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ANALYTICAL REPORT

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

Laboratory Job ID: 380-20762-1
Client Project/Site: RED-HILL

For:
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 308
Honolulu, Hawaii 96843

Attn: Mr. Erwin Kawata

Rachelle Arada

Authorized for release by:
9/30/2022 11:24:09 PM

Rachelle Arada, Manager of Project Management
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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)

Rachelle Arada
Manager of Project Management
9/30/2022 11:24:09 PM

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Definitions/Glossary

Client: City & County of Honolulu
Job ID: 380-20762-1
Project/Site: RED-HILL

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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	Me hod Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Me hod Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Nega ive / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ra io (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: 380-20762-1

Laboratory: Eurofins Eaton Monrovia

Narrative

Job Narrative
380-20762-1

Comments
No additional comments.

Receipt
The samples were received on 9/13/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.9º C.

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

Subcontract non-Sister
See attached subcontract report.

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

Subcontract Work
Methods 8015 Diesel LL (EAL) and Motor Oil, 8015 Gas (Purgeable) LL (EAL): 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: 380-20762-1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065) — Lab Sample ID: 380-20762-1

No Detections.

Client Sample ID: TB: HALAWA WELLS P1 (331-023-WL065) — Lab Sample ID: 380-20762-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-20762-1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)
Date Collected: 09/12/22 10:01
Date Received: 09/13/22 10:00

Lab Sample ID: 380-20762-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
2,4'-DDE	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
2,4'-DDT	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
2,4-Dinitrotoluene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
2,6-Dinitrotoluene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
4,4'-DDD	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
4,4'-DDE	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
4,4'-DDT	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Acenaphthene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Acenaphthylene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Acetochlor	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Alachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
alpha-BHC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
alpha-Chlordane	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Anthracene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:44	1
Atrazine	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Benz(a)anthracene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Benzo[a]pyrene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:44	1
Benzo[b]fluoranthene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:44	1
Benzo[g,h,i]perylene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Benzo[k]fluoranthene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:44	1
beta-BHC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Bromacil	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Butachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Butylbenzylphthalate	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:44	1
Caffeine	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Chlorobenzilate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Chloroneb	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Chlorothalonil (Draconil, Bravo)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Chlorpyrifos	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Chrysene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:44	1
delta-BHC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		09/14/22 10:07	09/15/22 13:44	1
Bis(2-ethylhexyl) ph halate	ND		0.59		ug/L		09/14/22 10:07	09/15/22 13:44	1
Diazinon (Qualitative)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Dibenz(a,h)anthracene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Diclorvos (DDVP)	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Dieldrin	ND		0.20		ug/L		09/14/22 10:07	09/15/22 13:44	1
Die hylphthalate	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:44	1
Dimethoate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Dimethylphthalate	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:44	1
Di-n-butyl phthalate	ND		0.98		ug/L		09/14/22 10:07	09/15/22 13:44	1
Di-n-octyl phthalate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Endosulfan I (Alpha)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Endosulfan II (Beta)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Endosulfan sulfate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Endrin	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Endrin aldehyde	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
EPTC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1

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

Job ID: 380-20762-1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)
Date Collected: 09/12/22 10:01
Date Received: 09/13/22 10:00

Lab Sample ID: 380-20762-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Fluorene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
gamma-Chlordane	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Heptachlor	ND		0.039		ug/L		09/14/22 10:07	09/15/22 13:44	1
Heptachlor epoxide (isomer B)	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Hexachlorobenzene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Hexachlorocyclopentadiene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Indeno[1,2,3-cd]pyrene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Isophorone	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:44	1
Lindane	ND		0.039		ug/L		09/14/22 10:07	09/15/22 13:44	1
Malathion	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Methoxychlor	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Metolachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Metribuzin	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Molinate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Naphthalene	ND		0.29		ug/L		09/14/22 10:07	09/15/22 13:44	1
Parathion	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Pendimethalin (Penoxaline)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		09/14/22 10:07	09/15/22 13:44	1
Phenanthrene	ND		0.039		ug/L		09/14/22 10:07	09/15/22 13:44	1
Propachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Pyrene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Simazine	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Terbacil	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Terbuthylazine	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
Thiobencarb	ND		0.20		ug/L		09/14/22 10:07	09/15/22 13:44	1
trans-Nonachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:44	1
Trifluralin	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
1-Methylnaphthalene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1
2-Methylnaphthalene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*09/14/22 10:07*	*09/15/22 13:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*93*		*70 - 130*	*09/14/22 10:07*	*09/15/22 13:44*	*1*
Triphenylphosphate	*104*		*70 - 130*	*09/14/22 10:07*	*09/15/22 13:44*	*1*
Perylene-d12	*96*		*70 - 130*	*09/14/22 10:07*	*09/15/22 13:44*	*1*

Action Limit Summary

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

Job ID: 380-20762-1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)

Lab Sample ID: 380-20762-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA
Atrazine	ND		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.59	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.59	525.2	Total/NA
Endrin	ND		ug/L	2	0.098	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.049	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.098	525.2	Total/NA
Simazine	ND		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-20762-1

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)
380-20762-1	HALAWA WELLS P1 (331-023-WL0	93	104	96

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-20830-J-2-A DU	Duplicate	91	93	93
380-20830-J-3-A MS	Matrix Spike	95	105	93
LCS 380-17302/3-A	Lab Control Sample	94	104	95
LCSD 380-17302/4-A	Lab Control Sample Dup	95	98	94
MB 380-17302/1-A	Method Blank	91	98	92
MRL 380-17302/2-A	Lab Control Sample	94	97	89

Surrogate Legend

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

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

Lab Sample ID: MB 380-17302/1-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17302

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
2,4'-DDE	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
2,4'-DDT	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
2,4-Dinitrotoluene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
2,6-Dinitrotoluene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
4,4'-DDD	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
4,4'-DDE	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
4,4'-DDT	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Acenaphthene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Acenaphthylene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Acetochlor	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Alachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
alpha-BHC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
alpha-Chlordane	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Anthracene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:12	1
Atrazine	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Benz(a)anthracene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Benzo[a]pyrene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:12	1
Benzo[b]fluoranthene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:12	1
Benzo[g,h,i]perylene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Benzo[k]fluoranthene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:12	1
beta-BHC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Bromacil	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Butachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Butylbenzylphthalate	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:12	1
Caffeine	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Chlorobenzilate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Chloroneb	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Chlorothalonil (Draconil, Bravo)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Chlorpyrifos	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Chrysene	ND		0.020		ug/L		09/14/22 10:07	09/15/22 13:12	1
delta-BHC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		09/14/22 10:07	09/15/22 13:12	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		09/14/22 10:07	09/15/22 13:12	1
Diazinon (Qualitative)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Dibenz(a,h)an hracene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Diclorvos (DDVP)	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Dieldrin	ND		0.20		ug/L		09/14/22 10:07	09/15/22 13:12	1
Diethylphthalate	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:12	1
Dimethoate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Dimethylph halate	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:12	1
Di-n-butyl phthalate	ND		0.98		ug/L		09/14/22 10:07	09/15/22 13:12	1
Di-n-octyl phthalate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Endosulfan I (Alpha)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Endosulfan II (Beta)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Endosulfan sulfate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Endrin	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Endrin aldehyde	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1

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

Lab Sample ID: MB 380-17302/1-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17302

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Fluoranthene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Fluorene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
gamma-Chlordane	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Heptachlor	ND		0.039		ug/L		09/14/22 10:07	09/15/22 13:12	1
Heptachlor epoxide (isomer B)	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Hexachlorobenzene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Hexachlorocyclopentadiene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Indeno[1,2,3-cd]pyrene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Isophorone	ND		0.49		ug/L		09/14/22 10:07	09/15/22 13:12	1
Lindane	ND		0.039		ug/L		09/14/22 10:07	09/15/22 13:12	1
Malathion	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Methoxychlor	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Metolachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Metribuzin	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Molinate	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Naphthalene	ND		0.29		ug/L		09/14/22 10:07	09/15/22 13:12	1
Parathion	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Pendimethalin (Penoxaline)	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		09/14/22 10:07	09/15/22 13:12	1
Phenanthrene	ND		0.039		ug/L		09/14/22 10:07	09/15/22 13:12	1
Propachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Pyrene	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Simazine	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Terbacil	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Terbuthylazine	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
Thiobencarb	ND		0.20		ug/L		09/14/22 10:07	09/15/22 13:12	1
trans-Nonachlor	ND		0.049		ug/L		09/14/22 10:07	09/15/22 13:12	1
Trifluralin	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
1-Methylnaphthalene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1
2-Methylnaphthalene	ND		0.098		ug/L		09/14/22 10:07	09/15/22 13:12	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*09/14/22 10:07*	*09/15/22 13:12*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*91*		*70 - 130*	*09/14/22 10:07*	*09/15/22 13:12*	*1*
Triphenylphosphate	*98*		*70 - 130*	*09/14/22 10:07*	*09/15/22 13:12*	*1*
Perylene-d12	*92*		*70 - 130*	*09/14/22 10:07*	*09/15/22 13:12*	*1*

