - 130	2	20
Naphthalene			1.98	1.93		ug/L		97	70 - 130	0	20
Parathion			1.98	2.14		ug/L		108	70 - 130	8	20
Pendimethalin (Penoxaline)			1.98	1.90		ug/L		96	70 - 130	9	20
Phenanthrene			1.98	1.92		ug/L		97	70 - 130	5	20
Propachlor			1.98	2.15		ug/L		108	70 - 130	5	20
Pyrene			1.98	2.26		ug/L		114	70 - 130	8	20
Simazine			1.98	2.07		ug/L		105	70 - 130	8	20
Terbacil			1.98	2.11		ug/L		106	70 - 130	14	20
Terbuthylazine			1.98	1.92		ug/L		97	70 - 130	8	20
Thiobencarb			1.98	2.34		ug/L		118	70 - 130	5	20
trans-Nonachlor			1.98	2.19		ug/L		111	70 - 130	11	20
Trifluralin			1.98	1.76		ug/L		89	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Triphenylphosphate	*109*		*70 - 130*
Perylene-d12	*98*		*70 - 130*

Lab Sample ID: MRL 380-26937/2-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26937

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD			0.0992	0.142		ug/L		143	50 - 150
2,4'-DDE			0.0992	0.102		ug/L		103	50 - 150
2,4'-DDT			0.0992	0.0951	J	ug/L		96	50 - 150
2,4-Dinitrotoluene			0.0992	0.0755	J	ug/L		76	50 - 150
2,6-Dinitrotoluene			0.0992	0.0788	J	ug/L		79	50 - 150
4,4'-DDD			0.0992	0.104		ug/L		105	50 - 150
4,4'-DDE			0.0992	0.0997		ug/L		100	50 - 150
4,4'-DDT			0.0992	0.132		ug/L		133	50 - 150
Acenaphthene			0.0992	0.0987	J	ug/L		99	50 - 150
Acenaphthylene			0.0992	0.0913	J	ug/L		92	50 - 150
Acetochlor			0.0496	0.0481	J	ug/L		97	50 - 150
Alachlor			0.0496	0.0650		ug/L		131	50 - 150
alpha-BHC			0.0992	0.101		ug/L		102	50 - 150
alpha-Chlordane			0.0248	ND		ug/L		95	50 - 150
Anthracene			0.0198	ND		ug/L		92	50 - 150
Atrazine			0.0496	0.0605		ug/L		122	50 - 150
Benz(a)anthracene			0.0496	0.0481	J	ug/L		97	50 - 150
Benzo[a]pyrene			0.0198	0.0185	J	ug/L		93	50 - 150
Benzo[b]fluoranthene			0.0198	0.0200		ug/L		101	50 - 150
Benzo[g,h,i]perylene			0.0496	0.0432	J	ug/L		87	50 - 150
Benzo[k]fluoranthene			0.0198	0.0199	J	ug/L		100	50 - 150
beta-BHC			0.0992	0.0927	J	ug/L		93	50 - 150
Bromacil			0.0992	0.140		ug/L		141	50 - 150

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

Lab Sample ID: MRL 380-26937/2-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Butachlor	0.0496	0.0695		ug/L		140	50 - 150
Butylbenzylphthalate	0.149	0.201	J	ug/L		135	50 - 150
Caffeine	0.0496	0.0392	J	ug/L		79	50 - 150
Chlorobenzilate	0.0992	0.0868	J	ug/L		88	50 - 150
Chloroneb	0.0992	0.0995		ug/L		100	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0992	0.136		ug/L		137	50 - 150
Chlorpyrifos	0.0496	0.0551		ug/L		111	50 - 150
Chrysene	0.0198	0.0197	J	ug/L		99	50 - 150
delta-BHC	0.0992	0.122		ug/L		123	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.675	^3+	ug/L		227	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.732		ug/L		123	50 - 150
Diazinon (Qualitative)	0.0992	0.102		ug/L		103	15 - 132
Dibenz(a,h)anthracene	0.0496	0.0403	J	ug/L		81	50 - 150
Diclorvos (DDVP)	0.0496	0.0480	J	ug/L		97	50 - 150
Dieldrin	0.0992	0.104	J	ug/L		105	50 - 150
Diethylphthalate	0.149	0.166	J	ug/L		112	50 - 150
Dimethoate	0.0992	0.0691	J	ug/L		70	35 - 100
Dimethylphthalate	0.298	0.291	J	ug/L		98	50 - 150
Di-n-butyl phthalate	0.298	0.369	J	ug/L		124	49 - 243
Di-n-octyl phthalate	0.0992	0.122		ug/L		123	50 - 150
Endosulfan I (Alpha)	0.0992	0.0939	J	ug/L		95	50 - 150
Endosulfan II (Beta)	0.0992	0.130		ug/L		132	50 - 150
Endosulfan sulfate	0.0992	0.111		ug/L		112	50 - 150
Endrin	0.0992	0.132		ug/L		133	50 - 150
Endrin aldehyde	0.0992	ND		ug/L		81	50 - 150
EPTC	0.0992	0.0988	J	ug/L		100	50 - 150
Fluoranthene	0.0496	0.0527	J	ug/L		106	50 - 150
Fluorene	0.0496	ND		ug/L		99	50 - 150
gamma-Chlordane	0.0248	0.0245	J	ug/L		99	50 - 150
Heptachlor	0.0397	0.0569		ug/L		143	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0512		ug/L		103	50 - 150
Hexachlorobenzene	0.0496	0.0449	J	ug/L		91	50 - 150
Hexachlorocyclopentadiene	0.0496	ND		ug/L		74	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0373	J	ug/L		75	50 - 150
Isophorone	0.0992	0.100	J	ug/L		101	50 - 150
Lindane	0.0397	0.0449		ug/L		113	50 - 150
Malathion	0.0992	0.102		ug/L		102	50 - 150
Methoxychlor	0.0992	0.123		ug/L		124	50 - 150
Metolachlor	0.0496	0.0603		ug/L		122	50 - 150
Metribuzin	0.0496	0.0823	^3+	ug/L		166	50 - 150
Molinate	0.0992	0.0936	J	ug/L		94	50 - 150
Naphthalene	0.0992	0.106	J	ug/L		107	50 - 150
Parathion	0.0992	0.118		ug/L		119	50 - 150
Pendimethalin (Penoxaline)	0.0992	0.126		ug/L		127	50 - 150
Phenanthrene	0.0198	0.0207	J	ug/L		104	50 - 150
Propachlor	0.0496	0.0491	J	ug/L		99	50 - 150
Pyrene	0.0496	0.0503		ug/L		101	50 - 150
Simazine	0.0496	0.0485	J	ug/L		98	50 - 150
Terbacil	0.0992	0.115		ug/L		116	50 - 150

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

Lab Sample ID: MRL 380-26937/2-A
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 26937

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Terbuthylazine			0.0992	0.116		ug/L		117	50 - 150		
Thiobencarb			0.0992	0.126	J	ug/L		127	50 - 150		
trans-Nonachlor			0.0248	ND		ug/L		98	50 - 150		
Trifluralin			0.0992	0.111		ug/L		112	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Triphenylphosphate	*106*		*70 - 130*
Perylene-d12	*96*		*70 - 130*

