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ANALYTICAL REPORT

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

Laboratory Job ID: 380-17089-1
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:
10/25/2022 10:53:32 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
10/25/2022 10:53:32 PM

Table of Contents

Definitions/Glossary

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

Job ID: 380-17089-1

Qualifiers

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

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

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 380-17089-1

Laboratory: Eurofins Eaton Monrovia

Narrative

Job Narrative
380-17089-1

Comments
No additional comments.

Receipt
The samples were received on 8/17/2022 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.4º C, 1.7º C and 5.4º C.

GC/MS Semi VOA
Method 525.2: LCS low for multiple analytes - possible disk issue in extraction department. Samples are past Hold time for re-extraction. Caffeine, Dimethoate and Metribuzin

Method 525.2: The continuing calibration verification (CCV) associated with batch 380-15268 recovered above the upper control limit for Di(2-ethylhexyl)adipate and Dimethoate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

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: 380-17089-1

Client Sample ID: Halawa Shaft Static (Viewing Pool) — Lab Sample ID: 380-17089-1

No Detections.

Client Sample ID: TB Halawa Shaft Static (Viewing Pool) — Lab Sample ID: 380-17089-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-17089-1

Client Sample ID: Halawa Shaft Static (Viewing Pool)
Date Collected: 08/15/22 09:30
Date Received: 08/17/22 11:00

Lab Sample ID: 380-17089-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
2,4'-DDE	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
2,4'-DDT	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
2,4-Dinitrotoluene	ND	*1	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
2,6-Dinitrotoluene	ND	*1	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
4,4'-DDD	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
4,4'-DDE	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
4,4'-DDT	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Acenaphthene	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Acenaphthylene	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Acetochlor	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Alachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
alpha-BHC	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
alpha-Chlordane	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Anthracene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 17:43	1
Atrazine	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Benz(a)anthracene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Benzo[a]pyrene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 17:43	1
Benzo[b]fluoranthene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 17:43	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Benzo[k]fluoranthene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 17:43	1
beta-BHC	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Bromacil	ND	*+ *1	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Butachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Butylbenzylphthalate	ND		0.50		ug/L		08/26/22 09:00	08/29/22 17:43	1
Caffeine	ND	*- *1	0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Chlorobenzilate	ND	*+	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Chloroneb	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Chlorothalonil (Draconil, Bravo)	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Chlorpyrifos	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Chrysene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 17:43	1
delta-BHC	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		08/26/22 09:00	08/29/22 17:43	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		08/26/22 09:00	08/29/22 17:43	1
Diazinon (Qualitative)	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Diclorvos (DDVP)	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Dieldrin	ND		0.20		ug/L		08/26/22 09:00	08/29/22 17:43	1
Diethylphthalate	ND		0.50		ug/L		08/26/22 09:00	08/29/22 17:43	1
Dimethoate	ND	*- *1	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Dimethylphthalate	ND		0.50		ug/L		08/26/22 09:00	08/29/22 17:43	1
Di-n-butyl phthalate	ND		1.0		ug/L		08/26/22 09:00	08/29/22 17:43	1
Di-n-octyl phthalate	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Endosulfan I (Alpha)	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Endosulfan II (Beta)	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Endosulfan sulfate	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Endrin	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Endrin aldehyde	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
EPTC	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1

Client Sample ID: Halawa Shaft Static (Viewing Pool)
Date Collected: 08/15/22 09:30
Date Received: 08/17/22 11:00

Lab Sample ID: 380-17089-1
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Fluorene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
gamma-Chlordane	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Heptachlor	ND	^3+	0.040		ug/L		08/26/22 09:00	08/29/22 17:43	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Hexachlorobenzene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Isophorone	ND		0.50		ug/L		08/26/22 09:00	08/29/22 17:43	1
Lindane	ND		0.040		ug/L		08/26/22 09:00	08/29/22 17:43	1
Malathion	ND	*+	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Methoxychlor	ND	^3+	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Metolachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Metribuzin	ND	*- *1	0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Molinate	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Naphthalene	ND		0.30		ug/L		08/26/22 09:00	08/29/22 17:43	1
Parathion	ND	^3+	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Pendimethalin (Penoxaline)	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		08/26/22 09:00	08/29/22 17:43	1
Phenanthrene	ND		0.040		ug/L		08/26/22 09:00	08/29/22 17:43	1
Propachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Pyrene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Simazine	ND	*1	0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Terbacil	ND	*1	0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Terbuthylazine	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
Thiobencarb	ND		0.20		ug/L		08/26/22 09:00	08/29/22 17:43	1
trans-Nonachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 17:43	1
Trifluralin	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
1-Methylnaphthalene	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1
2-Methylnaphthalene	ND		0.10		ug/L		08/26/22 09:00	08/29/22 17:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.54*	*T J*	*ug/L*		*2.67*		*08/26/22 09:00*	*08/29/22 17:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*93*		*70 - 130*	*08/26/22 09:00*	*08/29/22 17:43*	*1*
Triphenylphosphate	*116*		*70 - 130*	*08/26/22 09:00*	*08/29/22 17:43*	*1*
Perylene-d12	*95*		*70 - 130*	*08/26/22 09:00*	*08/29/22 17:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Acenaphthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Acenaphthylene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Anthracene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1

Client Sample ID: Halawa Shaft Static (Viewing Pool)

Lab Sample ID: 380-17089-1

Date Collected: 08/15/22 09:30

Matrix: Water

Date Received: 08/17/22 11:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Biphenyl	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Chrysene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Dibenzothiophene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		08/22/22 00:00	08/30/22 21:35	1
Fluoranthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Fluorene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Naphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Perylene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Phenanthrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1
Pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 21:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*64*		*45 - 118*	*08/22/22 00:00*	*08/30/22 21:35*	*1*
(d10-Phenanthrene)	*64*		*56 - 123*	*08/22/22 00:00*	*08/30/22 21:35*	*1*
(d12-Chrysene)	*76*		*36 - 142*	*08/22/22 00:00*	*08/30/22 21:35*	*1*
(d12-Perylene)	*72*		*36 - 161*	*08/22/22 00:00*	*08/30/22 21:35*	*1*
(d8-Naphthalene)	*59*		*20 - 112*	*08/22/22 00:00*	*08/30/22 21:35*	*1*

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			08/23/22 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*89*		*60 - 140*		*08/23/22 16:36*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			08/23/22 00:04	1
MOTOR OIL	ND	U	0.051		mg/L			08/23/22 00:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*68*		*60 - 130*		*08/23/22 00:04*	*1*
HEXACOSANE	*91*		*60 - 130*		*08/23/22 00:04*	*1*

Client Sample ID: TB Halawa Shaft Static (Viewing Pool)

Lab Sample ID: 380-17089-2

Date Collected: 08/15/22 09:30

Matrix: Water

Date Received: 08/17/22 11:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			08/23/22 18:22	1

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

Job ID: 380-17089-1

Client Sample ID: TB Halawa Shaft Static (Viewing Pool)
Date Collected: 08/15/22 09:30
Date Received: 08/17/22 11:00

Lab Sample ID: 380-17089-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	94		60 - 140		08/23/22 18:22	1

Action Limit Summary

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

Job ID: 380-17089-1

Client Sample ID: Halawa Shaft Static (Viewing Pool) — Lab Sample ID: 380-17089-1

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	0.050	525.2	Total/NA
Atrazine	ND		ug/L	3	0.050	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.60	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.60	525.2	Total/NA
Endrin	ND		ug/L	2	0.10	525.2	Total/NA
Heptachlor	ND	^3+	ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.050	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.050	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.050	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.040	525.2	Total/NA
Methoxychlor	ND	^3+	ug/L	40	0.10	525.2	Total/NA
Simazine	ND	*1	ug/L	4	0.050	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-17089-1

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)
380-16699-B-1-A MS	Matrix Spike	92	118	98
380-16699-B-2-A DU	Duplicate	95	110	90
380-17089-1	Halawa Shaft Static (Viewing Pool)	93	116	95
LCS 380-15033/3-A	Lab Control Sample	93	114	96
LCSD 380-15033/4-A	Lab Control Sample Dup	91	112	96
MB 380-15033/1-A	Method Blank	93	110	90
MRL 380-15033/2-A	Lab Control Sample	91	111	95

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(65-113)	(80-111)	(60-139)	(44-119)	(36-161)
99461-B1	Method Blank	94	93	99	87	91
99461-BS1	Lab Control Sample	107	94	90	108	101
99461-BS2	Lab Control Sample Dup	104	100	93	84	96

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(45-118)	(56-123)	(36-142)	(20-112)	(36-161)
380-17089-1	Halawa Shaft Static (Viewing Po	64	64	76	59	72

Surrogate Legend

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

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
22VGH7H09C	LCD	118

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO (Continued)