Lab Sample ID: LCS 380-17302/3-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17302

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD			1.96	2.02		ug/L		103	70 - 130		
2,4'-DDE			1.96	2.01		ug/L		103	70 - 130		
2,4'-DDT			1.96	2.36		ug/L		120	70 - 130		

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

Job ID: 380-20762-1

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

Lab Sample ID: LCS 380-17302/3-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.96	1.63		ug/L		83	70 - 130
2,6-Dinitrotoluene	1.96	1.56		ug/L		79	70 - 130
4,4'-DDD	1.96	2.22		ug/L		113	70 - 130
4,4'-DDE	1.96	2.13		ug/L		109	70 - 130
4,4'-DDT	1.96	2.13		ug/L		109	70 - 130
Acenaphthene	1.96	1.75		ug/L		89	70 - 130
Acenaphthylene	1.96	1.88		ug/L		96	70 - 130
Acetochlor	1.96	1.86		ug/L		95	70 - 130
Alachlor	1.96	1.99		ug/L		101	70 - 130
alpha-BHC	1.96	1.95		ug/L		99	70 - 130
alpha-Chlordane	1.96	1.65		ug/L		84	70 - 130
Anthracene	1.96	1.94		ug/L		99	70 - 130
Atrazine	1.96	2.08		ug/L		106	70 - 130
Benz(a)anthracene	1.96	2.21		ug/L		113	70 - 130
Benzo[a]pyrene	1.96	2.14		ug/L		109	70 - 130
Benzo[b]fluoranthene	1.96	2.04		ug/L		104	70 - 130
Benzo[g,h,i]perylene	1.96	1.98		ug/L		101	70 - 130
Benzo[k]fluoranthene	1.96	2.26		ug/L		115	70 - 130
beta-BHC	1.96	1.99		ug/L		102	70 - 130
Bromacil	1.96	2.54		ug/L		129	70 - 130
Butachlor	1.96	2.07		ug/L		106	70 - 130
Butylbenzylphthalate	1.96	2.11		ug/L		107	70 - 130
Caffeine	1.96	1.34		ug/L		68	45 - 137
Chlorobenzilate	1.96	2.19		ug/L		111	70 - 130
Chloroneb	1.96	2.18		ug/L		111	70 - 130
Chlorothalonil (Draconil, Bravo)	1.96	2.16		ug/L		110	70 - 130
Chlorpyrifos	1.96	2.25		ug/L		115	70 - 130
Chrysene	1.96	2.28		ug/L		116	70 - 130
delta-BHC	1.96	1.96		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	1.96	2.04		ug/L		104	70 - 130
Bis(2-ethylhexyl) phthalate	1.96	1.93		ug/L		98	70 - 130
Diazinon (Qualitative)	1.96	1.84		ug/L		94	15 - 132
Dibenz(a,h)an hracene	1.96	2.06		ug/L		105	70 - 130
Diclorvos (DDVP)	1.96	2.15		ug/L		110	70 - 130
Dieldrin	1.96	2.13		ug/L		108	70 - 130
Diethylphthalate	1.96	1.89		ug/L		96	70 - 130
Dimethoate	1.96	0.904		ug/L		46	35 - 100
Dimethylph halate	1.96	1.88		ug/L		96	70 - 130
Di-n-butyl phthalate	3.92	4.38		ug/L		112	70 - 130
Di-n-octyl phthalate	1.96	1.83		ug/L		93	70 - 130
Endosulfan I (Alpha)	1.96	2.12		ug/L		108	70 - 130
Endosulfan II (Beta)	1.96	2.25		ug/L		115	70 - 130
Endosulfan sulfate	1.96	2.19		ug/L		112	70 - 130
Endrin	1.96	2.01		ug/L		103	70 - 130
Endrin aldehyde	1.96	2.09		ug/L		106	70 - 130
EPTC	1.96	1.96		ug/L		100	70 - 130
Fluoranthene	1.96	2.18		ug/L		111	70 - 130
Fluorene	1.96	1.91		ug/L		97	70 - 130
gamma-Chlordane	1.96	1.73		ug/L		88	70 - 130

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

Lab Sample ID: LCS 380-17302/3-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17302

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Heptachlor			1.96	2.06		ug/L		105	70 - 130		
Heptachlor epoxide (isomer B)			1.96	1.71		ug/L		87	70 - 130		
Hexachlorobenzene			1.96	1.99		ug/L		101	70 - 130		
Hexachlorocyclopentadiene			1.96	2.17		ug/L		111	70 - 130		
Indeno[1,2,3-cd]pyrene			1.96	2.05		ug/L		105	70 - 130		
Isophorone			1.96	1.85		ug/L		94	70 - 130		
Lindane			1.96	2.00		ug/L		102	70 - 130		
Malathion			1.96	2.17		ug/L		111	70 - 130		
Methoxychlor			1.96	2.33		ug/L		119	70 - 130		
Metolachlor			1.96	2.14		ug/L		109	70 - 130		
Metribuzin			1.96	2.07		ug/L		105	70 - 130		
Molinate			1.96	2.05		ug/L		105	70 - 130		
Naphthalene			1.96	1.90		ug/L		97	70 - 130		
Parathion			1.96	2.17		ug/L		111	70 - 130		
Pendimethalin (Penoxaline)			1.96	2.16		ug/L		110	70 - 130		
Phenanthrene			1.96	1.91		ug/L		97	70 - 130		
Propachlor			1.96	2.15		ug/L		109	70 - 130		
Pyrene			1.96	2.23		ug/L		113	70 - 130		
Simazine			1.96	2.30		ug/L		117	70 - 130		
Terbacil			1.96	2.09		ug/L		107	70 - 130		
Terbuthylazine			1.96	2.06		ug/L		105	70 - 130		
Thiobencarb			1.96	1.89		ug/L		97	70 - 130		
trans-Nonachlor			1.96	2.07		ug/L		106	70 - 130		
Trifluralin			1.96	1.96		ug/L		100	70 - 130		
1-Methylnaphthalene			1.96	1.93		ug/L		98	70 - 130		
2-Methylnaphthalene			1.96	1.92		ug/L		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*94*		*70 - 130*
Triphenylphosphate	*104*		*70 - 130*
Perylene-d12	*95*		*70 - 130*

Lab Sample ID: LCSD 380-17302/4-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17302

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD			1.96	2.09		ug/L		107	70 - 130	3	20
2,4'-DDE			1.96	2.04		ug/L		104	70 - 130	1	20
2,4'-DDT			1.96	2.36		ug/L		120	70 - 130	0	20
2,4-Dinitrotoluene			1.96	1.57		ug/L		80	70 - 130	3	20
2,6-Dinitrotoluene			1.96	1.51		ug/L		77	70 - 130	3	20
4,4'-DDD			1.96	2.30		ug/L		117	70 - 130	3	20
4,4'-DDE			1.96	2.15		ug/L		109	70 - 130	1	20
4,4'-DDT			1.96	2.06		ug/L		105	70 - 130	3	20
Acenaphthene			1.96	1.74		ug/L		89	70 - 130	1	20
Acenaphthylene			1.96	1.83		ug/L		93	70 - 130	2	20
Acetochlor			1.96	1.78		ug/L		91	70 - 130	4	20