Lab Sample ID: 380-31149-S-1-A MS
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD	ND		1.95	2.04		ug/L		105	70 - 130		
2,4'-DDE	ND		1.95	2.00		ug/L		103	70 - 130		
2,4'-DDT	ND		1.95	2.04		ug/L		105	70 - 130		
2,4-Dinitrotoluene	ND		1.95	1.91		ug/L		98	70 - 130		
2,6-Dinitrotoluene	ND		1.95	1.78		ug/L		91	70 - 130		
4,4'-DDD	ND		1.95	2.06		ug/L		106	70 - 130		
4,4'-DDE	ND		1.95	1.83		ug/L		94	70 - 130		
4,4'-DDT	ND		1.95	1.82		ug/L		93	70 - 130		
Acenaphthene	ND		1.95	1.76		ug/L		90	70 - 130		
Acenaphthylene	ND		1.95	1.89		ug/L		97	70 - 130		
Acetochlor	ND		1.95	1.91		ug/L		98	70 - 130		
Alachlor	ND		1.95	1.79		ug/L		92	70 - 130		
alpha-BHC	ND		1.95	2.01		ug/L		103	70 - 130		
alpha-Chlordane	ND		1.95	1.73		ug/L		89	70 - 130		
Anthracene	ND		1.95	1.76		ug/L		91	70 - 130		
Atrazine	ND		1.95	2.02		ug/L		104	70 - 130		
Benz(a)anthracene	ND		1.95	2.02		ug/L		104	70 - 130		
Benzo[a]pyrene	ND		1.95	2.05		ug/L		105	70 - 130		
Benzo[b]fluoranthene	ND		1.95	2.00		ug/L		103	70 - 130		
Benzo[g,h,i]perylene	ND		1.95	2.00		ug/L		103	70 - 130		
Benzo[k]fluoranthene	ND		1.95	2.24		ug/L		115	70 - 130		
beta-BHC	ND		1.95	2.01		ug/L		103	70 - 130		
Bromacil	ND		1.95	2.02		ug/L		104	70 - 130		
Butachlor	ND		1.95	2.02		ug/L		104	70 - 130		
Butylbenzylphthalate	ND		1.95	2.19		ug/L		112	70 - 130		
Caffeine	ND		1.95	1.98		ug/L		102	46 - 144		
Chlorobenzilate	ND		1.95	2.03		ug/L		104	70 - 130		
Chloroneb	ND		1.95	1.96		ug/L		101	70 - 130		
Chlorothalonil (Draconil, Bravo)	ND		1.95	1.71		ug/L		88	70 - 130		
Chlorpyrifos	ND		1.95	2.25		ug/L		116	70 - 130		
Chrysene	ND		1.95	1.98		ug/L		102	70 - 130		
delta-BHC	ND		1.95	1.99		ug/L		102	70 - 130		
Di(2-ethylhexyl)adipate	ND	*+ ^3+	1.95	2.21		ug/L		99	70 - 130		

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

Lab Sample ID: 380-31149-S-1-A MS
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bis(2-ethylhexyl) phthalate	ND		1.95	1.85		ug/L		95	70 - 130
Diazinon (Qualitative)	ND		1.95	2.12		ug/L		109	15 - 132
Dibenz(a,h)anthracene	ND		1.95	2.09		ug/L		107	70 - 130
Diclorvos (DDVP)	ND		1.95	1.93		ug/L		99	70 - 130
Dieldrin	ND		1.95	1.91		ug/L		98	70 - 130
Diethylphthalate	ND		1.95	1.97		ug/L		101	70 - 130
Dimethoate	ND		1.95	1.77		ug/L		91	34 - 111
Dimethylphthalate	ND		1.95	1.93		ug/L		99	70 - 130
Di-n-butyl phthalate	ND		3.89	4.05		ug/L		104	70 - 130
Di-n-octyl phthalate	ND		1.95	1.91		ug/L		98	70 - 130
Endosulfan I (Alpha)	ND		1.95	1.91		ug/L		98	70 - 130
Endosulfan II (Beta)	ND		1.95	1.99		ug/L		102	70 - 130
Endosulfan sulfate	ND		1.95	2.11		ug/L		109	70 - 130
Endrin	ND		1.95	2.20		ug/L		113	70 - 130
Endrin aldehyde	ND		1.95	1.47		ug/L		75	70 - 130
EPTC	ND		1.95	2.07		ug/L		106	70 - 130
Fluoranthene	ND		1.95	2.06		ug/L		106	70 - 130
Fluorene	ND		1.95	1.91		ug/L		98	70 - 130
gamma-Chlordane	ND		1.95	1.62		ug/L		83	70 - 130
Heptachlor	ND		1.95	1.96		ug/L		101	70 - 130
Heptachlor epoxide (isomer B)	ND		1.95	1.75		ug/L		90	70 - 130
Hexachlorobenzene	ND		1.95	1.80		ug/L		92	70 - 130
Hexachlorocyclopentadiene	ND		1.95	1.71		ug/L		88	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.95	2.09		ug/L		108	70 - 130
Isophorone	ND		1.95	1.93		ug/L		99	70 - 130
Lindane	ND		1.95	1.96		ug/L		101	70 - 130
Malathion	ND		1.95	2.09		ug/L		107	70 - 130
Methoxychlor	ND		1.95	1.99		ug/L		102	70 - 130
Metolachlor	ND		1.95	2.09		ug/L		107	70 - 130
Metribuzin	ND	^3+	1.95	1.70		ug/L		87	70 - 130
Molinate	ND		1.95	2.21		ug/L		113	70 - 130
Naphthalene	ND		1.95	1.94		ug/L		100	70 - 130
Parathion	ND		1.95	2.04		ug/L		105	70 - 130
Pendimethalin (Penoxaline)	ND		1.95	1.86		ug/L		96	70 - 130
Phenanthrene	ND		1.95	1.86		ug/L		95	70 - 130
Propachlor	ND		1.95	2.22		ug/L		114	70 - 130
Pyrene	ND		1.95	2.20		ug/L		113	70 - 130
Simazine	ND		1.95	2.14		ug/L		110	70 - 130
Terbacil	ND		1.95	1.96		ug/L		101	70 - 130
Terbuthylazine	ND		1.95	1.94		ug/L		100	70 - 130
Thiobencarb	ND		1.95	2.30		ug/L		118	70 - 130
trans-Nonachlor	ND		1.95	2.08		ug/L		107	70 - 130
Trifluralin	ND		1.95	1.81		ug/L		93	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*99*		*70 - 130*
Triphenylphosphate	*107*		*70 - 130*
Perylene-d12	*100*		*70 - 130*