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
22VGH7H09L	Lab Control Sample	118

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-17089-1	Halawa Shaft Static (Viewing Po	89

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
22H242-01M	Matrix Spike	109
22H242-01S	Matrix Spike Duplicate	116

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	
22VGH7H09B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-17089-1	Halawa Shaft Static (Viewing Po	68	91

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-17089-1
Project/Site: RED-HILL

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

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

		Percent Surrogate Recovery (Acceptance Limits)								
		BFB								
Lab Sample ID	Client Sample ID	(60-140)								
380-17089-2	TB Halawa Shaft Static (Viewing	94								

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)								
		BB	XACOSAI							
Lab Sample ID	Client Sample ID									
22DSH034WB	Method Blank									

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

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

		Percent Surrogate Recovery (Acceptance Limits)								
		BB	XACOSAI							
Lab Sample ID	Client Sample ID	(60-130)	(60-130)							
22DSH034WL	Lab Control Sample	75	93							

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Lab Sample ID: MB 380-15033/1-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 15033

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
2,4'-DDE	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
2,4'-DDT	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
2,4-Dinitrotoluene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
2,6-Dinitrotoluene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
4,4'-DDD	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
4,4'-DDE	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
4,4'-DDT	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Acenaphthene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Acenaphthylene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Acetochlor	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Alachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
alpha-BHC	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
alpha-Chlordane	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Anthracene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 12:13	1
Atrazine	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Benz(a)anthracene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Benzo[a]pyrene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 12:13	1
Benzo[b]fluoranthene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 12:13	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Benzo[k]fluoranthene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 12:13	1
beta-BHC	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Bromacil	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Butachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Butylbenzylphthalate	ND		0.50		ug/L		08/26/22 09:00	08/29/22 12:13	1
Caffeine	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Chlorobenzilate	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Chloroneb	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Chlorpyrifos	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Chrysene	ND		0.020		ug/L		08/26/22 09:00	08/29/22 12:13	1
delta-BHC	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		08/26/22 09:00	08/29/22 12:13	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		08/26/22 09:00	08/29/22 12:13	1
Diazinon (Qualitative)	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Diclorvos (DDVP)	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Dieldrin	ND		0.20		ug/L		08/26/22 09:00	08/29/22 12:13	1
Diethylphthalate	ND		0.50		ug/L		08/26/22 09:00	08/29/22 12:13	1
Dimethoate	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Dimethylphthalate	ND		0.50		ug/L		08/26/22 09:00	08/29/22 12:13	1
Di-n-butyl phthalate	ND		0.99		ug/L		08/26/22 09:00	08/29/22 12:13	1
Di-n-octyl phthalate	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Endosulfan I (Alpha)	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Endosulfan II (Beta)	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Endosulfan sulfate	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Endrin	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Endrin aldehyde	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1

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

Lab Sample ID: MB 380-15033/1-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 15033

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Fluoranthene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Fluorene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
gamma-Chlordane	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Heptachlor	ND		0.040		ug/L		08/26/22 09:00	08/29/22 12:13	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Hexachlorobenzene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Isophorone	ND		0.50		ug/L		08/26/22 09:00	08/29/22 12:13	1
Lindane	ND		0.040		ug/L		08/26/22 09:00	08/29/22 12:13	1
Malathion	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Methoxychlor	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Metolachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Metribuzin	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Molinate	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Naphthalene	ND		0.30		ug/L		08/26/22 09:00	08/29/22 12:13	1
Parathion	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		08/26/22 09:00	08/29/22 12:13	1
Phenanthrene	ND		0.040		ug/L		08/26/22 09:00	08/29/22 12:13	1
Propachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Pyrene	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Simazine	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Terbacil	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Terbuthylazine	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
Thiobencarb	ND		0.20		ug/L		08/26/22 09:00	08/29/22 12:13	1
trans-Nonachlor	ND		0.050		ug/L		08/26/22 09:00	08/29/22 12:13	1
Trifluralin	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
1-Methylnaphthalene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1
2-Methylnaphthalene	ND		0.099		ug/L		08/26/22 09:00	08/29/22 12:13	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*08/26/22 09:00*	*08/29/22 12:13*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*93*		*70 - 130*	*08/26/22 09:00*	*08/29/22 12:13*	*1*
Triphenylphosphate	*110*		*70 - 130*	*08/26/22 09:00*	*08/29/22 12:13*	*1*
Perylene-d12	*90*		*70 - 130*	*08/26/22 09:00*	*08/29/22 12:13*	*1*

Lab Sample ID: LCS 380-15033/3-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 15033

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD			1.99	2.23		ug/L		112	70 - 130		
2,4'-DDE			1.99	2.19		ug/L		110	70 - 130		
2,4'-DDT			1.99	2.53		ug/L		127	70 - 130		

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

Job ID: 380-17089-1

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

Lab Sample ID: LCS 380-15033/3-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dinitrotoluene	1.99	1.81		ug/L		91	70 - 130
2,6-Dinitrotoluene	1.99	1.75		ug/L		88	70 - 130
4,4'-DDD	1.99	2.29		ug/L		115	70 - 130
4,4'-DDE	1.99	2.18		ug/L		110	70 - 130
4,4'-DDT	1.99	2.28		ug/L		115	70 - 130
Acenaphthene	1.99	1.96		ug/L		99	70 - 130
Acenaphthylene	1.99	2.05		ug/L		103	70 - 130
Acetochlor	1.99	2.38		ug/L		120	70 - 130
Alachlor	1.99	2.28		ug/L		115	70 - 130
alpha-BHC	1.99	2.12		ug/L		106	70 - 130
alpha-Chlordane	1.99	2.21		ug/L		111	70 - 130
Anthracene	1.99	2.14		ug/L		108	70 - 130
Atrazine	1.99	2.27		ug/L		114	70 - 130
Benz(a)anthracene	1.99	2.25		ug/L		113	70 - 130
Benzo[a]pyrene	1.99	2.22		ug/L		112	70 - 130
Benzo[b]fluoranthene	1.99	2.29		ug/L		115	70 - 130
Benzo[g,h,i]perylene	1.99	2.21		ug/L		111	70 - 130
Benzo[k]fluoranthene	1.99	2.25		ug/L		113	70 - 130
beta-BHC	1.99	2.18		ug/L		110	70 - 130
Bromacil	1.99	1.49		ug/L		75	70 - 130
Butachlor	1.99	2.55		ug/L		128	70 - 130
Butylbenzylphthalate	1.99	2.46		ug/L		124	70 - 130
Caffeine	1.99	0.477	*-	ug/L		24	45 - 137
Chlorobenzilate	1.99	2.62	*+	ug/L		132	70 - 130
Chloroneb	1.99	2.09		ug/L		105	70 - 130
Chlorothalonil (Draconil, Bravo)	1.99	2.34		ug/L		118	70 - 130
Chlorpyrifos	1.99	2.36		ug/L		119	70 - 130
Chrysene	1.99	2.17		ug/L		109	70 - 130
delta-BHC	1.99	2.16		ug/L		109	70 - 130
Di(2-ethylhexyl)adipate	1.99	2.52		ug/L		127	70 - 130
Bis(2-ethylhexyl) phthalate	1.99	2.11		ug/L		106	70 - 130
Diazinon (Qualitative)	1.99	1.75		ug/L		88	15 - 132
Dibenz(a,h)anthracene	1.99	2.30		ug/L		116	70 - 130
Diclorvos (DDVP)	1.99	1.95		ug/L		98	70 - 130
Dieldrin	1.99	2.19		ug/L		110	70 - 130
Diethylphthalate	1.99	2.08		ug/L		104	70 - 130
Dimethoate	1.99	0.595	*-	ug/L		30	35 - 100
Dimethylphthalate	1.99	2.10		ug/L		105	70 - 130
Di-n-butyl phthalate	3.98	4.33		ug/L		109	70 - 130
Di-n-octyl phthalate	1.99	1.82		ug/L		91	70 - 130
Endosulfan I (Alpha)	1.99	2.21		ug/L		111	70 - 130
Endosulfan II (Beta)	1.99	2.22		ug/L		112	70 - 130
Endosulfan sulfate	1.99	2.38		ug/L		120	70 - 130
Endrin	1.99	2.40		ug/L		121	70 - 130
Endrin aldehyde	1.99	2.14		ug/L		107	70 - 130
EPTC	1.99	2.12		ug/L		107	70 - 130
Fluoranthene	1.99	2.27		ug/L		114	70 - 130
Fluorene	1.99	2.14		ug/L		107	70 - 130
gamma-Chlordane	1.99	2.20		ug/L		111	70 - 130