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

Lab Sample ID: LCSD 380-17302/4-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alachlor	1.96	1.89		ug/L		96	70 - 130	5	20
alpha-BHC	1.96	1.91		ug/L		97	70 - 130	2	20
alpha-Chlordane	1.96	1.52		ug/L		77	70 - 130	8	20
Anthracene	1.96	1.90		ug/L		97	70 - 130	2	20
Atrazine	1.96	1.97		ug/L		100	70 - 130	6	20
Benz(a)anthracene	1.96	2.15		ug/L		110	70 - 130	3	20
Benzo[a]pyrene	1.96	2.08		ug/L		106	70 - 130	3	20
Benzo[b]fluoranthene	1.96	2.04		ug/L		104	70 - 130	0	20
Benzo[g,h,i]perylene	1.96	1.97		ug/L		100	70 - 130	0	20
Benzo[k]fluoranthene	1.96	2.15		ug/L		110	70 - 130	5	20
beta-BHC	1.96	1.90		ug/L		97	70 - 130	5	20
Bromacil	1.96	2.46		ug/L		126	70 - 130	3	20
Butachlor	1.96	2.04		ug/L		104	70 - 130	1	20
Butylbenzylphthalate	1.96	2.06		ug/L		105	70 - 130	2	20
Caffeine	1.96	1.37		ug/L		70	45 - 137	3	20
Chlorobenzilate	1.96	2.18		ug/L		111	70 - 130	0	20
Chloroneb	1.96	2.15		ug/L		110	70 - 130	1	20
Chlorothalonil (Draconil, Bravo)	1.96	2.22		ug/L		113	70 - 130	3	20
Chlorpyrifos	1.96	2.22		ug/L		113	70 - 130	1	20
Chrysene	1.96	2.32		ug/L		118	70 - 130	2	20
delta-BHC	1.96	1.90		ug/L		97	70 - 130	3	20
Di(2-ethylhexyl)adipate	1.96	2.03		ug/L		104	70 - 130	0	20
Bis(2-ethylhexyl) phthalate	1.96	1.96		ug/L		100	70 - 130	2	20
Diazinon (Qualitative)	1.96	1.80		ug/L		92	15 - 132	2	20
Dibenz(a,h)an hracene	1.96	2.07		ug/L		105	70 - 130	0	20
Diclorvos (DDVP)	1.96	2.10		ug/L		107	70 - 130	2	20
Dieldrin	1.96	2.16		ug/L		110	70 - 130	2	20
Diethylphthalate	1.96	1.84		ug/L		94	70 - 130	3	20
Dimethoate	1.96	0.899		ug/L		46	35 - 100	1	20
Dimethylph halate	1.96	1.83		ug/L		93	70 - 130	2	20
Di-n-butyl phthalate	3.93	4.33		ug/L		110	70 - 130	1	20
Di-n-octyl phthalate	1.96	1.83		ug/L		93	70 - 130	0	20
Endosulfan I (Alpha)	1.96	2.08		ug/L		106	70 - 130	2	20
Endosulfan II (Beta)	1.96	2.26		ug/L		115	70 - 130	1	20
Endosulfan sulfate	1.96	2.24		ug/L		114	70 - 130	2	20
Endrin	1.96	1.92		ug/L		98	70 - 130	5	20
Endrin aldehyde	1.96	2.01		ug/L		102	70 - 130	4	20
EPTC	1.96	1.95		ug/L		99	70 - 130	1	20
Fluoranthene	1.96	2.16		ug/L		110	70 - 130	1	20
Fluorene	1.96	1.86		ug/L		95	70 - 130	3	20
gamma-Chlordane	1.96	1.67		ug/L		85	70 - 130	3	20
Heptachlor	1.96	2.08		ug/L		106	70 - 130	1	20
Heptachlor epoxide (isomer B)	1.96	1.68		ug/L		86	70 - 130	2	20
Hexachlorobenzene	1.96	1.97		ug/L		100	70 - 130	1	20
Hexachlorocyclopentadiene	1.96	2.16		ug/L		110	70 - 130	0	20
Indeno[1,2,3-cd]pyrene	1.96	2.01		ug/L		103	70 - 130	2	20
Isophorone	1.96	1.86		ug/L		95	70 - 130	1	20
Lindane	1.96	2.00		ug/L		102	70 - 130	0	20
Malathion	1.96	2.12		ug/L		108	70 - 130	2	20

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

Lab Sample ID: LCSD 380-17302/4-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17302

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methoxychlor			1.96	2.34		ug/L		119	70 - 130	0	20
Metolachlor			1.96	2.15		ug/L		109	70 - 130	0	20
Metribuzin			1.96	1.96		ug/L		100	70 - 130	5	20
Molinate			1.96	2.02		ug/L		103	70 - 130	2	20
Naphthalene			1.96	1.90		ug/L		97	70 - 130	0	20
Parathion			1.96	2.18		ug/L		111	70 - 130	0	20
Pendimethalin (Penoxaline)			1.96	2.12		ug/L		108	70 - 130	2	20
Phenanthrene			1.96	1.89		ug/L		96	70 - 130	1	20
Propachlor			1.96	2.14		ug/L		109	70 - 130	0	20
Pyrene			1.96	2.25		ug/L		114	70 - 130	1	20
Simazine			1.96	2.16		ug/L		110	70 - 130	6	20
Terbacil			1.96	2.08		ug/L		106	70 - 130	1	20
Terbuthylazine			1.96	1.99		ug/L		102	70 - 130	3	20
Thiobencarb			1.96	1.95		ug/L		99	70 - 130	3	20
trans-Nonachlor			1.96	2.01		ug/L		103	70 - 130	3	20
Trifluralin			1.96	2.00		ug/L		102	70 - 130	2	20
1-Methylnaphthalene			1.96	1.89		ug/L		96	70 - 130	2	20
2-Methylnaphthalene			1.96	1.90		ug/L		97	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Triphenylphosphate	*98*		*70 - 130*
Perylene-d12	*94*		*70 - 130*

Lab Sample ID: MRL 380-17302/2-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17302

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD			0.0980	0.124		ug/L		126	50 - 150		
2,4'-DDE			0.0980	0.101		ug/L		103	50 - 150		
2,4'-DDT			0.0980	0.0997		ug/L		102	50 - 150		
2,4-Dinitrotoluene			0.0980	0.0754	J	ug/L		77	50 - 150		
2,6-Dinitrotoluene			0.0980	0.0732	J	ug/L		75	50 - 150		
4,4'-DDD			0.0980	0.110		ug/L		112	50 - 150		
4,4'-DDE			0.0980	0.109		ug/L		111	50 - 150		
4,4'-DDT			0.0980	0.126		ug/L		129	50 - 150		
Acenaphthene			0.0980	0.0953	J	ug/L		97	50 - 150		
Acenaphthylene			0.0980	0.0827	J	ug/L		84	50 - 150		
Acetochlor			0.0490	0.0495	J	ug/L		101	50 - 150		
Alachlor			0.0490	0.0559		ug/L		114	50 - 150		
alpha-BHC			0.0980	0.0959	J	ug/L		98	50 - 150		
alpha-Chlordane			0.0490	0.0532		ug/L		109	50 - 150		
Anthracene			0.0196	ND		ug/L		85	50 - 150		
Atrazine			0.0490	0.0580		ug/L		118	50 - 150		
Benz(a)anthracene			0.0490	0.0515		ug/L		105	50 - 150		
Benzo[a]pyrene			0.0196	0.0218		ug/L		111	50 - 150		
Benzo[b]fluoranthene			0.0196	0.0223		ug/L		114	50 - 150		