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

Lab Sample ID: 380-31185-J-1-A DU
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2,4'-DDD	ND			ND		ug/L				NC	20
2,4'-DDE	ND			ND		ug/L				NC	20
2,4'-DDT	ND			ND		ug/L				NC	20
2,4-Dinitrotoluene	ND			ND		ug/L				NC	20
2,6-Dinitrotoluene	ND			ND		ug/L				NC	20
4,4'-DDD	ND			ND		ug/L				NC	20
4,4'-DDE	ND			ND		ug/L				NC	20
4,4'-DDT	ND			ND		ug/L				NC	20
Acenaphthene	ND			ND		ug/L				NC	20
Acenaphthylene	ND			ND		ug/L				NC	20
Acetochlor	ND			ND		ug/L				NC	20
Alachlor	ND			ND		ug/L				NC	20
alpha-BHC	ND			ND		ug/L				NC	20
alpha-Chlordane	ND			ND		ug/L				NC	20
Anthracene	ND			ND		ug/L				NC	20
Atrazine	ND			ND		ug/L				NC	20
Benz(a)anthracene	ND			ND		ug/L				NC	20
Benzo[a]pyrene	ND			ND		ug/L				NC	20
Benzo[b]fluoranthene	ND			ND		ug/L				NC	20
Benzo[g,h,i]perylene	ND			ND		ug/L				NC	20
Benzo[k]fluoranthene	ND			ND		ug/L				NC	20
beta-BHC	ND			ND		ug/L				NC	20
Bromacil	ND			ND		ug/L				NC	20
Butachlor	ND			ND		ug/L				NC	20
Butylbenzylphthalate	ND			ND		ug/L				NC	20
Caffeine	ND			ND		ug/L				NC	20
Chlorobenzilate	ND			ND		ug/L				NC	20
Chloroneb	ND			ND		ug/L				NC	20
Chlorothalonil (Draconil, Bravo)	ND			ND		ug/L				NC	20
Chlorpyrifos	ND			ND		ug/L				NC	20
Chrysene	ND			ND		ug/L				NC	20
delta-BHC	ND			ND		ug/L				NC	20
Di(2-ethylhexyl)adipate	ND	*+ ^3+		ND	*+	ug/L				NC	20
Bis(2-ethylhexyl) phthalate	ND			ND		ug/L				NC	20
Diazinon (Qualitative)	ND			ND		ug/L				NC	20
Dibenz(a,h)anthracene	ND			ND		ug/L				NC	20
Diclorvos (DDVP)	ND			ND		ug/L				NC	20
Dieldrin	ND			ND		ug/L				NC	20
Diethylphthalate	ND			ND		ug/L				NC	20
Dimethoate	ND			ND		ug/L				NC	20
Dimethylphthalate	ND			ND		ug/L				NC	20
Di-n-butyl phthalate	ND			ND		ug/L				NC	20
Di-n-octyl phthalate	ND			ND		ug/L				NC	20
Endosulfan I (Alpha)	ND			ND		ug/L				NC	20
Endosulfan II (Beta)	ND			ND		ug/L				NC	20
Endosulfan sulfate	ND			ND		ug/L				NC	20
Endrin	ND			ND		ug/L				NC	20
Endrin aldehyde	ND			ND		ug/L				NC	20

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

Lab Sample ID: 380-31185-J-1-A DU
Matrix: Water
Analysis Batch: 27096

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 26937

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
EPTC	ND			ND		ug/L				NC	20
Fluoranthene	ND			ND		ug/L				NC	20
Fluorene	ND			ND		ug/L				NC	20
gamma-Chlordane	ND			ND		ug/L				NC	20
Heptachlor	ND			ND		ug/L				NC	20
Heptachlor epoxide (isomer B)	ND			ND		ug/L				NC	20
Hexachlorobenzene	ND			ND		ug/L				NC	20
Hexachlorocyclopentadiene	ND			ND		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	ND			ND		ug/L				NC	20
Isophorone	ND			ND		ug/L				NC	20
Lindane	ND			ND		ug/L				NC	20
Malathion	ND			ND		ug/L				NC	20
Methoxychlor	ND			ND		ug/L				NC	20
Metolachlor	ND			ND		ug/L				NC	20
Metribuzin	ND	^3+		ND		ug/L				NC	20
Molinate	ND			ND		ug/L				NC	20
Naphthalene	ND			ND		ug/L				NC	20
Parathion	ND			ND		ug/L				NC	20
Pendimethalin (Penoxaline)	ND			ND		ug/L				NC	20
Total Permethrin (mixed isomers)	ND			ND		ug/L				NC	20
Phenanthrene	ND			ND		ug/L				NC	20
Propachlor	ND			ND		ug/L				NC	20
Pyrene	ND			ND		ug/L				NC	20
Simazine	ND			ND		ug/L				NC	20
Terbacil	ND			ND		ug/L				NC	20
Terbuthylazine	ND			ND		ug/L				NC	20
Thiobencarb	ND			ND		ug/L				NC	20
trans-Nonachlor	ND			ND		ug/L				NC	20
Trifluralin	ND			ND		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Triphenylphosphate	*106*		*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: 102905-B1
Matrix: BlankMatrix
Analysis Batch: O-40056

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40056_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Acenaphthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1

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

Lab Sample ID: 102905-B1
Matrix: BlankMatrix
Analysis Batch: O-40056

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40056_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Biphenyl	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Chrysene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/15/22 00:00	12/25/22 10:08	1
Fluoranthene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Fluorene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Naphthalene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Perylene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Phenanthrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1
Pyrene	ND		0.005	0.001	µg/L		12/15/22 00:00	12/25/22 10:08	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*96*		*27 - 133*	*12/15/22 00:00*	*12/25/22 10:08*	*1*
(d10-Phenanthrene)	*99*		*43 - 129*	*12/15/22 00:00*	*12/25/22 10:08*	*1*
(d12-Chrysene)	*95*		*52 - 144*	*12/15/22 00:00*	*12/25/22 10:08*	*1*
(d12-Perylene)	*80*		*36 - 161*	*12/15/22 00:00*	*12/25/22 10:08*	*1*
(d8-Naphthalene)	*93*		*25 - 125*	*12/15/22 00:00*	*12/25/22 10:08*	*1*

Lab Sample ID: 102905-BS1
Matrix: BlankMatrix
Analysis Batch: O-40056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40056_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.449		µg/L		90	31 - 128
1-Methylphenanthrene	0.5	0.465		µg/L		93	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.463		µg/L		93	55 - 122
2,6-Dimethylnaphthalene	0.5	0.454		µg/L		91	48 - 120
2-Methylnaphthalene	0.5	0.441		µg/L		88	47 - 130
Acenaphthene	0.5	0.463		µg/L		93	53 - 131
Acenaphthylene	0.5	0.467		µg/L		93	43 - 140
Anthracene	0.5	0.469		µg/L		94	58 - 135
Benz[a]anthracene	0.5	0.363		µg/L		73	55 - 145
Benzo[a]pyrene	0.5	0.388		µg/L		78	51 - 143
Benzo[b]fluoranthene	0.5	0.36		µg/L		72	46 - 165
Benzo[e]pyrene	0.5	0.397		µg/L		79	42 - 152
Benzo[g,h,i]perylene	0.5	0.399		µg/L		80	63 - 133
Benzo[k]fluoranthene	0.5	0.403		µg/L		81	56 - 145
Biphenyl	0.5	0.457		µg/L		91	56 - 119

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

Lab Sample ID: 102905-BS1
Matrix: BlankMatrix
Analysis Batch: O-40056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40056_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chrysene			0.5	0.377		µg/L		75	56 - 141		
Dibenz[a,h]anthracene			0.5	0.315		µg/L		63	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.466		µg/L		93	50 - 150		
Dibenzothiophene			0.5	0.467		µg/L		93	46 - 126		
Disalicylidenepropanediamine			50	42.3		µg/L		85	50 - 150		
Fluoranthene			0.5	0.459		µg/L		92	60 - 146		
Fluorene			0.5	0.468		µg/L		94	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.294		µg/L		59	50 - 151		
Naphthalene			0.5	0.436		µg/L		87	41 - 126		
Perylene			0.5	0.377		µg/L		75	48 - 141		
Phenanthrene			0.5	0.472		µg/L		94	67 - 127		
Pyrene			0.5	0.456		µg/L		91	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*88*		*27 - 133*
(d10-Phenanthrene)	*92*		*43 - 129*
(d12-Chrysene)	*79*		*52 - 144*
(d12-Perylene)	*76*		*36 - 161*
(d8-Naphthalene)	*83*		*25 - 125*