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

Lab Sample ID: LCS 380-15033/3-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Heptachlor	1.99	2.22		ug/L		112	70 - 130
Heptachlor epoxide (isomer B)	1.99	2.25		ug/L		113	70 - 130
Hexachlorobenzene	1.99	1.95		ug/L		98	70 - 130
Hexachlorocyclopentadiene	1.99	2.13		ug/L		107	70 - 130
Indeno[1,2,3-cd]pyrene	1.99	2.28		ug/L		115	70 - 130
Isophorone	1.99	1.82		ug/L		92	70 - 130
Lindane	1.99	2.15		ug/L		108	70 - 130
Malathion	1.99	2.53		ug/L		127	70 - 130
Methoxychlor	1.99	2.49		ug/L		125	70 - 130
Metolachlor	1.99	2.38		ug/L		120	70 - 130
Metribuzin	1.99	1.28	*-	ug/L		64	70 - 130
Molinate	1.99	2.11		ug/L		106	70 - 130
Naphthalene	1.99	1.77		ug/L		89	70 - 130
Parathion	1.99	2.34		ug/L		118	70 - 130
Pendimethalin (Penoxaline)	1.99	2.40		ug/L		121	70 - 130
Phenanthrene	1.99	2.09		ug/L		105	70 - 130
Propachlor	1.99	2.17		ug/L		109	70 - 130
Pyrene	1.99	2.28		ug/L		115	70 - 130
Simazine	1.99	1.85		ug/L		93	70 - 130
Terbacil	1.99	1.61		ug/L		81	70 - 130
Terbuthylazine	1.99	2.29		ug/L		115	70 - 130
Thiobencarb	1.99	2.06		ug/L		104	70 - 130
trans-Nonachlor	1.99	2.27		ug/L		114	70 - 130
Trifluralin	1.99	2.31		ug/L		116	70 - 130
1-Methylnaphthalene	1.99	1.91		ug/L		96	70 - 130
2-Methylnaphthalene	1.99	1.98		ug/L		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*93*		*70 - 130*
Triphenylphosphate	*114*		*70 - 130*
Perylene-d12	*96*		*70 - 130*

Lab Sample ID: LCSD 380-15033/4-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.98	2.25		ug/L		114	70 - 130	1	20
2,4'-DDE	1.98	2.19		ug/L		110	70 - 130	0	20
2,4'-DDT	1.98	2.56		ug/L		129	70 - 130	1	20
2,4-Dinitrotoluene	1.98	2.37	*1	ug/L		120	70 - 130	27	20
2,6-Dinitrotoluene	1.98	2.33	*1	ug/L		117	70 - 130	28	20
4,4'-DDD	1.98	2.31		ug/L		116	70 - 130	1	20
4,4'-DDE	1.98	2.21		ug/L		111	70 - 130	1	20
4,4'-DDT	1.98	2.31		ug/L		117	70 - 130	1	20
Acenaphthene	1.98	1.96		ug/L		99	70 - 130	0	20
Acenaphthylene	1.98	2.06		ug/L		104	70 - 130	1	20
Acetochlor	1.98	2.41		ug/L		121	70 - 130	1	20

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

Lab Sample ID: LCSD 380-15033/4-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alachlor	1.98	2.29		ug/L		115	70 - 130	0	20
alpha-BHC	1.98	2.11		ug/L		106	70 - 130	0	20
alpha-Chlordane	1.98	2.27		ug/L		114	70 - 130	3	20
Anthracene	1.98	2.17		ug/L		109	70 - 130	1	20
Atrazine	1.98	2.32		ug/L		117	70 - 130	2	20
Benz(a)anthracene	1.98	2.26		ug/L		114	70 - 130	0	20
Benzo[a]pyrene	1.98	2.25		ug/L		113	70 - 130	1	20
Benzo[b]fluoranthene	1.98	2.28		ug/L		115	70 - 130	0	20
Benzo[g,h,i]perylene	1.98	2.25		ug/L		114	70 - 130	2	20
Benzo[k]fluoranthene	1.98	2.26		ug/L		114	70 - 130	0	20
beta-BHC	1.98	2.14		ug/L		108	70 - 130	2	20
Bromacil	1.98	2.73	*+ *1	ug/L		138	70 - 130	59	20
Butachlor	1.98	2.55		ug/L		129	70 - 130	0	20
Butylbenzylphthalate	1.98	2.44		ug/L		123	70 - 130	1	20
Caffeine	1.98	1.33	*1	ug/L		67	45 - 137	95	20
Chlorobenzilate	1.98	2.61	*+	ug/L		132	70 - 130	0	20
Chloroneb	1.98	2.12		ug/L		107	70 - 130	1	20
Chlorothalonil (Draconil, Bravo)	1.98	2.34		ug/L		118	70 - 130	0	20
Chlorpyrifos	1.98	2.39		ug/L		120	70 - 130	1	20
Chrysene	1.98	2.16		ug/L		109	70 - 130	1	20
delta-BHC	1.98	2.15		ug/L		108	70 - 130	0	20
Di(2-ethylhexyl)adipate	1.98	2.56		ug/L		129	70 - 130	2	20
Bis(2-ethylhexyl) phthalate	1.98	2.09		ug/L		105	70 - 130	1	20
Diazinon (Qualitative)	1.98	1.79		ug/L		90	15 - 132	2	20
Dibenz(a,h)anthracene	1.98	2.30		ug/L		116	70 - 130	0	20
Diclorvos (DDVP)	1.98	2.13		ug/L		108	70 - 130	9	20
Dieldrin	1.98	2.19		ug/L		111	70 - 130	0	20
Diethylphthalate	1.98	2.09		ug/L		106	70 - 130	1	20
Dimethoate	1.98	1.41	*1	ug/L		71	35 - 100	81	20
Dimethylphthalate	1.98	2.18		ug/L		110	70 - 130	4	20
Di-n-butyl phthalate	3.97	4.30		ug/L		108	70 - 130	1	20
Di-n-octyl phthalate	1.98	1.76		ug/L		89	70 - 130	3	20
Endosulfan I (Alpha)	1.98	2.30		ug/L		116	70 - 130	4	20
Endosulfan II (Beta)	1.98	2.27		ug/L		115	70 - 130	3	20
Endosulfan sulfate	1.98	2.38		ug/L		120	70 - 130	0	20
Endrin	1.98	2.51		ug/L		127	70 - 130	4	20
Endrin aldehyde	1.98	2.20		ug/L		111	70 - 130	3	20
EPTC	1.98	2.10		ug/L		106	70 - 130	1	20
Fluoranthene	1.98	2.29		ug/L		115	70 - 130	1	20
Fluorene	1.98	2.15		ug/L		108	70 - 130	1	20
gamma-Chlordane	1.98	2.26		ug/L		114	70 - 130	3	20
Heptachlor	1.98	2.26		ug/L		114	70 - 130	2	20
Heptachlor epoxide (isomer B)	1.98	2.33		ug/L		117	70 - 130	3	20
Hexachlorobenzene	1.98	1.99		ug/L		101	70 - 130	2	20
Hexachlorocyclopentadiene	1.98	2.19		ug/L		110	70 - 130	3	20
Indeno[1,2,3-cd]pyrene	1.98	2.26		ug/L		114	70 - 130	1	20
Isophorone	1.98	1.88		ug/L		95	70 - 130	3	20
Lindane	1.98	2.18		ug/L		110	70 - 130	1	20
Malathion	1.98	2.61	*+	ug/L		131	70 - 130	3	20

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

Lab Sample ID: LCSD 380-15033/4-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methoxychlor	1.98	2.50		ug/L		126	70 - 130	1	20
Metolachlor	1.98	2.40		ug/L		121	70 - 130	1	20
Metribuzin	1.98	2.02	*1	ug/L		102	70 - 130	45	20
Molinate	1.98	2.09		ug/L		106	70 - 130	1	20
Naphthalene	1.98	1.77		ug/L		89	70 - 130	0	20
Parathion	1.98	2.33		ug/L		117	70 - 130	0	20
Pendimethalin (Penoxaline)	1.98	2.45		ug/L		123	70 - 130	2	20
Phenanthrene	1.98	2.10		ug/L		106	70 - 130	0	20
Propachlor	1.98	2.19		ug/L		111	70 - 130	1	20
Pyrene	1.98	2.31		ug/L		116	70 - 130	1	20
Simazine	1.98	2.32	*1	ug/L		117	70 - 130	22	20
Terbacil	1.98	2.44	*1	ug/L		123	70 - 130	41	20
Terbuthylazine	1.98	2.28		ug/L		115	70 - 130	1	20
Thiobencarb	1.98	2.07		ug/L		104	70 - 130	0	20
trans-Nonachlor	1.98	2.31		ug/L		116	70 - 130	2	20
Trifluralin	1.98	2.34		ug/L		118	70 - 130	1	20
1-Methylnaphthalene	1.98	1.92		ug/L		97	70 - 130	1	20
2-Methylnaphthalene	1.98	1.99		ug/L		101	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*91*		*70 - 130*
Triphenylphosphate	*112*		*70 - 130*
Perylene-d12	*96*		*70 - 130*