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

Lab Sample ID: MRL 380-17302/2-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[g,h,i]perylene	0.0490	0.0438	J	ug/L		89	50 - 150
Benzo[k]fluoranthene	0.0196	0.0214		ug/L		109	50 - 150
beta-BHC	0.0980	0.0932	J	ug/L		95	50 - 150
Bromacil	0.0980	0.102		ug/L		104	50 - 150
Butachlor	0.0490	0.0542		ug/L		111	50 - 150
Butylbenzylphthalate	0.147	0.186	J	ug/L		126	50 - 150
Caffeine	0.0490	0.0251	J	ug/L		51	50 - 150
Chlorobenzilate	0.0980	0.103		ug/L		105	50 - 150
Chloroneb	0.0980	0.113		ug/L		115	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0980	0.0844	J	ug/L		86	50 - 150
Chlorpyrifos	0.0490	0.0502		ug/L		102	50 - 150
Chrysene	0.0196	0.0238		ug/L		121	50 - 150
delta-BHC	0.0980	0.115		ug/L		117	50 - 150
Di(2-ethylhexyl)adipate	0.294	0.340	J	ug/L		115	50 - 150
Bis(2-ethylhexyl) phthalate	0.588	0.704		ug/L		120	50 - 150
Diazinon (Qualitative)	0.0980	0.0906	J	ug/L		92	15 - 132
Dibenz(a,h)an hracene	0.0490	0.0438	J	ug/L		89	50 - 150
Diclorvos (DDVP)	0.0490	0.0546		ug/L		111	50 - 150
Dieldrin	0.0980	0.102	J	ug/L		104	50 - 150
Diethylphthalate	0.147	0.157	J	ug/L		106	50 - 150
Dimethoate	0.0980	0.0379	J	ug/L		39	35 - 100
Dimethylph halate	0.294	0.281	J	ug/L		95	50 - 150
Di-n-butyl phthalate	0.294	0.379	J	ug/L		129	49 - 243
Di-n-octyl phthalate	0.0980	0.119		ug/L		121	50 - 150
Endosulfan I (Alpha)	0.0980	0.0980		ug/L		100	50 - 150
Endosulfan II (Beta)	0.0980	0.102		ug/L		104	50 - 150
Endosulfan sulfate	0.0980	0.0861	J	ug/L		88	50 - 150
Endrin	0.0980	0.122		ug/L		124	50 - 150
Endrin aldehyde	0.0980	0.108		ug/L		110	50 - 150
EPTC	0.0980	0.0991		ug/L		101	50 - 150
Fluoranthene	0.0490	0.0462	J	ug/L		94	50 - 150
Fluorene	0.0490	0.0509		ug/L		104	50 - 150
gamma-Chlordane	0.0490	0.0523		ug/L		107	50 - 150
Heptachlor	0.0392	0.0545		ug/L		139	50 - 150
Heptachlor epoxide (isomer B)	0.0490	0.0468	J	ug/L		96	50 - 150
Hexachlorobenzene	0.0490	0.0413	J	ug/L		84	50 - 150
Hexachlorocyclopentadiene	0.0490	0.0492		ug/L		100	50 - 150
Indeno[1,2,3-cd]pyrene	0.0490	0.0424	J	ug/L		87	50 - 150
Isophorone	0.0980	0.0999	J	ug/L		102	50 - 150
Lindane	0.0490	0.0393		ug/L		80	50 - 150
Malathion	0.0980	0.0897	J	ug/L		92	50 - 150
Methoxychlor	0.0980	0.137		ug/L		139	50 - 150
Metolachlor	0.0490	0.0524		ug/L		107	50 - 150
Metribuzin	0.0490	0.0638		ug/L		130	50 - 150
Molinate	0.0980	0.0984		ug/L		100	50 - 150
Naphthalene	0.0980	0.103	J	ug/L		105	50 - 150
Parathion	0.0980	0.119		ug/L		122	50 - 150
Pendimethalin (Penoxaline)	0.0980	0.126		ug/L		128	50 - 150
Phenanthrene	0.0196	0.0186	J	ug/L		95	50 - 150

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

Lab Sample ID: MRL 380-17302/2-A
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	0.0490	0.0478	J	ug/L		97	50 - 150
Pyrene	0.0490	0.0464	J	ug/L		95	50 - 150
Simazine	0.0490	0.0392	J	ug/L		80	50 - 150
Terbacil	0.0980	0.108		ug/L		110	50 - 150
Terbuthylazine	0.0980	0.104		ug/L		106	50 - 150
Thiobencarb	0.0980	0.113	J	ug/L		115	50 - 150
trans-Nonachlor	0.0490	0.0364	J	ug/L		74	50 - 150
Trifluralin	0.0980	0.108		ug/L		110	50 - 150
1-Methylnaphthalene	0.0980	0.111		ug/L		113	50 - 150
2-Methylnaphthalene	0.0980	0.106		ug/L		108	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*94*		*70 - 130*
Triphenylphosphate	*97*		*70 - 130*
Perylene-d12	*89*		*70 - 130*

Lab Sample ID: 380-20830-J-3-A MS
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.96	2.07		ug/L		106	70 - 130
2,4'-DDE	ND		1.96	2.13		ug/L		109	70 - 130
2,4'-DDT	ND		1.96	2.49		ug/L		127	70 - 130
2,4-Dinitrotoluene	ND		1.96	1.78		ug/L		91	70 - 130
2,6-Dinitrotoluene	ND		1.96	1.72		ug/L		88	70 - 130
4,4'-DDD	ND		1.96	2.32		ug/L		118	70 - 130
4,4'-DDE	ND		1.96	2.21		ug/L		113	70 - 130
4,4'-DDT	ND		1.96	2.32		ug/L		118	70 - 130
Acenaphthene	ND		1.96	1.79		ug/L		91	70 - 130
Acenaphthylene	ND		1.96	1.88		ug/L		96	70 - 130
Acetochlor	ND		1.96	1.91		ug/L		98	70 - 130
Alachlor	ND		1.96	2.04		ug/L		104	70 - 130
alpha-BHC	ND		1.96	2.00		ug/L		102	70 - 130
alpha-Chlordane	ND		1.96	1.77		ug/L		91	70 - 130
Anthracene	ND		1.96	1.83		ug/L		93	70 - 130
Atrazine	ND		1.96	2.08		ug/L		106	70 - 130
Benz(a)anthracene	ND		1.96	2.33		ug/L		119	70 - 130
Benzo[a]pyrene	ND		1.96	2.13		ug/L		109	70 - 130
Benzo[b]fluoranthene	ND		1.96	2.13		ug/L		109	70 - 130
Benzo[g,h,i]perylene	ND		1.96	2.02		ug/L		103	70 - 130
Benzo[k]fluoranthene	ND		1.96	2.31		ug/L		118	70 - 130
beta-BHC	ND		1.96	2.05		ug/L		105	70 - 130
Bromacil	ND	F1	1.96	2.69	F1	ug/L		137	70 - 130
Butachlor	ND		1.96	2.14		ug/L		109	70 - 130
Butylbenzylphthalate	ND		1.96	2.18		ug/L		111	70 - 130
Caffeine	ND		1.96	1.69		ug/L		86	46 - 144
Chlorobenzilate	ND		1.96	2.26		ug/L		115	70 - 130

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

Lab Sample ID: 380-20830-J-3-A MS
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroneb	ND		1.96	2.19		ug/L		112	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.96	2.22		ug/L		113	70 - 130
Chlorpyrifos	ND		1.96	2.36		ug/L		120	70 - 130
Chrysene	ND		1.96	2.31		ug/L		118	70 - 130
delta-BHC	ND		1.96	2.03		ug/L		104	70 - 130
Di(2-ethylhexyl)adipate	ND		1.96	2.15		ug/L		110	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.96	2.06		ug/L		105	70 - 130
Diazinon (Qualitative)	ND		1.96	1.91		ug/L		98	15 - 132
Dibenz(a,h)an hracene	ND		1.96	2.16		ug/L		110	70 - 130
Diclorvos (DDVP)	ND		1.96	2.14		ug/L		109	70 - 130
Dieldrin	ND		1.96	2.22		ug/L		114	70 - 130
Diethylphthalate	ND		1.96	1.88		ug/L		96	70 - 130
Dimethoate	ND		1.96	1.05		ug/L		54	34 - 111
Dimethylph halate	ND		1.96	1.92		ug/L		98	70 - 130
Di-n-butyl phthalate	ND		3.92	4.48		ug/L		114	70 - 130
Di-n-octyl phthalate	ND		1.96	1.92		ug/L		98	70 - 130
Endosulfan I (Alpha)	ND		1.96	2.22		ug/L		113	70 - 130
Endosulfan II (Beta)	ND		1.96	2.33		ug/L		119	70 - 130
Endosulfan sulfate	ND		1.96	2.35		ug/L		120	70 - 130
Endrin	ND		1.96	2.03		ug/L		104	70 - 130
Endrin aldehyde	ND		1.96	1.97		ug/L		101	70 - 130
EPTC	ND		1.96	1.96		ug/L		100	70 - 130
Fluoranthene	ND		1.96	2.29		ug/L		117	70 - 130
Fluorene	ND		1.96	1.97		ug/L		100	70 - 130
gamma-Chlordane	ND		1.96	1.86		ug/L		95	70 - 130
Heptachlor	ND		1.96	2.07		ug/L		106	70 - 130
Heptachlor epoxide (isomer B)	ND		1.96	1.85		ug/L		94	70 - 130
Hexachlorobenzene	ND		1.96	2.03		ug/L		104	70 - 130
Hexachlorocyclopentadiene	ND		1.96	2.35		ug/L		120	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.96	2.13		ug/L		109	70 - 130
Isophorone	ND		1.96	1.87		ug/L		96	70 - 130
Lindane	ND		1.96	2.09		ug/L		107	70 - 130
Malathion	ND		1.96	2.26		ug/L		115	70 - 130
Methoxychlor	ND		1.96	2.31		ug/L		118	70 - 130
Metolachlor	ND		1.96	2.21		ug/L		113	70 - 130
Metribuzin	ND		1.96	1.97		ug/L		101	70 - 130
Molinate	ND		1.96	2.05		ug/L		105	70 - 130
Naphthalene	ND		1.96	1.92		ug/L		98	70 - 130
Parathion	ND		1.96	2.24		ug/L		114	70 - 130
Pendimethalin (Penoxaline)	ND		1.96	2.27		ug/L		116	70 - 130
Phenanthrene	ND		1.96	1.95		ug/L		100	70 - 130
Propachlor	ND		1.96	2.16		ug/L		111	70 - 130
Pyrene	ND		1.96	2.33		ug/L		119	70 - 130
Simazine	ND		1.96	2.28		ug/L		116	70 - 130
Terbacil	ND		1.96	2.19		ug/L		112	70 - 130
Terbuthylazine	ND		1.96	2.07		ug/L		106	70 - 130
Thiobencarb	ND		1.96	1.93		ug/L		98	70 - 130
trans-Nonachlor	ND		1.96	2.23		ug/L		114	70 - 130
Trifluralin	ND		1.96	2.10		ug/L		107	70 - 130