Lab Sample ID: 102905-BS2
Matrix: BlankMatrix
Analysis Batch: O-40056

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40056_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.461		µg/L		92	31 - 128	2	30
1-Methylphenanthrene			0.5	0.467		µg/L		93	66 - 127	0	30
2,3,5-Trimethylnaphthalene			0.5	0.471		µg/L		94	55 - 122	1	30
2,6-Dimethylnaphthalene			0.5	0.463		µg/L		93	48 - 120	2	30
2-Methylnaphthalene			0.5	0.458		µg/L		92	47 - 130	4	30
Acenaphthene			0.5	0.475		µg/L		95	53 - 131	2	30
Acenaphthylene			0.5	0.474		µg/L		95	43 - 140	2	30
Anthracene			0.5	0.481		µg/L		96	58 - 135	2	30
Benz[a]anthracene			0.5	0.388		µg/L		78	55 - 145	7	30
Benzo[a]pyrene			0.5	0.417		µg/L		83	51 - 143	6	30
Benzo[b]fluoranthene			0.5	0.381		µg/L		76	46 - 165	5	30
Benzo[e]pyrene			0.5	0.405		µg/L		81	42 - 152	2	30
Benzo[g,h,i]perylene			0.5	0.405		µg/L		81	63 - 133	1	30
Benzo[k]fluoranthene			0.5	0.41		µg/L		82	56 - 145	1	30
Biphenyl			0.5	0.465		µg/L		93	56 - 119	2	30
Chrysene			0.5	0.411		µg/L		82	56 - 141	9	30
Dibenz[a,h]anthracene			0.5	0.334		µg/L		67	55 - 150	6	30
Dibenzo[a,l]pyrene			0.5	0.473		µg/L		95	50 - 150	2	30
Dibenzothiophene			0.5	0.471		µg/L		94	46 - 126	1	30
Disalicylidenepropanediamine			50	47.3		µg/L		95	50 - 150	11	30
Fluoranthene			0.5	0.464		µg/L		93	60 - 146	1	30
Fluorene			0.5	0.471		µg/L		94	58 - 131	0	30
Indeno[1,2,3-cd]pyrene			0.5	0.312		µg/L		62	50 - 151	5	30

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

Lab Sample ID: 102905-BS2
Matrix: BlankMatrix
Analysis Batch: O-40056

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40056_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			0.5	0.458		µg/L		92	41 - 126	6	30
Perylene			0.5	0.382		µg/L		76	48 - 141	1	30
Phenanthrene			0.5	0.483		µg/L		97	67 - 127	3	30
Pyrene			0.5	0.466		µg/L		93	54 - 156	2	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*95*		*27 - 133*
(d10-Phenanthrene)	*98*		*43 - 129*
(d12-Chrysene)	*89*		*52 - 144*
(d12-Perylene)	*84*		*36 - 161*
(d8-Naphthalene)	*91*		*25 - 125*

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

Lab Sample ID: 22VGH7L05B
Matrix: WATER
Analysis Batch: 22VGH7L05

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			12/19/22 12:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*12/19/22 12:45*	*1*

Lab Sample ID: 22VGH7L05L
Matrix: WATER
Analysis Batch: 22VGH7L05

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
GASOLINE			0.500	0.453		mg/L		91	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*101*		*70 - 130*

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

Lab Sample ID: 22DSL035WB
Matrix: WATER
Analysis Batch: 22DSL035W

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			01/05/23 14:59	1
JP5	ND	U	0.050		mg/L			01/05/23 14:59	1
JP8	ND	U	0.050		mg/L			01/05/23 14:59	1
MOTOR OIL	ND	U	0.050		mg/L			01/05/23 14:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE					*01/05/23 14:59*	*1*

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

Lab Sample ID: 22DSL035WB
Matrix: WATER
Analysis Batch: 22DSL035W

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
HEXACOSANE					01/05/23 14:59	1

Lab Sample ID: 22DSL035WL
Matrix: WATER
Analysis Batch: 22DSL035W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.50	2.54		mg/L		102	50 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	94		60 - 130
HEXACOSANE	108		60 - 130

Lab Sample ID: 22J5L035WL
Matrix: WATER
Analysis Batch: 22DSL035W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP5			2.50	2.72		mg/L		109	30 - 160		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	91		60 - 130
HEXACOSANE	102		60 - 130

Lab Sample ID: 22J8L035WL
Matrix: WATER
Analysis Batch: 22DSL035W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP8			2.50	2.89		mg/L		116	30 - 160		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	96		60 - 130
HEXACOSANE	102		60 - 130

GC/MS Semi VOA

Prep Batch: 26937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
MB 380-26937/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-26937/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-26937/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-26937/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-31149-S-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-31185-J-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 27096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	26937
MB 380-26937/1-A	Method Blank	Total/NA	Water	525.2	26937
LCS 380-26937/3-A	Lab Control Sample	Total/NA	Water	525.2	26937
LCSD 380-26937/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	26937
MRL 380-26937/2-A	Lab Control Sample	Total/NA	Water	525.2	26937
380-31149-S-1-A MS	Matrix Spike	Total/NA	Water	525.2	26937
380-31185-J-1-A DU	Duplicate	Total/NA	Water	525.2	26937

Subcontract

Analysis Batch: O-40056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40056_P
102905-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40056_P
102905-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40056_P
102905-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40056_P

Analysis Batch: 22DSL035W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
22DSL035WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22DSL035WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22J5L035WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22J8L035WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	

Analysis Batch: 22VGH7L05

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Subcontract (Continued)

Analysis Batch: 22VGH7L05 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-2	TB MOANALUA WELLS	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VGH7L05B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22VGH7L05L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40056_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-31360-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
102905-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
102905-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
102905-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-31360-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-31360-1

Date Collected: 12/12/22 10:30

Matrix: Drinking Water

Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			26937	OTM3	EA MON	12/15/22 07:21
Total/NA	Analysis	525.2		1	27096	Q8LA	EA MON	12/16/22 16:41
Total/NA	Prep	EPA_625		1	O-40056_P			12/15/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40056	YC		12/25/22 20:28
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7L05	SCerva		12/19/22 20:12
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	22DSL035W	SDees		01/05/23 18:03

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-31360-2

Date Collected: 12/12/22 10:30

Matrix: Water

Date Received: 12/14/22 10:00

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	22VGH7L05	SCerva		12/19/22 20:49

Laboratory References:

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

EA MON = Eurofins Eaton Monrovia, 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016, TEL (626)386-1100

Accreditation/Certification Summary

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

Job ID: 380-31360-1

Laboratory: Eurofins Eaton Monrovia

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

Authority	Program	Identification Number	Expiration Date
Hawaii	State	CA00006	01-08-23

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

Laboratory: Eurofins Eaton Monrovia (Continued)