Lab Sample ID: MRL 380-15033/2-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	0.0991	0.139		ug/L		140	50 - 150
2,4'-DDE	0.0991	0.109		ug/L		110	50 - 150
2,4'-DDT	0.0991	0.118		ug/L		119	50 - 150
2,4-Dinitrotoluene	0.0991	0.130		ug/L		132	50 - 150
2,6-Dinitrotoluene	0.0991	0.104		ug/L		105	50 - 150
4,4'-DDD	0.0991	0.109		ug/L		110	50 - 150
4,4'-DDE	0.0991	0.109		ug/L		110	50 - 150
4,4'-DDT	0.0991	0.141		ug/L		142	50 - 150
Acenaphthene	0.0991	0.0977	J	ug/L		99	50 - 150
Acenaphthylene	0.0991	0.0918	J	ug/L		93	50 - 150
Acetochlor	0.0496	0.0534	J	ug/L		108	50 - 150
Alachlor	0.0496	0.0561		ug/L		113	50 - 150
alpha-BHC	0.0991	0.107		ug/L		108	50 - 150
alpha-Chlordane	0.0496	0.0573		ug/L		116	50 - 150
Anthracene	0.0198	0.0203		ug/L		102	50 - 150
Atrazine	0.0496	0.0563		ug/L		114	50 - 150
Benz(a)anthracene	0.0496	0.0651		ug/L		131	50 - 150
Benzo[a]pyrene	0.0198	0.0212		ug/L		107	50 - 150
Benzo[b]fluoranthene	0.0198	0.0243		ug/L		123	50 - 150

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

Job ID: 380-17089-1

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

Lab Sample ID: MRL 380-15033/2-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[g,h,i]perylene	0.0496	0.0529		ug/L		107	50 - 150
Benzo[k]fluoranthene	0.0198	0.0231		ug/L		116	50 - 150
beta-BHC	0.0991	0.109		ug/L		110	50 - 150
Bromacil	0.0991	0.116		ug/L		117	50 - 150
Butachlor	0.0496	0.0648		ug/L		131	50 - 150
Butylbenzylphthalate	0.149	0.190	J	ug/L		128	50 - 150
Caffeine	0.0496	0.0270	J	ug/L		55	50 - 150
Chlorobenzilate	0.0991	0.124		ug/L		125	50 - 150
Chloroneb	0.0991	0.106		ug/L		107	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0991	0.110		ug/L		110	50 - 150
Chlorpyrifos	0.0496	0.0532		ug/L		107	50 - 150
Chrysene	0.0198	0.0220		ug/L		111	50 - 150
delta-BHC	0.0991	0.128		ug/L		129	50 - 150
Di(2-ethylhexyl)adipate	0.297	0.383	J	ug/L		129	50 - 150
Bis(2-ethylhexyl) phthalate	0.595	0.702		ug/L		118	50 - 150
Diazinon (Qualitative)	0.0991	0.0910	J	ug/L		92	15 - 132
Dibenz(a,h)anthracene	0.0496	0.0573		ug/L		116	50 - 150
Diclorvos (DDVP)	0.0496	0.0490	J	ug/L		99	50 - 150
Dieldrin	0.0991	0.120	J	ug/L		121	50 - 150
Diethylphthalate	0.149	0.174	J	ug/L		117	50 - 150
Dimethoate	0.0991	0.0703	J	ug/L		71	35 - 100
Dimethylphthalate	0.297	0.314	J	ug/L		105	50 - 150
Di-n-butyl phthalate	0.297	0.350	J	ug/L		118	49 - 243
Di-n-octyl phthalate	0.0991	0.124		ug/L		125	50 - 150
Endosulfan I (Alpha)	0.0991	0.123		ug/L		124	50 - 150
Endosulfan II (Beta)	0.0991	0.119		ug/L		121	50 - 150
Endosulfan sulfate	0.0991	0.112		ug/L		113	50 - 150
Endrin	0.0991	0.144		ug/L		146	50 - 150
Endrin aldehyde	0.0991	0.0985	J	ug/L		99	50 - 150
EPTC	0.0991	0.0991		ug/L		100	50 - 150
Fluoranthene	0.0496	0.0536	J	ug/L		108	50 - 150
Fluorene	0.0496	0.0528		ug/L		107	50 - 150
gamma-Chlordane	0.0496	0.0530		ug/L		107	50 - 150
Heptachlor	0.0396	0.0602	^3+	ug/L		152	50 - 150
Heptachlor epoxide (isomer B)	0.0496	0.0537		ug/L		108	50 - 150
Hexachlorobenzene	0.0496	0.0612		ug/L		124	50 - 150
Hexachlorocyclopentadiene	0.0496	0.0505		ug/L		102	50 - 150
Indeno[1,2,3-cd]pyrene	0.0496	0.0512		ug/L		103	50 - 150
Isophorone	0.0991	0.0774	J	ug/L		78	50 - 150
Lindane	0.0496	0.0432		ug/L		87	50 - 150
Malathion	0.0991	0.111		ug/L		112	50 - 150
Methoxychlor	0.0991	0.150	^3+	ug/L		152	50 - 150
Metolachlor	0.0496	0.0616		ug/L		124	50 - 150
Metribuzin	0.0496	0.0429	J	ug/L		87	50 - 150
Molinate	0.0991	0.112		ug/L		113	50 - 150
Naphthalene	0.0991	0.0938	J	ug/L		95	50 - 150
Parathion	0.0991	0.155	^3+	ug/L		156	50 - 150
Pendimethalin (Penoxaline)	0.0991	0.132		ug/L		133	50 - 150
Phenanthrene	0.0198	0.0233	J	ug/L		118	50 - 150

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

Lab Sample ID: MRL 380-15033/2-A
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Propachlor	0.0496	0.0526		ug/L		106	50 - 150
Pyrene	0.0496	0.0549		ug/L		111	50 - 150
Simazine	0.0496	0.0533		ug/L		108	50 - 150
Terbacil	0.0991	0.126		ug/L		128	50 - 150
Terbuthylazine	0.0991	0.106		ug/L		107	50 - 150
Thiobencarb	0.0991	0.110	J	ug/L		111	50 - 150
trans-Nonachlor	0.0496	0.0490	J	ug/L		99	50 - 150
Trifluralin	0.0991	0.0987	J	ug/L		100	50 - 150
1-Methylnaphthalene	0.0991	0.0999		ug/L		101	50 - 150
2-Methylnaphthalene	0.0991	0.103		ug/L		104	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*91*		*70 - 130*
Triphenylphosphate	*111*		*70 - 130*
Perylene-d12	*95*		*70 - 130*

Lab Sample ID: 380-16699-B-1-A MS
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		1.96	2.31		ug/L		118	70 - 130
2,4'-DDE	ND		1.96	2.25		ug/L		115	70 - 130
2,4'-DDT	ND	F1	1.96	2.68	F1	ug/L		137	70 - 130
2,4-Dinitrotoluene	ND	*1	1.96	2.48		ug/L		127	70 - 130
2,6-Dinitrotoluene	ND	*1	1.96	2.38		ug/L		121	70 - 130
4,4'-DDD	ND		1.96	2.42		ug/L		123	70 - 130
4,4'-DDE	ND		1.96	2.31		ug/L		118	70 - 130
4,4'-DDT	ND		1.96	2.46		ug/L		126	70 - 130
Acenaphthene	ND		1.96	1.98		ug/L		101	70 - 130
Acenaphthylene	ND		1.96	2.09		ug/L		107	70 - 130
Acetochlor	ND		1.96	2.44		ug/L		124	70 - 130
Alachlor	ND		1.96	2.29		ug/L		117	70 - 130
alpha-BHC	ND		1.96	2.18		ug/L		111	70 - 130
alpha-Chlordane	ND		1.96	2.31		ug/L		118	70 - 130
Anthracene	ND		1.96	2.19		ug/L		111	70 - 130
Atrazine	ND		1.96	2.41		ug/L		123	70 - 130
Benz(a)anthracene	ND		1.96	2.39		ug/L		122	70 - 130
Benzo[a]pyrene	ND		1.96	2.26		ug/L		115	70 - 130
Benzo[b]fluoranthene	ND		1.96	2.29		ug/L		116	70 - 130
Benzo[g,h,i]perylene	ND		1.96	2.31		ug/L		118	70 - 130
Benzo[k]fluoranthene	ND		1.96	2.26		ug/L		115	70 - 130
beta-BHC	ND		1.96	2.25		ug/L		115	70 - 130
Bromacil	ND	*+ *1 F1	1.96	2.87	F1	ug/L		146	70 - 130
Butachlor	ND	F1	1.96	2.61	F1	ug/L		133	70 - 130
Butylbenzylphthalate	ND	F1	1.96	2.56	F1	ug/L		131	70 - 130
Caffeine	ND	*- *1	1.96	1.62		ug/L		83	46 - 144
Chlorobenzilate	ND	*+ F1	1.96	2.76	F1	ug/L		141	70 - 130