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

Lab Sample ID: 380-20830-J-3-A MS
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	ND		1.96	1.92		ug/L		98	70 - 130
2-Methylnaphthalene	ND		1.96	1.93		ug/L		99	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*95*		*70 - 130*
Triphenylphosphate	*105*		*70 - 130*
Perylene-d12	*93*		*70 - 130*

Lab Sample ID: 380-20830-J-2-A DU
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 17302

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		ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20

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

Lab Sample ID: 380-20830-J-2-A DU
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 17302

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Dibenz(a,h)an hracene	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
Dimethylph halate	ND			ND		ug/L				NC	20
Di-n-butyl phthalate	ND			ND		ug/L				NC	20
Di-n-octyl phthalate	ND			ND		ug/L				NC	20
Endosulfan I (Alpha)	ND			ND		ug/L				NC	20
Endosulfan II (Beta)	ND			ND		ug/L				NC	20
Endosulfan sulfate	ND			ND		ug/L				NC	20
Endrin	ND			ND		ug/L				NC	20
Endrin aldehyde	ND			ND		ug/L				NC	20
EPTC	ND			ND		ug/L				NC	20
Fluoranthene	ND			ND		ug/L				NC	20
Fluorene	ND			ND		ug/L				NC	20
gamma-Chlordane	ND			ND		ug/L				NC	20
Heptachlor	ND			ND		ug/L				NC	20
Heptachlor epoxide (isomer B)	ND			ND		ug/L				NC	20
Hexachlorobenzene	ND			ND		ug/L				NC	20
Hexachlorocyclopentadiene	ND			ND		ug/L				NC	20
Indeno[1,2,3-cd]pyrene	ND			ND		ug/L				NC	20
Isophorone	ND			ND		ug/L				NC	20
Lindane	ND			ND		ug/L				NC	20
Malathion	ND			ND		ug/L				NC	20
Methoxychlor	ND			ND		ug/L				NC	20
Metolachlor	ND			ND		ug/L				NC	20
Metribuzin	ND			ND		ug/L				NC	20
Molinate	ND			ND		ug/L				NC	20
Naphthalene	ND			ND		ug/L				NC	20
Parathion	ND			ND		ug/L				NC	20
Pendimethalin (Penoxaline)	ND			ND		ug/L				NC	20
Total Permethrin (mixed isomers)	ND			ND		ug/L				NC	20
Phenanthrene	ND			ND		ug/L				NC	20
Propachlor	ND			ND		ug/L				NC	20
Pyrene	ND			ND		ug/L				NC	20
Simazine	ND			ND		ug/L				NC	20
Terbacil	ND			ND		ug/L				NC	20
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
1-Methylnaphthalene	ND			ND		ug/L				NC	20
2-Methylnaphthalene	ND			ND		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*91*		*70 - 130*
Triphenylphosphate	*93*		*70 - 130*

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

Lab Sample ID: 380-20830-J-2-A DU
Matrix: Water
Analysis Batch: 17480

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 17302

Surrogate	DU %Recovery	DU Qualifier	Limits
Perylene-d12	*93*		*70 - 130*

QC Association Summary

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

Job ID: 380-20762-1

GC/MS Semi VOA

Prep Batch: 17302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20762-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	525.2	
MB 380-17302/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-17302/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-17302/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-17302/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-20830-J-3-A MS	Matrix Spike	Total/NA	Water	525.2	
380-20830-J-2-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 17480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-20762-1	HALAWA WELLS P1 (331-023-WL065)	Total/NA	Drinking Water	525.2	17302
MB 380-17302/1-A	Method Blank	Total/NA	Water	525.2	17302
LCS 380-17302/3-A	Lab Control Sample	Total/NA	Water	525.2	17302
LCSD 380-17302/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	17302
MRL 380-17302/2-A	Lab Control Sample	Total/NA	Water	525.2	17302
380-20830-J-3-A MS	Matrix Spike	Total/NA	Water	525.2	17302
380-20830-J-2-A DU	Duplicate	Total/NA	Water	525.2	17302

Lab Chronicle

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

Job ID: 380-20762-1

Client Sample ID: HALAWA WELLS P1 (331-023-WL065)
Date Collected: 09/12/22 10:01
Date Received: 09/13/22 10:00

Lab Sample ID: 380-20762-1
Matrix: Drinking Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			17302	UMV1	EA MON	09/14/22 10:07
Total/NA	Analysis	525.2		1	17480	Q8LA	EA MON	09/15/22 13:44

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: 380-20762-1

Laboratory: Eurofins Eaton Monrovia

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	1-Methylnaphthalene
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	2-Methylnaphthalene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	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)an hracene
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	Dimethylph halate
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

Client: City & County of Honolulu
Job ID: 380-20762-1
Project/Site: RED-HILL

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	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	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: 380-20762-1

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: 380-20762-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-20762-1	HALAWA WELLS P1 (331-023-WL065)	Drinking Water	09/12/22 10:01	09/13/22 10:00
380-20762-2	TB: HALAWA WELLS P1 (331-023-WL065)	Water	09/12/22 10:01	09/13/22 10:00

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

Date: 09-28-2022
EMAX Batch No.: 22I160

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-20762

Enclosed is the Laboratory report for samples received on 09/14/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-20762-1	I160-01	09/12/22	WATER	TPH GASOLINE
				TPH DIESEL & MOTOR OIL
380-20762-2	I160-02	09/12/22	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,

For CP

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

22I160

eurofins | Environment Testing America

9/30/2022

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-21711.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: EMAX Laboratories Inc		Accreditations Required (See note): State - Hawaii		Job #: 380-20762-1
Address: 3051 Fujita Street, ,	Due Date Requested: 9/20/2022			
City: Torrance	TAT Requested (days):			
State, Zip: CA, 90505				
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 (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 Diesel LL (EAL) and Motor Oil)/ 8015 Diesel LL (EAL) and Motor Oil	Total Number of containers	Special Instructions/Note:
	Preservation Code:										
1	HALAWA WELLS P1 (331-023-WL065) (380-20762-1)	9/12/22	10:01 Hawaiian		Water			X	X		See Attached Instructions
2	TB: HALAWA WELLS P1 (331-023-WL065) (380-20762-2)	9/12/22	10:01 Hawaiian		Water			X			See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon out 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 complicance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples ar e 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		9/14/22 1128	EMAX		9/14/22 1128	EMAX
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3		Date/Time:	Company	Received by:	Date/Time:	Company

Cooler Temperature(s) °C and Other Remarks: 1.1|0.9 C|F-0.2

EMAX LABORATORIES, INC.