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

Authority	Program	Identification Number	Expiration Date

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	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	Terbuthylazine
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: 380-31360-1

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

Sample Summary

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

Job ID: 380-31360-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-31360-1	MOANALUA WELLS	Drinking Water	12/12/22 10:30	12/14/22 10:00	HI0000331
380-31360-2	TB MOANALUA WELLS	Water	12/12/22 10:30	12/14/22 10:00	

EMAX LABORATORIES, INC.
3051 Fujita Street
Torrance, CA 90505
Tel: (310)-618-8889

Date: 01-17-2023
EMAX Batch No.: 22L234

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-31360

Enclosed is the Laboratory report for samples received on 12/15/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-31360-1	L234-01	12/12/22	WATER	TPH GASOLINE TPH
380-31360-2	L234-02	12/12/22	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

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

eurofins | Environment Testing

221234 12/15/22 22L234

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-31117.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: EMAX Laboratories Inc		Accreditations Required (See note): State - Hawaii		Job #: 380-31360-1
Address: 3051 Fujita Street, ,	Due Date Requested: 12/30/2022			
City: Torrance	TAT Requested (days):			
State, Zip: CA, 90505	PO #:			
Phone:	WO #:			
Email:	Project #: 38001111			
Project Name: RED-HILL	SSOW#:			
Site: Honolulu BWS Sites				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MOANALUA WELLS (380-31360-1)	12/12/22	10:30 Hawaiian		Water			X	X	6	See Attached Instructions
TB MOANALUA WELLS (380-31360-2)	12/12/22	10:30 Hawaiian		Water			X		2	See Attached Instructions

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

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by: J GREITNER	Date/Time: 12/15/2022 13:50	Company EOA	Received by:	Date/Time: 12-15-22 13:45	Company	
Relinquished by:	Date/Time: 12-15-22 16:40	Company	Received by:	Date/Time: 12/15/22 1640	Company Emax	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact:	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Temp 2.2

SAMPLE RECEIPT FORM 1

EMAX LABORATORIES, INC.

Type of Delivery	Airbill / Tracking Number	ECN 221234
☐ Fedex ☐ UPS ☐ GSO ☑ Others all around		Recipient JHOWIN ZAMORA
☐ EMAX Courier ☐ Client Delivery		Date 12/15/22 Time 1640

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☑ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 2.2 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* _____	*B - S/N* 210760237	*C - S/N* _____	*D - S/N* 210760272	

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2	7,8	D22	1 date & time 12/12/22 1030	R7
			1 date & time 12/8/22 8am	1

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

12/16/22

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

☐ Continue to next page.

LEGEND:

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

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

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

REVIEWS:

Sample Labeling	JHOWIN ZAMORA	JOCELYNE SOLIS-RAMOS
Date	12/15/22	12/15/22

SRF _____ Date 12/16/22

PM _____ Date 12/16/22

AREA FAST
COURIER SERVICE

1146 N. Central Ave., #444 • Glendale, CA 91202
Phone: 818/ 497-4474

INVOICE 20190
CALL NO
REF. NO
DATE 12-15-22

CHARGE TO Eurofins

FROM: Eaton Analy[illegible]
Monrovia

TO: E. Max [illegible]
3035 [illegible]
[illegible]

PACKAGES	DESCRIPTION		CHARGES
		REGULAR	
		RUSH	
1	C[illegible]	ASAP	
		MISC. CHARGES	
		WAITING TIME	
		WEIGHT	
		TOTAL CHARGE	

DRIVER: PICK UP TIME: DELIVERY TIME: 1640

Received By: [signature]

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

380-31360

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

SDG#: 22L234

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-31360

SDG : 22L234

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

A total of two(2) water samples were received on 12/15/22 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7L05B - 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. VGH7L05L/VGH7L05C 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 L220-01M/L220-01S. Refer to Matrix QC summary form for details.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-31360

SDG NO. : 22L234
Instrument ID : H7

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VGH7L05B	1	NA	12/19/2212:45	12/19/2212:45	AL19005A	AL19004A	22VGH7L05	Method Blank
LCS1W	VGH7L05L	1	NA	12/19/2213:23	12/19/2213:23	AL19006A	AL19004A	22VGH7L05	Lab Control Sample (LCS)
LCD1W	VGH7L05C	1	NA	12/19/2214:00	12/19/2214:00	AL19007A	AL19004A	22VGH7L05	LCS Duplicate
380-31360-1	L234-01	1	NA	12/19/2220:12	12/19/2220:12	AL19017A	AL19016A	22VGH7L05	Field Sample
380-31360-2	L234-02	1	NA	12/19/2220:49	12/19/2220:49	AL19018A	AL19016A	22VGH7L05	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/12/22 10:30
Project	: 380-31360	Date Received:	12/15/22
Batch No.	: 22L234	Date Extracted:	12/19/22 20:12
Sample ID	: 380-31360-1	Date Analyzed:	12/19/22 20:12
Lab Samp ID:	L234-01	Dilution Factor:	1
Lab File ID:	AL19017A	Matrix:	WATER
Ext Btch ID:	22VGH7L05	% Moisture:	NA
Calib. Ref.:	AL19016A	Instrument ID:	H7

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	0.0346	0.0400	87	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:	12/12/22 10:30
Project	: 380-31360	Date Received:	12/15/22
Batch No.	: 22L234	Date Extracted:	12/19/22 20:49
Sample ID	: 380-31360-2	Date Analyzed:	12/19/22 20:49
Lab Samp ID:	L234-02	Dilution Factor:	1
Lab File ID:	AL19018A	Matrix:	WATER
Ext Btch ID:	22VGH7L05	% Moisture:	NA
Calib. Ref.:	AL19016A	Instrument ID:	H7

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	0.0365	0.0400	91	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

QC SUMMARIES

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/19/22 12:45
Project	: 380-31360	Date Received:	12/19/22
Batch No.	: 22L234	Date Extracted:	12/19/22 12:45
Sample ID	: MBLK1W	Date Analyzed:	12/19/22 12:45
Lab Samp ID:	VGH7L05B	Dilution Factor:	1
Lab File ID:	AL19005A	Matrix:	WATER
Ext Btch ID:	22VGH7L05	% Moisture:	NA
Calib. Ref.:	AL19004A	Instrument ID:	H7

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	0.0340	0.0400	85	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 : 380-31360
BATCH NO. : 22L234
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7L05B	VGH7L05L	VGH7L05C
LAB FILE ID	: AL19005A	AL19006A	AL19007A
DATE PREPARED	: 12/19/22 12:45	12/19/22 13:23	12/19/22 14:00
DATE ANALYZED	: 12/19/22 12:45	12/19/22 13:23	12/19/22 14:00
PREP BATCH	: 22VGH7L05	22VGH7L05	22VGH7L05
CALIBRATION REF	: AL19004A	AL19004A	AL19004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.453	91	0.500	0.447	89	1	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0405	101	0.0400	0.0416	104	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 : 380-31185
BATCH NO. : 22L220
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-31185-1	380-31185-1MS	380-31185-1MSD
LAB SAMPLE ID	: L220-01	L220-01M	L220-01S
LAB FILE ID	: AL19008A	AL19009A	AL19010A
DATE PREPARED	: 12/19/22 14:37	12/19/22 15:14	12/19/22 15:51
DATE ANALYZED	: 12/19/22 14:37	12/19/22 15:14	12/19/22 15:51
PREP BATCH	: 22VGH7L05	22VGH7L05	22VGH7L05
CALIBRATION REF	: AL19004A	AL19004A	AL19004A

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	0.429	86	0.500	0.441	88	3	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0413	103	0.0400	0.0396	99	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-31360

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22L234

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-31360

SDG : 22L234

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/15/22 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL035WB - 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. DSL035WL/DSL035WC 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. Diesel was within MS QC limits in 22L251-01M/22L251-01S. Refer to Matrix QC summary form for details.