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

Lab Sample ID: 380-16699-B-1-A MS
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroneb	ND		1.96	2.15		ug/L		109	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		1.96	2.42		ug/L		124	70 - 130
Chlorpyrifos	ND		1.96	2.42		ug/L		123	70 - 130
Chrysene	ND		1.96	2.15		ug/L		110	70 - 130
delta-BHC	ND		1.96	2.27		ug/L		116	70 - 130
Di(2-ethylhexyl)adipate	ND	F1	1.96	2.76	F1	ug/L		141	70 - 130
Bis(2-ethylhexyl) phthalate	ND		1.96	2.32		ug/L		118	70 - 130
Diazinon (Qualitative)	ND		1.96	2.03		ug/L		103	15 - 132
Dibenz(a,h)anthracene	ND		1.96	2.39		ug/L		122	70 - 130
Diclorvos (DDVP)	ND		1.96	2.13		ug/L		108	70 - 130
Dieldrin	ND		1.96	2.32		ug/L		118	70 - 130
Diethylphthalate	ND		1.96	2.15		ug/L		109	70 - 130
Dimethoate	ND	*- *1	1.96	1.69		ug/L		86	34 - 111
Dimethylphthalate	ND		1.96	2.22		ug/L		113	70 - 130
Di-n-butyl phthalate	ND		3.92	4.37		ug/L		111	70 - 130
Di-n-octyl phthalate	ND		1.96	1.92		ug/L		98	70 - 130
Endosulfan I (Alpha)	ND		1.96	2.27		ug/L		116	70 - 130
Endosulfan II (Beta)	ND		1.96	2.34		ug/L		119	70 - 130
Endosulfan sulfate	ND		1.96	2.52		ug/L		128	70 - 130
Endrin	ND		1.96	2.54		ug/L		130	70 - 130
Endrin aldehyde	ND		1.96	2.19		ug/L		112	70 - 130
EPTC	ND		1.96	2.14		ug/L		109	70 - 130
Fluoranthene	ND		1.96	2.32		ug/L		118	70 - 130
Fluorene	ND		1.96	2.18		ug/L		111	70 - 130
gamma-Chlordane	ND		1.96	2.32		ug/L		118	70 - 130
Heptachlor	ND	^3+	1.96	2.25		ug/L		115	70 - 130
Heptachlor epoxide (isomer B)	ND		1.96	2.37		ug/L		121	70 - 130
Hexachlorobenzene	ND		1.96	2.05		ug/L		104	70 - 130
Hexachlorocyclopentadiene	ND		1.96	2.18		ug/L		111	70 - 130
Indeno[1,2,3-cd]pyrene	ND		1.96	2.36		ug/L		120	70 - 130
Isophorone	ND		1.96	1.86		ug/L		95	70 - 130
Lindane	ND		1.96	2.19		ug/L		111	70 - 130
Malathion	ND	*+ F1	1.96	2.67	F1	ug/L		136	70 - 130
Methoxychlor	ND	^3+ F1	1.96	2.63	F1	ug/L		134	70 - 130
Metolachlor	ND		1.96	2.43		ug/L		124	70 - 130
Metribuzin	ND	*- *1	1.96	2.06		ug/L		105	70 - 130
Molinate	ND		1.96	2.13		ug/L		109	70 - 130
Naphthalene	ND		1.96	1.79		ug/L		91	70 - 130
Parathion	ND	^3+	1.96	2.44		ug/L		124	70 - 130
Pendimethalin (Penoxaline)	ND		1.96	2.51		ug/L		128	70 - 130
Phenanthrene	ND		1.96	2.10		ug/L		107	70 - 130
Propachlor	ND		1.96	2.25		ug/L		115	70 - 130
Pyrene	ND		1.96	2.36		ug/L		120	70 - 130
Simazine	ND	*1	1.96	2.38		ug/L		121	70 - 130
Terbacil	ND	*1	1.96	2.47		ug/L		126	70 - 130
Terbuthylazine	ND		1.96	2.38		ug/L		121	70 - 130
Thiobencarb	ND		1.96	2.09		ug/L		107	70 - 130
trans-Nonachlor	ND		1.96	2.36		ug/L		120	70 - 130
Trifluralin	ND		1.96	2.42		ug/L		123	70 - 130

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

Lab Sample ID: 380-16699-B-1-A MS
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 15033

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	2.01		ug/L		103	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*92*		*70 - 130*
Triphenylphosphate	*118*		*70 - 130*
Perylene-d12	*98*		*70 - 130*

Lab Sample ID: 380-16699-B-2-A DU
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 15033

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	*1	ND	*1	ug/L		NC	20
2,6-Dinitrotoluene	ND	*1	ND	*1	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	*+ *1	ND	*+ *1	ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Caffeine	ND	*- *1	ND	*- *1	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: 380-16699-B-2-A DU
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 15033

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Dibenz(a,h)anthracene	ND			ND		ug/L				NC	20
Diclorvos (DDVP)	ND			ND		ug/L				NC	20
Dieldrin	ND			ND		ug/L				NC	20
Diethylphthalate	ND			ND		ug/L				NC	20
Dimethoate	ND	*- *1		ND	*- *1	ug/L				NC	20
Dimethylphthalate	ND			ND		ug/L				NC	20
Di-n-butyl phthalate	ND			ND		ug/L				NC	20
Di-n-octyl phthalate	ND			ND		ug/L				NC	20
Endosulfan I (Alpha)	ND			ND		ug/L				NC	20
Endosulfan II (Beta)	ND			ND		ug/L				NC	20
Endosulfan sulfate	ND			ND		ug/L				NC	20
Endrin	ND			ND		ug/L				NC	20
Endrin aldehyde	ND			ND		ug/L				NC	20
EPTC	ND			ND		ug/L				NC	20
Fluoranthene	ND			ND		ug/L				NC	20
Fluorene	ND			ND		ug/L				NC	20
gamma-Chlordane	ND			ND		ug/L				NC	20
Heptachlor	ND	^3+		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	^3+		ND		ug/L				NC	20
Metolachlor	ND			ND		ug/L				NC	20
Metribuzin	ND	*- *1		ND	*- *1	ug/L				NC	20
Molinate	ND			ND		ug/L				NC	20
Naphthalene	ND			ND		ug/L				NC	20
Parathion	ND	^3+		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	*1		ND	*1	ug/L				NC	20
Terbacil	ND	*1		ND	*1	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	*95*		*70 - 130*
Triphenylphosphate	*110*		*70 - 130*

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

Lab Sample ID: 380-16699-B-2-A DU
Matrix: Water
Analysis Batch: 15268

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 15033

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Perylene-d12	*90*		*70 - 130*

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

Lab Sample ID: 99461-B1
Matrix: water
Analysis Batch: O-38098

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-38098_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Acenaphthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Acenaphthylene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Anthracene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Biphenyl	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Chrysene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Dibenzothiophene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		08/22/22 00:00	08/30/22 14:40	1
Fluoranthene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Fluorene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Naphthalene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Perylene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Phenanthrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1
Pyrene	ND		0.005	0.001	µg/L		08/22/22 00:00	08/30/22 14:40	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*94*		*65 - 113*	*08/22/22 00:00*	*08/30/22 14:40*	*1*
(d10-Phenanthrene)	*93*		*80 - 111*	*08/22/22 00:00*	*08/30/22 14:40*	*1*
(d12-Chrysene)	*99*		*60 - 139*	*08/22/22 00:00*	*08/30/22 14:40*	*1*
(d12-Perylene)	*91*		*36 - 161*	*08/22/22 00:00*	*08/30/22 14:40*	*1*
(d8-Naphthalene)	*87*		*44 - 119*	*08/22/22 00:00*	*08/30/22 14:40*	*1*