REFERENCE: EMAX-SM02 Rev. 12

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 22I160
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Derek Sholl
☐ EMAX Courier ☑ Client Delivery		Date 9/14/22 Time 1128

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 ☐

correction factor -0.2

Temperatures (Cool, ≤6 °C but not frozen) ☑ Cooler 1 1.1/0.9 °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
1	1-6	D10		R8

9/14/22 AB 9/19/22

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

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

LEGEND:

☐ **Continue to next page.**

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

REVIEWS:

Sample Labeling JHOOVIN Tamora [signature] Date 9/14/22 9/14/22

SRF [signature] Date 9/14/22

PM AB Date 9/19/22

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

380-20762

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

SDG#: 22I160

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-20762

SDG : 22I160

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

A total of two(2) water samples were received on 09/14/22 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. VG39I11B - 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. VG39I11L/VG39I11C 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 I150-01M/I150-01S. 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 : 380-20762

SDG NO. : 22I160
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VG39I11B	1	NA	09/14/2215:43	09/14/2215:43	EI14006A	EI14005A	22VG39I11	Method Blank
LCS1W	VG39I11L	1	NA	09/14/2216:22	09/14/2216:22	EI14007A	EI14005A	22VG39I11	Lab Control Sample (LCS)
LCD1W	VG39I11C	1	NA	09/14/2217:00	09/14/2217:00	EI14008A	EI14005A	22VG39I11	LCS Duplicate
380-20762-1	I160-01	1	NA	09/15/2200:03	09/15/2200:03	EI14019A	EI14016A	22VG39I11	Field Sample
380-20762-2	I160-02	1	NA	09/15/2200:41	09/15/2200:41	EI14020A	EI14016A	22VG39I11	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:	09/12/22 10:01
Project	: 380-20762	Date Received:	09/14/22
Batch No.	: 221160	Date Extracted:	09/15/22 00:03
Sample ID	: 380-20762-1	Date Analyzed:	09/15/22 00:03
Lab Samp ID:	I160-01	Dilution Factor:	1
Lab File ID:	EI14019A	Matrix:	WATER
Ext Btch ID:	22VG39111	% Moisture:	NA
Calib. Ref.:	EI14016A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0340	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

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/12/22 10:01
Project	: 380-20762	Date Received:	09/14/22
Batch No.	: 221160	Date Extracted:	09/15/22 00:41
Sample ID	: 380-20762-2	Date Analyzed:	09/15/22 00:41
Lab Samp ID:	I160-02	Dilution Factor:	1
Lab File ID:	EI14020A	Matrix:	WATER
Ext Btch ID:	22VG39I11	% Moisture:	NA
Calib. Ref.:	EI14016A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0339	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

QC SUMMARIES

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/14/22 15:43
Project	: 380-20762	Date Received:	09/14/22
Batch No.	: 221160	Date Extracted:	09/14/22 15:43
Sample ID	: MBLK1W	Date Analyzed:	09/14/22 15:43
Lab Samp ID:	VG39111B	Dilution Factor:	1
Lab File ID:	EI14006A	Matrix:	WATER
Ext Btch ID:	22VG39111	% Moisture:	NA
Calib. Ref.:	EI14005A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	ND	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0338	0.0400	84	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 : 380-20762
BATCH NO. : 22I160
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39I11B	VG39I11L	VG39I11C
LAB FILE ID	: EI14006A	EI14007A	EI14008A
DATE PREPARED	: 09/14/22 15:43	09/14/22 16:22	09/14/22 17:00
DATE ANALYZED	: 09/14/22 15:43	09/14/22 16:22	09/14/22 17:00
PREP BATCH	: 22VG39I11	22VG39I11	22VG39I11
CALIBRATION REF	: EI14005A	EI14005A	EI14005A

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	0.467	93	0.500	0.465	93	0	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0439	110	0.0400	0.0444	111	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 : 810-36951
BATCH NO. : 22I150
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 810-36951-1	810-36951-1MS	810-36951-1MSD
LAB SAMPLE ID	: I150-01	I150-01M	I150-01S
LAB FILE ID	: EI14009A	EI14010A	EI14011A
DATE PREPARED	: 09/14/22 17:39	09/14/22 18:17	09/14/22 18:56
DATE ANALYZED	: 09/14/22 17:39	09/14/22 18:17	09/14/22 18:56
PREP BATCH	: 22VG39I11	22VG39I11	22VG39I11
CALIBRATION REF	: EI14005A	EI14005A	EI14005A

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	0.477	95	0.500	0.473	95	1	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0437	109	0.0400	0.0433	108	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-20762

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22I160

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-20762

SDG : 22I160

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 09/14/22 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. DSI021WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSI021WL. 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 22I184-01M/22I184-01S. Refer to Matrix QC summary form for details.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-20762
SDG NO. : 22I160
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	DSI021WB	1	NA	09/21/2220:06	09/20/2213:00	LI20108A	LI20094A	22DSI021W	Method Blank
LCS1W	DSI021WL	1	NA	09/21/2220:25	09/20/2213:00	LI20109A	LI20094A	22DSI021W	Lab Control Sample (LCS)
380-20762-1	I160-01	1	NA	09/21/2223:11	09/20/2213:00	LI20118A	LI20115A	22DSI021W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/12/22 10:01
Project	: 380-20762	Date Received:	09/14/22
Batch No.	: 221160	Date Extracted:	09/20/22 13:00
Sample ID	: 380-20762-1	Date Analyzed:	09/21/22 23:11
Lab Samp ID:	221160-01	Dilution Factor:	1
Lab File ID:	LI20118A	Matrix:	WATER
Ext Btch ID:	22DSI021W	% Moisture:	NA
Calib. Ref.:	LI20115A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.027	0.014
Motor Oil	ND	0.054	0.027

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.334	0.540	62	60-130
Hexacosane	0.107	0.135	79	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	: 930ml	Final Volume	: 5ml
Prepared by	: DLi	Analyzed by	: SDeeso

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	09/20/22 13:00
Project	: 380-20762	Date Received:	09/20/22
Batch No.	: 22I160	Date Extracted:	09/20/22 13:00
Sample ID	: MBLK1W	Date Analyzed:	09/21/22 20:06
Lab Samp ID:	DSI021WB	Dilution Factor:	1
Lab File ID:	LI20108A	Matrix:	WATER
Ext Btch ID:	22DSI021W	% Moisture:	NA
Calib. Ref.:	LI20094A	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	0.358	0.500	72	60-130
Hexacosane	0.0961	0.125	77	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume	: 5ml
Prepared by	: DLi	Analyzed by	: SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-20762
BATCH NO. : 22I160
METHOD : 3520C/8015B

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSI021WB	DSI021WL
LAB FILE ID	: LI20108A	LI20109A
DATE PREPARED	: 09/20/22 13:00	09/20/22 13:00
DATE ANALYZED	: 09/21/22 20:06	09/21/22 20:25
PREP BATCH	: 22DSI021W	22DSI021W
CALIBRATION REF	: LI20094A	LI20094A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.52	101	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.356	71	60-130
Hexacosane	0.125	0.111	89	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-20912
BATCH NO. : 22I184
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-20912-1	380-20912-1MS	380-20912-1MSD
LAB SAMPLE ID	: 22I184-01	22I184-01M	22I184-01S
LAB FILE ID	: LI20124A	LI20126A	LI20127A
DATE PREPARED	: 09/20/22 13:00	09/20/22 13:00	09/20/22 13:00
DATE ANALYZED	: 09/22/22 01:01	09/22/22 01:38	09/22/22 01:56
PREP BATCH	: 22DSI021W	22DSI021W	22DSI021W
CALIBRATION REF	: LI20115A	LI20115A	LI20115A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.58	2.60	101	2.45	2.61	107	0	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.515	0.387	75	0.490	0.315	64	60-130
Hexacosane	0.129	0.132	103	0.123	0.129	105	60-130

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

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

September 24, 2022

Debbie Frank
Eurofins Eaton Analytical
750 Royal Oaks Drive
Suite 100
Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-20762-1
Physis Project ID: 1407003-293

Dear Debbie,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 9/14/2022. 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: 1407003-293

RED-HILL Project # 38001111 Job # 380-20762-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
99988	HALAWA WELLS P1	331-023-WL065 (380-20762-1)	9/12/2022	10:01	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

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

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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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

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CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