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

Sample Analysis
The sample was analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-31360

SDG : 22L234

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/15/22 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL035WB - 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. J5L035WL/J5L035WC 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: 380-31360

SDG : 22L234

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/15/22 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time
The sample was analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL035WB - 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. J8L035WL/J8L035WC 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
Project : 380-31360

SDG NO. : 22L234
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSL035WB	1	NA	01/05/2314:59	12/21/2215:15	LA05009A	LA05003A	22DSL035W	Method Blank
LCS1W	DSL035WL	1	NA	01/05/2315:17	12/21/2215:15	LA05010A	LA05003A	22DSL035W	Lab Control Sample (LCS)
LCD1W	DSL035WC	1	NA	01/05/2315:36	12/21/2215:15	LA05011A	LA05003A	22DSL035W	LCS Duplicate
380-31360-1	L234-01	1	NA	01/05/2318:03	12/21/2215:15	LA05019A	LA05003A	22DSL035W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-31360

SDG NO. : 22L234
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSL035WB	1	NA	01/05/2314:59	12/21/2215:15	LA05009A	LA05004A	22DSL035W	Method Blank
LCS1W	J5L035WL	1	NA	01/05/2315:54	12/21/2215:15	LA05012A	LA05004A	22DSL035W	Lab Control Sample (LCS)
LCD1W	J5L035WC	1	NA	01/05/2316:12	12/21/2215:15	LA05013A	LA05004A	22DSL035W	LCS Duplicate
380-31360-1	L234-01	1	NA	01/05/2318:03	12/21/2215:15	LA05019A	LA05004A	22DSL035W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-31360

SDG NO. : 22L234
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSL035WB	1	NA	01/05/2314:59	12/21/2215:15	LA05009A	LA05005A	22DSL035W	Method Blank
LCS1W	J8L035WL	1	NA	01/05/2316:31	12/21/2215:15	LA05014A	LA05005A	22DSL035W	Lab Control Sample (LCS)
LCD1W	J8L035WC	1	NA	01/05/2316:49	12/21/2215:15	LA05015A	LA05005A	22DSL035W	LCS Duplicate
380-31360-1	L234-01	1	NA	01/05/2318:03	12/21/2215:15	LA05019A	LA05005A	22DSL035W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/12/22 10:30
Project : 380-31360	Date Received: 12/15/22
Batch No. : 22L234	Date Extracted: 12/21/22 15:15
Sample ID : 380-31360-1	Date Analyzed: 01/05/23 18:03
Lab Samp ID: 22L234-01	Dilution Factor: 1
Lab File ID: LA05019A	Matrix: WATER
Ext Btch ID: 22DSL035W	% Moisture: NA
Calib. Ref.: LA05003A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.026	0.013
Motor Oil	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.387	0.525	74	60-130
Hexacosane	0.124	0.131	95	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 : 950ml	Final Volume : 5ml
Prepared by : JMuert	Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/12/22 10:30
Project : 380-31360	Date Received: 12/15/22
Batch No. : 22L234	Date Extracted: 12/21/22 15:15
Sample ID : 380-31360-1	Date Analyzed: 01/05/23 18:03
Lab Samp ID: 22L234-01	Dilution Factor: 1
Lab File ID: LA05019A	Matrix: WATER
Ext Btch ID: 22DSL035W	% Moisture: NA
Calib. Ref.: LA05004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.387	0.525	74	60-130
Hexacosane	0.124	0.131	95	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 : 950ml
Final Volume : 5ml
Prepared by : JMuert
Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/12/22 10:30
Project : 380-31360	Date Received: 12/15/22
Batch No. : 22L234	Date Extracted: 12/21/22 15:15
Sample ID : 380-31360-1	Date Analyzed: 01/05/23 18:03
Lab Samp ID: 22L234-01	Dilution Factor: 1
Lab File ID: LA05019A	Matrix: WATER
Ext Btch ID: 22DSL035W	% Moisture: NA
Calib. Ref.: LA05005A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.052	0.026

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.387	0.525	74	60-130
Hexacosane	0.124	0.131	95	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 : 950ml Final Volume : 5ml
Prepared by : JMuert Analyzed by : CMpang

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/21/22 15:15
Project	: 380-31360	Date Received:	12/21/22
Batch No.	: 22L234	Date Extracted:	12/21/22 15:15
Sample ID	: MBLK1W	Date Analyzed:	01/05/23 14:59
Lab Samp ID:	DSL035WB	Dilution Factor:	1
Lab File ID:	LA05009A	Matrix:	WATER
Ext Btch ID:	22DSL035W	% Moisture:	NA
Calib. Ref.:	LA05003A	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	0.388	0.500	78	60-130
Hexacosane	0.131	0.125	105	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	: JMuert	Analyzed by	: SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-31360
BATCH NO. : 22L234
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSL035WB	DSL035WL	DSL035WC
LAB FILE ID	: LA05009A	LA05010A	LA05011A
DATE PREPARED	: 12/21/22 15:15	12/21/22 15:15	12/21/22 15:15
DATE ANALYZED	: 01/05/23 14:59	01/05/23 15:17	01/05/23 15:36
PREP BATCH	: 22DSL035W	22DSL035W	22DSL035W
CALIBRATION REF	: LA05003A	LA05003A	LA05003A

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	2.54	102	2.50	2.34	94	8	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.468	94	0.500	0.464	93	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:	12/21/22 15:15
Project	: 380-31360	Date Received:	12/21/22
Batch No.	: 22L234	Date Extracted:	12/21/22 15:15
Sample ID	: MBLK1W	Date Analyzed:	01/05/23 14:59
Lab Samp ID:	DSL035WB	Dilution Factor:	1
Lab File ID:	LA05009A	Matrix:	WATER
Ext Btch ID:	22DSL035W	% Moisture:	NA
Calib. Ref.:	LA05004A	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	0.388	0.500	78	60-130
Hexacosane	0.131	0.125	105	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 : JMuert Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-31360
BATCH NO. : 22L234
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSL035WB	J5L035WL	J5L035WC
LAB FILE ID	: LA05009A	LA05012A	LA05013A
DATE PREPARED	: 12/21/22 15:15	12/21/22 15:15	12/21/22 15:15
DATE ANALYZED	: 01/05/23 14:59	01/05/23 15:54	01/05/23 16:12
PREP BATCH	: 22DSL035W	22DSL035W	22DSL035W
CALIBRATION REF	: LA05004A	LA05004A	LA05004A