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

Lab Sample ID: 99461-BS1
Matrix: water
Analysis Batch: O-38098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-38098_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			0.5	0.569		µg/L		114	49 - 117		
1-Methylphenanthrene			0.5	0.488		µg/L		98	66 - 127		
2,3,5-Trimethylnaphthalene			0.5	0.502		µg/L		100	57 - 120		
2,6-Dimethylnaphthalene			0.5	0.584		µg/L		117	54 - 117		
2-Methylnaphthalene			0.5	0.545		µg/L		109	47 - 130		
Acenaphthene			0.5	0.597		µg/L		119	53 - 131		
Acenaphthylene			0.5	0.561		µg/L		112	43 - 140		
Anthracene			0.5	0.425		µg/L		85	58 - 135		
Benz[a]anthracene			0.5	0.428		µg/L		86	55 - 145		
Benzo[a]pyrene			0.5	0.468		µg/L		94	51 - 143		
Benzo[b]fluoranthene			0.5	0.517		µg/L		103	46 - 165		
Benzo[e]pyrene			0.5	0.492		µg/L		98	42 - 152		
Benzo[g,h,i]perylene			0.5	0.429		µg/L		86	63 - 133		
Benzo[k]fluoranthene			0.5	0.495		µg/L		99	56 - 145		
Biphenyl			0.5	0.597		µg/L		119	56 - 119		
Chrysene			0.5	0.426		µg/L		85	56 - 141		
Dibenz[a,h]anthracene			0.5	0.526		µg/L		105	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.503		µg/L		101	50 - 150		
Dibenzothiophene			0.5	0.409		µg/L		82	75 - 113		
Disalicylidenepropanediamine			50	39.6		µg/L		79	50 - 150		
Fluoranthene			0.5	0.468		µg/L		94	60 - 146		
Fluorene			0.5	0.517		µg/L		103	58 - 131		
Indeno[1,2,3-cd]pyrene			0.5	0.519		µg/L		104	50 - 151		
Naphthalene			0.5	0.476		µg/L		95	41 - 126		
Perylene			0.5	0.486		µg/L		97	48 - 141		
Phenanthrene			0.5	0.417		µg/L		83	67 - 127		
Pyrene			0.5	0.466		µg/L		93	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*107*		*65 - 113*
(d10-Phenanthrene)	*94*		*80 - 111*
(d12-Chrysene)	*90*		*60 - 139*
(d12-Perylene)	*101*		*36 - 161*
(d8-Naphthalene)	*108*		*44 - 119*

Lab Sample ID: 99461-BS2
Matrix: water
Analysis Batch: O-38098

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38098_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.461		µg/L		92	49 - 117	21	30
1-Methylphenanthrene			0.5	0.511		µg/L		102	66 - 127	4	30
2,3,5-Trimethylnaphthalene			0.5	0.492		µg/L		98	57 - 120	2	30
2,6-Dimethylnaphthalene			0.5	0.494		µg/L		99	54 - 117	17	30
2-Methylnaphthalene			0.5	0.432		µg/L		86	47 - 130	24	30
Acenaphthene			0.5	0.494		µg/L		99	53 - 131	18	30
Acenaphthylene			0.5	0.479		µg/L		96	43 - 140	15	30
Anthracene			0.5	0.44		µg/L		88	58 - 135	3	30

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

Lab Sample ID: 99461-BS2
Matrix: water
Analysis Batch: O-38098

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38098_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benz[a]anthracene			0.5	0.447		µg/L		89	55 - 145	3	30
Benzo[a]pyrene			0.5	0.448		µg/L		90	51 - 143	4	30
Benzo[b]fluoranthene			0.5	0.493		µg/L		99	46 - 165	4	30
Benzo[e]pyrene			0.5	0.488		µg/L		98	42 - 152	0	30
Benzo[g,h,i]perylene			0.5	0.431		µg/L		86	63 - 133	0	30
Benzo[k]fluoranthene			0.5	0.479		µg/L		96	56 - 145	3	30
Biphenyl			0.5	0.443		µg/L		89	56 - 119	29	30
Chrysene			0.5	0.437		µg/L		87	56 - 141	2	30
Dibenz[a,h]anthracene			0.5	0.516		µg/L		103	55 - 150	2	30
Dibenzo[a,l]pyrene			0.5	0.451		µg/L		90	50 - 150	12	30
Dibenzothiophene			0.5	0.446		µg/L		89	75 - 113	8	30
Disalicylidenepropanediamine			50	43.5		µg/L		87	50 - 150	10	30
Fluoranthene			0.5	0.503		µg/L		101	60 - 146	7	30
Fluorene			0.5	0.485		µg/L		97	58 - 131	6	30
Indeno[1,2,3-cd]pyrene			0.5	0.497		µg/L		99	50 - 151	5	30
Naphthalene			0.5	0.384		µg/L		77	41 - 126	21	30
Perylene			0.5	0.451		µg/L		90	48 - 141	7	30
Phenanthrene			0.5	0.451		µg/L		90	67 - 127	8	30
Pyrene			0.5	0.504		µg/L		101	54 - 156	8	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*104*		*65 - 113*
(d10-Phenanthrene)	*100*		*80 - 111*
(d12-Chrysene)	*93*		*60 - 139*
(d12-Perylene)	*96*		*36 - 161*
(d8-Naphthalene)	*84*		*44 - 119*

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Lab Sample ID: 22VGH7H09B
Matrix: WATER
Analysis Batch: 22VGH7H09

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			08/23/22 13:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*08/23/22 13:39*	*1*

Lab Sample ID: 22VGH7H09L
Matrix: WATER
Analysis Batch: 22VGH7H09

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
GASOLINE			0.5	0.464		mg/L		93	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*118*		*70 - 130*

Method: 8015 Diesel LL (EAL) and Motor Oil - 8015 - TPH DRO/ORO

Lab Sample ID: 22H242-01M
Matrix: WATER
Analysis Batch: 22VGH7H09

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
GASOLINE	ND		0.5	0.432		mg/L		86	50 - 130		

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

Lab Sample ID: 22H242-01S
Matrix: WATER
Analysis Batch: 22VGH7H09

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
GASOLINE	ND		0.5	0.464		mg/L		93	50 - 130	7	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
BROMOFLUOROBENZENE	*116*		*60 - 140*

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

Lab Sample ID: 22DSH034WB
Matrix: WATER
Analysis Batch: 22DSH034W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			08/22/22 17:35	1
MOTOR OIL	ND	U	0.05		mg/L			08/22/22 17:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE					*08/22/22 17:35*	*1*
HEXACOSANE					*08/22/22 17:35*	*1*

Lab Sample ID: 22DSH034WL
Matrix: WATER
Analysis Batch: 22DSH034W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.5	2.11		mg/L		84	50 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOBENZENE	*75*		*60 - 130*
HEXACOSANE	*93*		*60 - 130*

GC/MS Semi VOA

Prep Batch: 15033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-17089-1	Halawa Shaft Static (Viewing Pool)	Total/NA	Water	525.2	
MB 380-15033/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-15033/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-15033/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-15033/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-16699-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-16699-B-2-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 15268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-17089-1	Halawa Shaft Static (Viewing Pool)	Total/NA	Water	525.2	15033
MB 380-15033/1-A	Method Blank	Total/NA	Water	525.2	15033
LCS 380-15033/3-A	Lab Control Sample	Total/NA	Water	525.2	15033
LCSD 380-15033/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	15033
MRL 380-15033/2-A	Lab Control Sample	Total/NA	Water	525.2	15033
380-16699-B-1-A MS	Matrix Spike	Total/NA	Water	525.2	15033
380-16699-B-2-A DU	Duplicate	Total/NA	Water	525.2	15033

Subcontract

Analysis Batch: O-38098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-17089-1	Halawa Shaft Static (Viewing Pool)	Total/NA	Water	625 PAH Physis LL (EAL) + TICs	O-38098_P
99461-B1	Method Blank	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38098_P
99461-BS1	Lab Control Sample	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38098_P
99461-BS2	Lab Control Sample Dup	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38098_P

Analysis Batch: 22DSH034W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-17089-1	Halawa Shaft Static (Viewing Pool)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22DSH034WB	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22DSH034WL	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Analysis Batch: 22VGH7H09

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-17089-1	Halawa Shaft Static (Viewing Pool)	Total/NA	Water	8015 Diesel LL (EAL) and Motor Oil	
380-17089-2	TB Halawa Shaft Static (Viewing Pool)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VGH7H09B	Method Blank	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

Subcontract (Continued)

Analysis Batch: 22VGH7H09 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
22VGH7H09L	Lab Control Sample	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22H242-01M	Matrix Spike	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22H242-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

Prep Batch: O-38098_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-17089-1	Halawa Shaft Static (Viewing Pool)	Total/NA	Water	EPA_625	
99461-B1	Method Blank	Total/NA	water	EPA_625	
99461-BS1	Lab Control Sample	Total/NA	water	EPA_625	
99461-BS2	Lab Control Sample Dup	Total/NA	water	EPA_625	

Lab Chronicle

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

Job ID: 380-17089-1

Client Sample ID: Halawa Shaft Static (Viewing Pool)

Lab Sample ID: 380-17089-1

Date Collected: 08/15/22 09:30

Matrix: Water

Date Received: 08/17/22 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			15033	OTM3	EA MON	08/26/22 09:00
Total/NA	Analysis	525.2		1	15268	UJC9	EA MON	08/29/22 17:43
Total/NA	Prep	EPA_625		1	O-38098_P			08/22/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-38098	YC		08/30/22 21:35
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22VGH7H09	SCerva		08/23/22 16:36
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22DSH034W	SDees		08/23/22 00:04