PHYSIS Project ID: 1407003-293
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-20762-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 99988-R1	**HALAWA WELLS P1 331-023-WL065**	**Matrix: Samplewater**					**Sampled: 12-Sep-22 10:01**			**Received: 14-Sep-22**	
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-38114	14-Sep-22	18-Sep-22

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 99988-R1	**HALAWA WELLS P1 331-023-WL065**	**Matrix: Samplewater**					**Sampled:**	**12-Sep-22 10:01**		**Received:**	**14-Sep-22**
(d10-Acenaphthene)	EPA 625.1	% Recovery	86	1			Total		O-38114	14-Sep-22	18-Sep-22
(d10-Phenanthrene)	EPA 625.1	% Recovery	84	1			Total		O-38114	14-Sep-22	18-Sep-22
(d12-Chrysene)	EPA 625.1	% Recovery	60	1			Total		O-38114	14-Sep-22	18-Sep-22
(d12-Perylene)	EPA 625.1	% Recovery	86	1			Total		O-38114	14-Sep-22	18-Sep-22
(d8-Naphthalene)	EPA 625.1	% Recovery	88	1			Total		O-38114	14-Sep-22	18-Sep-22
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22

PHYSIS Project ID: 1407003-293
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-20762-1

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-38114	14-Sep-22	18-Sep-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38114	14-Sep-22	18-Sep-22

QUALITY CONTROL REPORT

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: 99987-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-38114		Prepared: 13-Sep-22			Analyzed: 17-Sep-22			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 99987-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-38114		Prepared: 13-Sep-22			Analyzed: 17-Sep-22			
Disalicylidenepropanediamin	Total	37.7	1	0.05	0.1	µg/L	50	0	75	50 - 150%	PASS			
Sample ID: 99987-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-38114		Prepared: 13-Sep-22			Analyzed: 17-Sep-22			
Disalicylidenepropanediamin	Total	41.4	1	0.05	0.1	µg/L	50	0	83	50 - 150%	PASS	10	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: 99987-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-38114		Prepared: 13-Sep-22		Analyzed: 17-Sep-22			
(d10-Acenaphthene)	Total	93	1			% Recovery	100	93	65 - 113%	PASS			
(d10-Phenanthrene)	Total	87	1			% Recovery	100	87	80 - 111%	PASS			
(d12-Chrysene)	Total	83	1			% Recovery	100	83	60 - 139%	PASS			
(d12-Perylene)	Total	95	1			% Recovery	100	95	36 - 161%	PASS			
(d8-Naphthalene)	Total	95	1			% Recovery	100	95	44 - 119%	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: 1407003-293
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-20762-1

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: 99987-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-38114		Prepared: 13-Sep-22				Analyzed: 17-Sep-22	
(d10-Acenaphthene)	Total	92	1			% Recovery	100	0	92	65 - 113%	PASS		
(d10-Phenanthrene)	Total	94	1			% Recovery	100	0	94	80 - 111%	PASS		
(d12-Chrysene)	Total	77	1			% Recovery	100	0	77	60 - 139%	PASS		
(d12-Perylene)	Total	105	1			% Recovery	100	0	105	36 - 161%	PASS		
(d8-Naphthalene)	Total	92	1			% Recovery	100	0	92	44 - 119%	PASS		
1-Methylnaphthalene	Total	0.464	1	0.001	0.005	µg/L	0.5	0	93	49 - 117%	PASS		
1-Methylphenanthrene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	57 - 120%	PASS		
2,6-Dimethylnaphthalene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	54 - 117%	PASS		
2-Methylnaphthalene	Total	0.459	1	0.001	0.005	µg/L	0.5	0	92	47 - 130%	PASS		
Acenaphthene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	53 - 131%	PASS		
Acenaphthylene	Total	0.46	1	0.001	0.005	µg/L	0.5	0	92	43 - 140%	PASS		
Anthracene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	58 - 135%	PASS		
Benz[a]anthracene	Total	0.399	1	0.001	0.005	µg/L	0.5	0	80	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.533	1	0.001	0.005	µg/L	0.5	0	107	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.553	1	0.001	0.005	µg/L	0.5	0	111	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.553	1	0.001	0.005	µg/L	0.5	0	111	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	56 - 145%	PASS		
Biphenyl	Total	0.473	1	0.001	0.005	µg/L	0.5	0	95	56 - 119%	PASS		
Chrysene	Total	0.414	1	0.001	0.005	µg/L	0.5	0	83	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	0.643	1	0.001	0.005	µg/L	0.5	0	129	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.248	1	0.001	0.005	µg/L	0.5	0	50	50 - 150%	PASS		
Dibenzothiophene	Total	0.475	1	0.001	0.005	µg/L	0.5	0	95	75 - 113%	PASS		

PHYSIS Project ID: 1407003-293
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-20762-1

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	0.48	1	0.001	0.005	µg/L	0.5	0	96	60 - 146%	PASS			
Fluorene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.597	1	0.001	0.005	µg/L	0.5	0	119	50 - 151%	PASS			
Naphthalene	Total	0.453	1	0.001	0.005	µg/L	0.5	0	91	41 - 126%	PASS			
Perylene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	48 - 141%	PASS			
Phenanthrene	Total	0.48	1	0.001	0.005	µg/L	0.5	0	96	67 - 127%	PASS			
Pyrene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	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: 99987-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**			**Received:**			
		Method: EPA 625.1				Batch ID: O-38114		Prepared: 13-Sep-22			Analyzed: 17-Sep-22			
(d10-Acenaphthene)	Total	86	1			% Recovery	100	0	86	65 - 113%	PASS	7	30	PASS
(d10-Phenanthrene)	Total	83	1			% Recovery	100	0	83	80 - 111%	PASS	12	30	PASS
(d12-Chrysene)	Total	66	1			% Recovery	100	0	66	60 - 139%	PASS	15	30	PASS
(d12-Perylene)	Total	98	1			% Recovery	100	0	98	36 - 161%	PASS	7	30	PASS
(d8-Naphthalene)	Total	89	1			% Recovery	100	0	89	44 - 119%	PASS	3	30	PASS
1-Methylnaphthalene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	49 - 117%	PASS	9	30	PASS
1-Methylphenanthrene	Total	0.411	1	0.001	0.005	µg/L	0.5	0	82	66 - 127%	PASS	11	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.443	1	0.001	0.005	µg/L	0.5	0	89	57 - 120%	PASS	9	30	PASS
2,6-Dimethylnaphthalene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	54 - 117%	PASS	6	30	PASS
2-Methylnaphthalene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	47 - 130%	PASS	7	30	PASS
Acenaphthene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	53 - 131%	PASS	5	30	PASS
Acenaphthylene	Total	0.433	1	0.001	0.005	µg/L	0.5	0	87	43 - 140%	PASS	6	30	PASS
Anthracene	Total	0.438	1	0.001	0.005	µg/L	0.5	0	88	58 - 135%	PASS	7	30	PASS
Benz[a]anthracene	Total	0.348	1	0.001	0.005	µg/L	0.5	0	70	55 - 145%	PASS	13	30	PASS
Benzo[a]pyrene	Total	0.551	1	0.001	0.005	µg/L	0.5	0	110	51 - 143%	PASS	3	30	PASS
Benzo[b]fluoranthene	Total	0.522	1	0.001	0.005	µg/L	0.5	0	104	46 - 165%	PASS	7	30	PASS
Benzo[e]pyrene	Total	0.52	1	0.001	0.005	µg/L	0.5	0	104	42 - 152%	PASS	7	30	PASS
Benzo[g,h,i]perylene	Total	0.474	1	0.001	0.005	µg/L	0.5	0	95	63 - 133%	PASS	5	30	PASS
Benzo[k]fluoranthene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	56 - 145%	PASS	3	30	PASS
Biphenyl	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	56 - 119%	PASS	5	30	PASS
Chrysene	Total	0.356	1	0.001	0.005	µg/L	0.5	0	71	56 - 141%	PASS	16	30	PASS
Dibenz[a,h]anthracene	Total	0.649	1	0.001	0.005	µg/L	0.5	0	130	55 - 150%	PASS	1	30	PASS
Dibenzo[a,l]pyrene	Total	0.286	1	0.001	0.005	µg/L	0.5	0	57	50 - 150%	PASS	13	30	PASS
Dibenzothiophene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	75 - 113%	PASS	10	30	PASS

PHYSIS Project ID: 1407003-293
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-20762-1

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	0.436	1	0.001	0.005	µg/L	0.5	0	87	60 - 146%	PASS	10	30	PASS	
Fluorene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	58 - 131%	PASS	7	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.599	1	0.001	0.005	µg/L	0.5	0	120	50 - 151%	PASS	1	30	PASS	
Naphthalene	Total	0.444	1	0.001	0.005	µg/L	0.5	0	89	41 - 126%	PASS	2	30	PASS	
Perylene	Total	0.452	1	0.001	0.005	µg/L	0.5	0	90	48 - 141%	PASS	2	30	PASS	
Phenanthrene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	67 - 127%	PASS	9	30	PASS	
Pyrene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	54 - 156%	PASS	8	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 99988

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.5086	7.0264	1111	Anthracene-D10	1517-22-2	95
			No identifiable TICs were detected in this sample.		