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	2.72	109	2.50	2.58	103	5	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.454	91	0.500	0.545	109	60-130
Hexacosane	0.125	0.127	102	0.125	0.131	105	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:	12/21/22 15:15
Project	: 380-31360	Date Received:	12/21/22
Batch No.	: 22L234	Date Extracted:	12/21/22 15:15
Sample ID	: MBLK1W	Date Analyzed:	01/05/23 14:59
Lab Samp ID:	DSL035WB	Dilution Factor:	1
Lab File ID:	LA05009A	Matrix:	WATER
Ext Btch ID:	22DSL035W	% Moisture:	NA
Calib. Ref.:	LA05005A	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	0.388	0.500	78	60-130
Hexacosane	0.131	0.125	105	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 : JMuert Analyzed by : CMpang

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-31360
BATCH NO. : 22L234
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSL035WB	J8L035WL	J8L035WC
LAB FILE ID	: LA05009A	LA05014A	LA05015A
DATE PREPARED	: 12/21/22 15:15	12/21/22 15:15	12/21/22 15:15
DATE ANALYZED	: 01/05/23 14:59	01/05/23 16:31	01/05/23 16:49
PREP BATCH	: 22DSL035W	22DSL035W	22DSL035W
CALIBRATION REF	: LA05005A	LA05005A	LA05005A

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	2.89	116	2.50	2.92	117	1	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.482	96	0.500	0.523	105	60-130
Hexacosane	0.125	0.128	102	0.125	0.141	113	60-130

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 : 380-31552
BATCH NO. : 22L251
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-31552-1	380-31552-1MS	380-31552-1MSD
LAB SAMPLE ID	: 22L251-01	22L251-01M	22L251-01S
LAB FILE ID	: LA05023A	LA05024A	LA05025A
DATE PREPARED	: 12/21/22 15:15	12/21/22 15:15	12/21/22 15:15
DATE ANALYZED	: 01/05/23 19:17	01/05/23 19:35	01/05/23 19:53
PREP BATCH	: 22DSL035W	22DSL035W	22DSL035W
CALIBRATION REF	: LA05020A	LA05020A	LA05020A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.62	2.52	96	2.65	2.81	106	11	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.525	0.493	94	0.530	0.528	100	60-130
Hexacosane	0.131	0.131	100	0.132	0.149	112	60-130

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

December 29, 2022

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

Project Name: RED-HILL Project # 38001111 Job # 380-31360-1
Physis Project ID: 1407003-350

Dear Rosalynn,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 12/15/2022. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

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

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: 1407003-350

RED-HILL Project # 38001111 Job # 380-31360-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
102906	MOANALUA WELLS	380-31360-1	12/12/2022	10:30	Samplewater	Not Specified

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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.

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

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

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

PHYSIS Project ID: 1407003-350
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-31360-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 102906-R1	**MOANALUA WELLS 380-31360-1**		**Matrix: Samplewater**				**Sampled: 12-Dec-22 10:30**			**Received: 15-Dec-22**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40056	15-Dec-22	25-Dec-22

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 102906-R1	**MOANALUA WELLS 380-31360-1**		**Matrix: Samplewater**				**Sampled:**	**12-Dec-22 10:30**		**Received:**	**15-Dec-22**
(d10-Acenaphthene)	EPA 625.1	% Recovery	94	1			Total		O-40056	15-Dec-22	25-Dec-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	99	1			Total		O-40056	15-Dec-22	25-Dec-22
(d12-Chrysene)	EPA 625.1	% Recovery	97	1			Total		O-40056	15-Dec-22	25-Dec-22
(d12-Perylene)	EPA 625.1	% Recovery	85	1			Total		O-40056	15-Dec-22	25-Dec-22
(d8-Naphthalene)	EPA 625.1	% Recovery	87	1			Total		O-40056	15-Dec-22	25-Dec-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22

PHYSIS Project ID: 1407003-350
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-31360-1

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-40056	15-Dec-22	25-Dec-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40056	15-Dec-22	25-Dec-22

QUALITY CONTROL REPORT

PHYSIS Project ID: 1407003-350
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-31360-1

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 102905-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40056		Prepared: 15-Dec-22					Analyzed: 25-Dec-22	
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 102905-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40056		Prepared: 15-Dec-22					Analyzed: 25-Dec-22	
Disalicylidenepropanediamin	Total	42.3	1	0.05	0.1	µg/L	50	0	85	50 - 150%	PASS			
Sample ID: 102905-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40056		Prepared: 15-Dec-22					Analyzed: 25-Dec-22	
Disalicylidenepropanediamin	Total	47.3	1	0.05	0.1	µg/L	50	0	95	50 - 150%	PASS	11	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 102905-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-40056		Prepared: 15-Dec-22				Analyzed: 25-Dec-22	
(d10-Acenaphthene)	Total	96	1			% Recovery	100	96	27 - 133%	PASS			
(d10-Phenanthrene)	Total	99	1			% Recovery	100	99	43 - 129%	PASS			
(d12-Chrysene)	Total	95	1			% Recovery	100	95	52 - 144%	PASS			
(d12-Perylene)	Total	80	1			% Recovery	100	80	36 - 161%	PASS			
(d8-Naphthalene)	Total	93	1			% Recovery	100	93	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							

PHYSIS Project ID: 1407003-350
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-31360-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 102905-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-40056		Prepared: 15-Dec-22				Analyzed: 25-Dec-22	
(d10-Acenaphthene)	Total	88	1			% Recovery	100	0	88	27 - 133%	PASS		
(d10-Phenanthrene)	Total	92	1			% Recovery	100	0	92	43 - 129%	PASS		
(d12-Chrysene)	Total	79	1			% Recovery	100	0	79	52 - 144%	PASS		
(d12-Perylene)	Total	76	1			% Recovery	100	0	76	36 - 161%	PASS		
(d8-Naphthalene)	Total	83	1			% Recovery	100	0	83	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.454	1	0.001	0.005	µg/L	0.5	0	91	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	47 - 130%	PASS		
Acenaphthene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	53 - 131%	PASS		
Acenaphthylene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	43 - 140%	PASS		
Anthracene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	58 - 135%	PASS		
Benz[a]anthracene	Total	0.363	1	0.001	0.005	µg/L	0.5	0	73	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.388	1	0.001	0.005	µg/L	0.5	0	78	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.36	1	0.001	0.005	µg/L	0.5	0	72	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.397	1	0.001	0.005	µg/L	0.5	0	79	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.399	1	0.001	0.005	µg/L	0.5	0	80	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.403	1	0.001	0.005	µg/L	0.5	0	81	56 - 145%	PASS		
Biphenyl	Total	0.457	1	0.001	0.005	µg/L	0.5	0	91	56 - 119%	PASS		
Chrysene	Total	0.377	1	0.001	0.005	µg/L	0.5	0	75	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.315	1	0.001	0.005	µg/L	0.5	0	63	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	50 - 150%	PASS		
Dibenzothiophene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	46 - 126%	PASS		