Client Sample ID: TB Halawa Shaft Static (Viewing Pool)

Lab Sample ID: 380-17089-2

Date Collected: 08/15/22 09:30

Matrix: Water

Date Received: 08/17/22 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VGH7H09	SCerva		08/23/22 18:22

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: 380-17089-1

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	Water	1-Methylnaphthalene
525.2	525.2	Water	2,4'-DDD
525.2	525.2	Water	2,4'-DDE
525.2	525.2	Water	2,4'-DDT
525.2	525.2	Water	2,4-Dinitrotoluene
525.2	525.2	Water	2,6-Dinitrotoluene
525.2	525.2	Water	2-Methylnaphthalene
525.2	525.2	Water	4,4'-DDD
525.2	525.2	Water	4,4'-DDE
525.2	525.2	Water	4,4'-DDT
525.2	525.2	Water	Acenaphthene
525.2	525.2	Water	Acenaphthylene
525.2	525.2	Water	Acetochlor
525.2	525.2	Water	alpha-BHC
525.2	525.2	Water	alpha-Chlordane
525.2	525.2	Water	Anthracene
525.2	525.2	Water	Benz(a)anthracene
525.2	525.2	Water	Benzo[b]fluoranthene
525.2	525.2	Water	Benzo[g,h,i]perylene
525.2	525.2	Water	Benzo[k]fluoranthene
525.2	525.2	Water	beta-BHC
525.2	525.2	Water	Bromacil
525.2	525.2	Water	Butylbenzylphthalate
525.2	525.2	Water	Caffeine
525.2	525.2	Water	Chlorobenzilate
525.2	525.2	Water	Chloroneb
525.2	525.2	Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Water	Chlorpyrifos
525.2	525.2	Water	Chrysene
525.2	525.2	Water	delta-BHC
525.2	525.2	Water	Diazinon (Qualitative)
525.2	525.2	Water	Dibenz(a,h)anthracene
525.2	525.2	Water	Diclorvos (DDVP)
525.2	525.2	Water	Diethylphthalate
525.2	525.2	Water	Dimethoate
525.2	525.2	Water	Dimethylphthalate
525.2	525.2	Water	Di-n-butyl phthalate
525.2	525.2	Water	Di-n-octyl phthalate
525.2	525.2	Water	Endosulfan I (Alpha)
525.2	525.2	Water	Endosulfan II (Beta)
525.2	525.2	Water	Endosulfan sulfate
525.2	525.2	Water	Endrin aldehyde
525.2	525.2	Water	EPTC
525.2	525.2	Water	Fluoranthene
525.2	525.2	Water	Fluorene

Laboratory: Eurofins Eaton Monrovia (Continued)

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

Authority	Program	Identification Number	Expiration Date

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Water	gamma-Chlordane
525.2	525.2	Water	Indeno[1,2,3-cd]pyrene
525.2	525.2	Water	Isophorone
525.2	525.2	Water	Malathion
525.2	525.2	Water	Molinate
525.2	525.2	Water	Naphthalene
525.2	525.2	Water	Parathion
525.2	525.2	Water	Pendimethalin (Penoxaline)
525.2	525.2	Water	Phenanthrene
525.2	525.2	Water	Pyrene
525.2	525.2	Water	Terbacil
525.2	525.2	Water	Terbuthylazine
525.2	525.2	Water	Thiobencarb
525.2	525.2	Water	Total Permethrin (mixed isomers)
525.2	525.2	Water	trans-Nonachlor
525.2	525.2	Water	Trifluralin

Method Summary

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

Job ID: 380-17089-1

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: 380-17089-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-17089-1	Halawa Shaft Static (Viewing Pool)	Water	08/15/22 09:30	08/17/22 11:00
380-17089-2	TB Halawa Shaft Static (Viewing Pool)	Water	08/15/22 09:30	08/17/22 11:00

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

Date: 09-06-2022
EMAX Batch No.: 22H242

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-17089

Enclosed is the Laboratory report for samples received on 08/18/22.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-17089-1	H242-01	08/15/22	WATER	TPH GASOLINE
				TPH DIESEL & MOTOR OIL
380-17089-2	H242-02	08/15/22	WATER	TPH GASOLINE
380-17089-1MS	H242-01M	08/15/22	WATER	TPH GASOLINE
380-17089-1MSD	H242-01S	08/15/22	WATER	TPH GASOLINE

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912022-22
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

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

Chain of Custody Record

eurofins | Environment Testing America

3.0°

22H242

10/25/2022

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Frank, Debbie L	Carrier Tracking No(s):	COC No: 380-18376.1
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 #: 380-17089-1
Address: 3051 Fujita Street, ,	Due Date Requested: 8/31/2022			
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 Shaft Static (Viewing Pool) (380-17089-1)	8/15/22	09:30 Hawaiian		Water			X	X	6	See Attached Instructions
2	TB Halawa Shaft (380-17089-2)	8/15/22	Hawaiian		Water			X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon 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	Heidi Castro	8/18/22	EEA			
2	[signature]	8-18-22 1713		[signature]	08/19/22 17:30	EMAX
3						

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		Temp: 3.0

EMAX LABORATORIES, INC.

REFERENCE: EMAX-SM02 Rev. 12

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 22H242
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Jocelyne Solis-Ramos
☐ EMAX Courier ☑ Client Delivery		Date 08/10/22 Time 17:30

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.0 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* _____	*B - S/N* 210760237	*C - S/N* _____	(D) *S/N* 210760272	

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2	7,8	D6	label reads 00:00	R1
2	7,8	D7	TWO dates on label - 7/29/22 and 8/15/22	↓

08/18/22

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

NB 8/23/22

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

LEGEND:

☐ Continue to next page.

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

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

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

REVIEWS:

Sample Labeling Jocelyne Solis-Ramos Date 08/19/22 — 8/19/22

SRF _____ Date 8/19/22

PM NB Date 8/23/22

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

380-17089

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

SDG#: 22H242

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-17089

SDG : 22H242

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

A total of two(2) water samples were received on 08/18/22 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. VGH7H09B - 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. VGH7H09L/VGH7H09C 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 H242-01M/H242-01S. 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 : 380-17089
SDG NO. : 22H242
Instrument ID : H7

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VGH7H09B	1	NA	08/23/2213:39	08/23/2213:39	AH23005A	AH23004A	22VGH7H09	Method Blank
LCS1W	VGH7H09L	1	NA	08/23/2214:14	08/23/2214:14	AH23006A	AH23004A	22VGH7H09	Lab Control Sample (LCS)
LCD1W	VGH7H09C	1	NA	08/23/2214:50	08/23/2214:50	AH23007A	AH23004A	22VGH7H09	LCS Duplicate
380-17089-1	H242-01	1	NA	08/23/2216:36	08/23/2216:36	AH23010A	AH23004A	22VGH7H09	Field Sample
380-17089-1MS	H242-01M	1	NA	08/23/2217:11	08/23/2217:11	AH23011A	AH23004A	22VGH7H09	Matrix Spike Sample (MS)
380-17089-1MSD	H242-01S	1	NA	08/23/2217:47	08/23/2217:47	AH23012A	AH23004A	22VGH7H09	MS Duplicate (MSD)
380-17089-2	H242-02	1	NA	08/23/2218:22	08/23/2218:22	AH23013A	AH23004A	22VGH7H09	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:	08/15/22 09:30
Project	: 380-17089	Date Received:	08/18/22
Batch No.	: 22H242	Date Extracted:	08/23/22 16:36
Sample ID	: 380-17089-1	Date Analyzed:	08/23/22 16:36
Lab Samp ID:	H242-01	Dilution Factor:	1
Lab File ID:	AH23010A	Matrix:	WATER
Ext Btch ID:	22VGH7H09	% Moisture:	NA
Calib. Ref.:	AH23004A	Instrument ID:	H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0354	0.0400	89	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:	08/15/22 00:00
Project	: 380-17089	Date Received:	08/18/22
Batch No.	: 22H242	Date Extracted:	08/23/22 18:22
Sample ID	: 380-17089-2	Date Analyzed:	08/23/22 18:22
Lab Samp ID:	H242-02	Dilution Factor:	1
Lab File ID:	AH23013A	Matrix:	WATER
Ext Btch ID:	22VGH7H09	% Moisture:	NA
Calib. Ref.:	AH23004A	Instrument ID:	H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0374	0.0400	94	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:	08/23/22 13:39
Project	: 380-17089	Date Received:	08/23/22
Batch No.	: 22H242	Date Extracted:	08/23/22 13:39
Sample ID	: MBLK1W	Date Analyzed:	08/23/22 13:39
Lab Samp ID:	VGH7H09B	Dilution Factor:	1
Lab File ID:	AH23005A	Matrix:	WATER
Ext Btch ID:	22VGH7H09	% Moisture:	NA
Calib. Ref.:	AH23004A	Instrument ID:	H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0375	0.0400	94	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 : 380-17089
BATCH NO. : 22H242
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7H09B	VGH7H09L	VGH7H09C
LAB FILE ID	: AH23005A	AH23006A	AH23007A
DATE PREPARED	: 08/23/22 13:39	08/23/22 14:14	08/23/22 14:50
DATE ANALYZED	: 08/23/22 13:39	08/23/22 14:14	08/23/22 14:50
PREP BATCH	: 22VGH7H09	22VGH7H09	22VGH7H09
CALIBRATION REF	: AH23004A	AH23004A	AH23004A