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank Batch O-38114

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.5116	7.6559	1111	Anthracene-D10-	1719-06-8	97
			No identifiable TICs were detected in this sample.		

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 America

9/30/2022

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-21712.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Debbie.Frank@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-20762-1
Address: 1904 Wright Circle,	Due Date Requested: 9/20/2022			
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:						
HALAWA WELLS P1 (331-023-WL065) (380-20762-1)	9/12/22	10:01 Hawaiian		Water			X	2	See Attached Instructions

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Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon out 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 complicance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples ar e 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
[signature]	9/14/22 1356	EAA	[signature]	9/14/22 13:58	Physis
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

PHYSIS
TERRA FAUNA FLORA AQUA AURA
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.

Project Iteration ID: 1407003-293
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-20762-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: B.H
2. Date Received: 9/14/22
3. Time Received: 13:58
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - (Client) • UPS • Area Fast • DRS
   - FedEx • GSO/GLS • Ontrac • PAMS
   - PHYSIS Driver:
     - i. Start Time:_____ iii. Total Mileage:_____
     - ii. End Time:_____ 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): 3.3 Used I/R Thermometer # LZ

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

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

Notes:

CHAIN OF CUSTODY RECORD

eurofins | Eaton Analytical

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: MY

SAMPLES LOGGED IN BY: _____

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

SAMPLE TEMP RECEIVED AT:

☐ Colton / No. California / Arizona _____ °C (Compliance: 4 ± 2 °C)

☒ Monrovia 4.9 °C (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: Frozen X Partially Frozen _____ Thawed _____ Wet Ice _____ No Ice _____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER

COMPANY/AGENCY NAME: BWS HONOLULU	**PROJECT CODE:** Red Hill Special	**COMPLIANCE SAMPLES** ☐ (check for yes) - Requires state forms	**NON-COMPLIANCE SAMPLES** X (check for yes) REGULATION INVOLVED: _____
EEA CLIENT CODE:	**COC ID:**	**SAMPLE GROUP:** Weekly_RED_HILL (2022)	Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, Phase V, NPDES, FDA,)
TAT requested: rush by adv notice only	STD __ 1 wk _X_ 3 day ___ 2 day ___ 1 day ___	***SEE ATTACHED BOTTLE ORDER FOR ANALYSES*** ☐ (check for yes), ***OR***	
		list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)	

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX*	FIELD DATA	FIELD DATA	525.2 PREC + (MOD) 525plus TICS (1L)	625 PAH + MS/MSD Volume (1L)	Subcontract - 8015 Diesel and Motor Oil_C (1L)	Subcontract - 8015 Gas (Purgeable) (40mL)	8015 Gas_C TB (40mL)	SAMPLER COMMENTS
9/12/22	1001	Halawa Wells Pump 1	331-023	RGW			2	2	2	4	2	

380-20762 COC

Temp Blank: 4 °C

* **MATRIX TYPES:** **RSW** = Raw Surface Water; **RGW** = Raw Ground Water; **CFW** = Chlor(am)inated Finished Water; **FW** = Other Finished Water; **SEAW** = Sea Water; **WW** = Waste Water; **BW** = Bottled Water; **SW** = Storm Water; **SO** = Soil; **SL** = Sludge; **O** = Other - Please Identify

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:	[redacted]	Lesli Laanui	Honolulu Board of Water Supply	9/12/2022	1001
RELINQUISHED BY:		Lesli Laanui	Honolulu Board of Water Supply	9/12/2022	1200
RECEIVED BY:	Heidi Castro	Heidi Castro	EEA	9/13/22	1000
RELINQUISHED BY:					
RECEIVED BY:					

PAGE 1 OF 1

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9/30/2022

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INTERNAL CHAIN OF CUSTODY RECORD

EEA Folder Number:

SAMPLE TEMP RECEIVED:
Note: If samples are out of temperature range, let the ASMs know. ASMs will determine whether to proceed with analysis or not.
SAMPLES REC'D DAY OF COLLECTION? Yes / No

IR Gun ID = 630 A (Observation= 5.0 °C) (Corr.Factor -0.1 °C) (Final = 4.9 °C)

TYPE OF ICE: Real ____ Synthetic X No Ice ____

CONDITION OF ICE: Frozen X Partially Frozen ____ Thawed ____ N/A ____

METHOD OF SHIPMENT: Pick-Up / Walk-In / (FedEx) / UPS / DHL / Area Fast / Top Line / Other: ____

Compliance Acceptance Criteria:

1) Chemistry: >0, ≤6°C, not frozen (NELAP) (If received after 24 hrs of sample collection)

2) Microbiology, Distribution: < 10°C, not frozen (can be ≥10°C if received on ice the same day as sample collection, within 8 hours)

3) Microbiology, Surface Water: < 10°C (If received after 2 hours of sample collection)

If out of temperature range for both Chemistry and Microbiology samples and temperature does not confirm, then measure the temperature of each quadrant and record each temperature of the quadrants

1 = (Observation ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)	2 = (Observation ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)
3 = (Observation ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)	4 = (Observation ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

4 Dioxin (1613 or 2,3,7,8 TCDD): must be between 0-4 °C, not frozen (If received after 24 hrs of sample collection)

5) pH Check, Manufacturer: ____ Lot Number: ____ pH strip type: 0 - 14 or ____ Expiration Date: ____ Results: ____

6) Chlorine check, Manufacturer: Sensafe, Lot No.: ____ Expiration Date: ____ Results ____

7) VOA and Radon Headspace: No Samples with Headspace: ☐ Samples with Headspace (see below): ☐

Headspace Documentation (use additional VOC and Radon Internal COFC for additional bottles)

Exempt from headspace concerns: Methods 515.4, HAA(6251,552), 505, 8PME, @OH, 532LOMS, 558, 536, Anatoxin, LCMS methods using 40 ml vials, International clients

Samp ID	Bottle #	None/<6 mm	>6mm	Test	Samp ID	Bottle #	None/<6 mm	>6mm	Test	Samp ID	Bottle #	None/<6 mm	>6mm	Test	Samp ID	Bottle #	None/<6 mm	>6mm	Test

Note Sample IDs which have dissimilar headspace (i.e. potential sampling errors): ____

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RECEIVED BY:	Heidi Castro	Heidi Castro	Eurofins Eaton Analytical	9/13/22	1000
SAMPLES CHECKED AGAINST COC BY:	[signature]	Mark Urrutia	Eurofins Eaton Analytical	9/13/22	1245

Page ___ of ___

QA FO-FRM5504 (1.25.21) Ver 9

ORIGIN ID:HIKA (808) 748-5840
BWS CHEMLAB
HONOLULU BOARD OF WATER SUPPLY
630 S. BERETANIA ST.
CHEMICAL LABORATORY
HONOLULU, HI 96843
UNITED STATES US

SHIP DATE: 12SEP22
ACTWGT: 75.00 LB
CAD: 100205419/INET4530

BILL RECIPIENT

TO **C CHUCK**
EUROFINS EATON ANALYTICAL, INC
750 ROYAL OAKS DR
SUITE 100
MONROVIA CA 91016
(626) 386-1178 REF
INV
PO DEPT

581J1/ECBC/FE2D

FedEx Express

J223022081201uv

TUE - 13 SEP 10:30A
PRIORITY OVERNIGHT

TRK# 7779 1186 3785
0201

WZ WHPA

91016
CA-US BUR

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-20762-1

Login Number: 20762

List Source: Eurofins Eaton Monrovia

List Number: 1

Creator: Ngo, Theodore

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 leg ble 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	