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	0.459	1	0.001	0.005	µg/L	0.5	0	92	60 - 146%	PASS			
Fluorene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.294	1	0.001	0.005	µg/L	0.5	0	59	50 - 151%	PASS			
Naphthalene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	41 - 126%	PASS			
Perylene	Total	0.377	1	0.001	0.005	µg/L	0.5	0	75	48 - 141%	PASS			
Phenanthrene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	67 - 127%	PASS			
Pyrene	Total	0.456	1	0.001	0.005	µg/L	0.5	0	91	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Sample ID: 102905-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**				
		Method: EPA 625.1				Batch ID: O-40056		Prepared: 15-Dec-22			Analyzed: 25-Dec-22				
(d10-Acenaphthene)	Total	95	1			% Recovery	100	0	95	27 - 133%	PASS	8	30	PASS	
(d10-Phenanthrene)	Total	98	1			% Recovery	100	0	98	43 - 129%	PASS	6	30	PASS	
(d12-Chrysene)	Total	89	1			% Recovery	100	0	89	52 - 144%	PASS	12	30	PASS	
(d12-Perylene)	Total	84	1			% Recovery	100	0	84	36 - 161%	PASS	10	30	PASS	
(d8-Naphthalene)	Total	91	1			% Recovery	100	0	91	25 - 125%	PASS	9	30	PASS	
1-Methylnaphthalene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	31 - 128%	PASS	2	30	PASS	
1-Methylphenanthrene	Total	0.467	1	0.001	0.005	µg/L	0.5	0	93	66 - 127%	PASS	0	30	PASS	
2,3,5-Trimethylnaphthalene	Total	0.471	1	0.001	0.005	µg/L	0.5	0	94	55 - 122%	PASS	1	30	PASS	
2,6-Dimethylnaphthalene	Total	0.463	1	0.001	0.005	µg/L	0.5	0	93	48 - 120%	PASS	2	30	PASS	
2-Methylnaphthalene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	47 - 130%	PASS	4	30	PASS	
Acenaphthene	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	53 - 131%	PASS	2	30	PASS	
Acenaphthylene	Total	0.474	1	0.001	0.005	µg/L	0.5	0	95	43 - 140%	PASS	2	30	PASS	
Anthracene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	58 - 135%	PASS	2	30	PASS	
Benz[a]anthracene	Total	0.388	1	0.001	0.005	µg/L	0.5	0	78	55 - 145%	PASS	7	30	PASS	
Benzo[a]pyrene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	51 - 143%	PASS	6	30	PASS	
Benzo[b]fluoranthene	Total	0.381	1	0.001	0.005	µg/L	0.5	0	76	46 - 165%	PASS	5	30	PASS	
Benzo[e]pyrene	Total	0.405	1	0.001	0.005	µg/L	0.5	0	81	42 - 152%	PASS	2	30	PASS	
Benzo[g,h,i]perylene	Total	0.405	1	0.001	0.005	µg/L	0.5	0	81	63 - 133%	PASS	1	30	PASS	
Benzo[k]fluoranthene	Total	0.41	1	0.001	0.005	µg/L	0.5	0	82	56 - 145%	PASS	1	30	PASS	
Biphenyl	Total	0.465	1	0.001	0.005	µg/L	0.5	0	93	56 - 119%	PASS	2	30	PASS	
Chrysene	Total	0.411	1	0.001	0.005	µg/L	0.5	0	82	56 - 141%	PASS	9	30	PASS	
Dibenz[a,h]anthracene	Total	0.334	1	0.001	0.005	µg/L	0.5	0	67	55 - 150%	PASS	6	30	PASS	
Dibenzo[a,l]pyrene	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	50 - 150%	PASS	2	30	PASS	
Dibenzothiophene	Total	0.471	1	0.001	0.005	µg/L	0.5	0	94	46 - 126%	PASS	1	30	PASS	

PHYSIS Project ID: 1407003-350
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-31360-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	0.464	1	0.001	0.005	µg/L	0.5	0	93	60 - 146%	PASS	1	30	PASS	
Fluorene	Total	0.471	1	0.001	0.005	µg/L	0.5	0	94	58 - 131%	PASS	0	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.312	1	0.001	0.005	µg/L	0.5	0	62	50 - 151%	PASS	5	30	PASS	
Naphthalene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	41 - 126%	PASS	6	30	PASS	
Perylene	Total	0.382	1	0.001	0.005	µg/L	0.5	0	76	48 - 141%	PASS	1	30	PASS	
Phenanthrene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	67 - 127%	PASS	3	30	PASS	
Pyrene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	54 - 156%	PASS	2	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 102906

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.2854	7.5511	1111	Anthracene-D10-	1517-22-2	95
32.9804	1.7030	251	Benzoic acid, 2-ethylhexyl ester	5444-75-7	98
10.5609	0.9162	135	Hydroperoxide, 1-ethylbutyl	24254-56-6	90

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_40056

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.2835	3.5058	1111	Anthracene-D10-	1517-22-2	95
10.6879	0.4076	129	Hydroperoxide, 1-methylpentyl	24254-55-5	94

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-31118.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-31360-1
Address: 1904 Wright Circle,	Due Date Requested: 12/30/2022			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (380-31360-1)	12/12/22	10:30 Hawaiian		Water			X	2	See Attached Instructions

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

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	G.PETTNER	12/15/2022 13:40	CEA		12-15-22 1314	
2		12-15-22 - 14:48			12/15/22 1448	Physis
3		Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/1/2023

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS

Project Iteration ID: 1407003-350
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-31360-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: [illegible]
2. Date Received: 12/15/22
3. Time Received: 1448
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - DRS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     i. Start Time:_____
     ii. End Time:_____
     iii. Total Mileage:_____
     iv. Number of Pickups:_____
6. Container Information: (Please put the # of containers or circle none)
   - 1 Cooler
   - __ Styrofoam Cooler
   - ____ Boxes
   - None
   - ___ Carboy(s)
   - __Carboy Trash Can(s)
   - ____ Carboy Cap(s)
   - Other _____
7. ~~What type~~ of ice was used: (Please circle any that apply)
   - Wet Ice
   - Blue Ice
   - Dry Ice
   - Water
   - None
8. Randomly Selected Samples Temperature (°C): 2.1 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: [illegible]

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:

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: EJ	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9767-2757.3
Client Contact: Dr. Ron Fenstemacher	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 3 of 3
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ Yes Δ 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			
Site: Hawaii	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; 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/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/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_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA		
HALAWA WELLS UNITS 1&2				Water									
MOANALUA WELLS	12/12/22	1030	G	Water			X	X	X	X			
TB AIEA GULCH WELLS PUMP1				Water									
TB AIEA GULCH WELLS PUMP2				Water									
TB AIEA WELLS PUMPS 1&2 (260)				Water									
TB HALAWA SHAFT				Water									
TB HALAWA WELLS UNITS 1&2				Water									
TB MOANALUA WELLS	12/12/22	1030		Water							X		

380-31360 COC

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FED EX = 7707 6459 4654		
Relinquished by: [redacted]	Date/Time: 12/13/22 1200	Company	Received by: G. PEITNER	Date/Time: 12/14/2022 10:00	Company EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (751A) 2.8-2.6° GEL-FROZEN

Ver: 06/08/2021 M.E.

Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
Bottle Order #: 2757
Request From Client: 7/20/2022
Date Order Posted: 7/20/2022 11:12:54AM
Order Status: Ready To Process
Prepared By: Davis Haley
Deliver By Date: ***12/12/2022 11:59:00PM***
Lab Project Number: 38001111
PWSID:

Order Completion Information

Creator: Davis Haley
Filled by:
Sent Date:
Sent Via:
Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
6	2	12	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
6	4	24	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
6	2	12	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
6	2	12	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
6	2	12	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		

Total Bottle Summary

Bottle Type Description	Preservative	Bottle Count
Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Aci	12
Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	12
Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	12
VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Aci	12
Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	24
	Total Bottles:	72

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

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-31360-1

Login Number: 31360
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Monrovia

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