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	0.464	93	0.500	0.503	101	8	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0473	118	0.0400	0.0471	118	70-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-17089
BATCH NO. : 22H242
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-17089-1	380-17089-1MS	380-17089-1MSD
LAB SAMPLE ID	: H242-01	H242-01M	H242-01S
LAB FILE ID	: AH23010A	AH23011A	AH23012A
DATE PREPARED	: 08/23/22 16:36	08/23/22 17:11	08/23/22 17:47
DATE ANALYZED	: 08/23/22 16:36	08/23/22 17:11	08/23/22 17:47
PREP BATCH	: 22VGH7H09	22VGH7H09	22VGH7H09
CALIBRATION REF:	AH23004A	AH23004A	AH23004A

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	0.432	86	0.500	0.464	93	7	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0434	109	0.0400	0.0465	116	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-17089

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22H242

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-17089

SDG : 22H242

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 08/18/22 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. DSH034WB - 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 DSH034WL. 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 22H180-01M/22H180-01S. 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 : 380-17089

SDG NO. : 22H242
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
LCS1W	DSH034WL	1	NA	08/22/2217:16	08/20/2215:00	LH22010A	LH22004A	22DSH034W	Lab Control Sample (LCS)
MBLK1W	DSH034WB	1	NA	08/22/2217:35	08/20/2215:00	LH22011A	LH22004A	22DSH034W	Method Blank
380-17089-1	H242-01	1	NA	08/23/2200:04	08/20/2215:00	LH22032A	LH22024A	22DSH034W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	08/15/22 09:30
Project	: 380-17089	Date Received:	08/18/22
Batch No.	: 22H242	Date Extracted:	08/20/22 15:00
Sample ID	: 380-17089-1	Date Analyzed:	08/23/22 00:04
Lab Samp ID:	22H242-01	Dilution Factor:	1
Lab File ID:	LH22032A	Matrix:	WATER
Ext Btch ID:	22DSH034W	% Moisture:	NA
Calib. Ref.:	LH22024A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.025	0.013
Motor Oil	ND	0.051	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.341	0.505	68	60-130
Hexacosane	0.115	0.126	91	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	: 990ml	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:	08/20/22 15:00
Project	: 380-17089	Date Received:	08/20/22
Batch No.	: 22H242	Date Extracted:	08/20/22 15:00
Sample ID	: MBLK1W	Date Analyzed:	08/22/22 17:35
Lab Samp ID:	DSH034WB	Dilution Factor:	1
Lab File ID:	LH22011A	Matrix:	WATER
Ext Btch ID:	22DSH034W	% Moisture:	NA
Calib. Ref.:	LH22004A	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	0.380	0.500	76	60-130
Hexacosane	0.113	0.125	90	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 : 380-17089
BATCH NO. : 22H242
METHOD : 3520C/8015B

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSH034WB	DSH034WL
LAB FILE ID	: LH22011A	LH22010A
DATE PREPARED	: 08/20/22 15:00	08/20/22 15:00
DATE ANALYZED	: 08/22/22 17:35	08/22/22 17:16
PREP BATCH	: 22DSH034W	22DSH034W
CALIBRATION REF	: LH22004A	LH22004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.11	84	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.377	75	60-130
Hexacosane	0.125	0.116	93	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-16110
BATCH NO. : 22H180
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-16110-1	380-16110-1MS	380-16110-1MSD
LAB SAMPLE ID	: 22H180-01	22H180-01M	22H180-01S
LAB FILE ID	: LH22015A	LH22016A	LH22017A
DATE PREPARED	: 08/20/22 15:00	08/20/22 15:00	08/20/22 15:00
DATE ANALYZED	: 08/22/22 18:49	08/22/22 19:08	08/22/22 19:26
PREP BATCH	: 22DSH034W	22DSH034W	22DSH034W
CALIBRATION REF	: LH22004A	LH22004A	LH22004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.75	2.82	103	2.58	2.32	90	19	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.550	0.461	84	0.515	0.356	69	60-130
Hexacosane	0.138	0.132	96	0.129	0.118	92	60-130

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

CHAIN OF CUSTODY RECORD

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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:** GR

SAMPLES LOGGED IN BY: _____

SAMPLE TEMP RECEIVED AT: **SAMPLES REC'D DAY OF COLLECTION?** ☐ (check for yes)

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

☑ Monrovia 7.4 °C (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: Frozen _____ 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:	**PROJECT CODE:**
BWS HONOLULU	**Red Hill Special**
EEA CLIENT CODE: / **COC ID:**	**SAMPLE GROUP:**
	Weekly_RED_HILL (2022)

COMPLIANCE SAMPLES ☐ (check for yes) — **NON-COMPLIANCE SAMPLES** X (check for yes)

- Requires state forms ☐

REGULATION INVOLVED: _____

Type of samples (circle one): **ROUTINE** (**SPECIAL**) **CONFIRMATION** (eg. SDWA, Phase V, NPDES, FDA,...)

SEE ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes), ***OR***

list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

TAT requested: rush by adv notice only STD __ 1 wk _X_ 3 day ___ 2 day ___ 1 day ___

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	625 PAH + MS/MSD Volume (2x1L)	SUBCONTRACT-8015 Diesel LL(EAL) and Motg (2x1L)	Subcontract: 8015 Gas(Purge) LL(EAL)(4x40mL)	525.2 PREC-(MOD) 525plus Plus_ TICs (2x1L)	TB: Subcontract: 8015 Gas(Purge) (2x40mL)									SAMPLER COMMENTS
08/15/22	930	Halawa Shaft Static (Viewing Pool)		RGW			2	2	4	2	2									Halawa Shaft- Static Sample (Viewing Pool)
																				Temp Blank: 16 °C

380-17089 COC

* **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]	Olaf Happe	Honolulu Board of Water Supply	8/15/2022	930
RELINQUISHED BY:	[redacted]	Olaf Happe	Honolulu Board of Water Supply	8/15/2022	1130
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:	Andrew Wilson	Andrew Wilson	EEA	8.17.22	1100

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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 = 618A (Observation= 5.5 °C) (Corr.Factor -0.1 °C) (Final = 5.4 °C)

TYPE OF ICE: Real ___ Synthetic ✓ No Ice ___ CONDITION OF ICE: Frozen ✓ Partially Frozen ___ Thawed ___ N/A ___

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

7776 7560 4912

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: Sansafe. 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, SPME, @CH, 532LCMS, 556, 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:	[signature]	4VD1	Eurofins Eaton Analytical	8/17/22	11:00
SAMPLES CHECKED AGAINST COC BY:	[signature]	G. REITNER	Eurofins Eaton Analytical	8/17/2022	16:43

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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 = 401 (Observation= 1.5 °C) (Corr.Factor -0.1 °C) (Final = 1.4 °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) (2) / UPS / DHL / Area Fast / Top Line / Other: ____________

7776 7560 4555

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, SPME, @CH, 532LCMS, 555, 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:	[signature]	Chris Brock	Eurofins Eaton Analytical	8-17-22	1100
SAMPLES CHECKED AGAINST COC BY:	[signature]	G. REITNER	Eurofins Eaton Analytical	08/17/2022	16:43

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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 = 631 (Observation= 1.9 °C) (Corr.Factor -0.2 °C) (Final = 1.7 °C)

TYPE OF ICE: Real ___ Synthetic ✓ No Ice ___ CONDITION OF ICE: Frozen ___ Partially Frozen ___ Thawed ✓ N/A ___

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

7776 7560 4989

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: Sansafe. 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)

Exampl from headspace concerns: Methods 515.4, HAA(6251,552), 505, SPME, @OH, 532LCMS, 555, 535, Anatoxin, LCMS methods using 40 ml vials, International oilenter

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:	Emily Wilson	Andrea Wilson	Eurofins Eaton Analytical	8.17.22	1100
SAMPLES CHECKED AGAINST COC BY:	[signature]	G. REITNER	Eurofins Eaton Analytical	08/17/2022	16:43

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-17089-1

Login Number: 17089
List Number: 1
Creator: Segura, Ryan

List Source: Eurofins Eaton Monrovia

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