

ANALYTICAL REPORT

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Laboratory Job ID: 380-21531-1
Client Project/Site: RED-HILL

For:
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2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
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Kathleen Robb
Client Program Manager
10/24/2022 12:11:43 PM





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Definitions/Glossary

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

Job ID: 380-21531-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
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
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Detection Summary

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

Job ID: 380-21531-1

**Client Sample ID: HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-1

No Detections.

**Client Sample ID: TB:HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-2

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-21531-1

**Client Sample ID: HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-1

Date Collected: 09/19/22 09:30

Matrix: Drinking Water

Date Received: 09/21/22 09:50

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND	^3+	0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
2,4'-DDE	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
2,4'-DDT	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
2,4-Dinitrotoluene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
2,6-Dinitrotoluene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
4,4'-DDD	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
4,4'-DDE	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
4,4'-DDT	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Acenaphthene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Acenaphthylene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Acetochlor	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Alachlor	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
alpha-BHC	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
alpha-Chlordane	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Anthracene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:47	1
Atrazine	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Benz(a)anthracene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Benzo[a]pyrene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:47	1
Benzo[b]fluoranthene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:47	1
Benzo[g,h,i]perylene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Benzo[k]fluoranthene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:47	1
beta-BHC	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Bromacil	ND	*+ F1	0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Butachlor	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Butylbenzylphthalate	ND		0.49	ug/L		09/22/22 09:50	09/23/22 12:47	1
Caffeine	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Chlorobenzilate	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Chloroneb	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Chlorothalonil (Draconil, Bravo)	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Chlorpyrifos	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Chrysene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:47	1
delta-BHC	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Di(2-ethylhexyl)adipate	ND	^3+	0.59	ug/L		09/22/22 09:50	09/23/22 12:47	1
Bis(2-ethylhexyl) phthalate	ND		0.59	ug/L		09/22/22 09:50	09/23/22 12:47	1
Diazinon (Qualitative)	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Dibenz(a,h)anthracene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Diclorvos (DDVP)	ND	^3+	0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Dieldrin	ND		0.20	ug/L		09/22/22 09:50	09/23/22 12:47	1
Diethylphthalate	ND		0.49	ug/L		09/22/22 09:50	09/23/22 12:47	1
Dimethoate	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Dimethylphthalate	ND		0.49	ug/L		09/22/22 09:50	09/23/22 12:47	1
Di-n-butyl phthalate	ND		0.98	ug/L		09/22/22 09:50	09/23/22 12:47	1
Di-n-octyl phthalate	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Endosulfan I (Alpha)	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Endosulfan II (Beta)	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Endosulfan sulfate	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Endrin	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Endrin aldehyde	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1

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Client Sample Results

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

Job ID: 380-21531-1

**Client Sample ID: HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-1

Date Collected: 09/19/22 09:30

Matrix: Drinking Water

Date Received: 09/21/22 09:50

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Fluoranthene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Fluorene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
gamma-Chlordane	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Heptachlor	ND		0.039	ug/L		09/22/22 09:50	09/23/22 12:47	1
Heptachlor epoxide (isomer B)	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Hexachlorobenzene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Hexachlorocyclopentadiene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Indeno[1,2,3-cd]pyrene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Isophorone	ND		0.49	ug/L		09/22/22 09:50	09/23/22 12:47	1
Lindane	ND		0.039	ug/L		09/22/22 09:50	09/23/22 12:47	1
Malathion	ND	F1	0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Methoxychlor	ND	*+ F1	0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Metolachlor	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Metribuzin	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Molinate	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Naphthalene	ND		0.29	ug/L		09/22/22 09:50	09/23/22 12:47	1
Parathion	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Pendimethalin (Penoxaline)	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		09/22/22 09:50	09/23/22 12:47	1
Phenanthrene	ND		0.039	ug/L		09/22/22 09:50	09/23/22 12:47	1
Propachlor	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Pyrene	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Simazine	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Terbacil	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Terbutylazine	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
Thiobencarb	ND		0.20	ug/L		09/22/22 09:50	09/23/22 12:47	1
trans-Nonachlor	ND		0.049	ug/L		09/22/22 09:50	09/23/22 12:47	1
Trifluralin	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
1-Methylnaphthalene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1
2-Methylnaphthalene	ND		0.098	ug/L		09/22/22 09:50	09/23/22 12:47	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Sulfurous acid, cyclohexylmethyl pentadecyl ester	0.81	T J N	ug/L		2.32	1000309-22-3	09/22/22 09:50	09/23/22 12:47	1
Octadecanoic acid	0.58	T J N	ug/L		6.56	57-11-4	09/22/22 09:50	09/23/22 12:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	99		70 - 130	09/22/22 09:50	09/23/22 12:47	1
Triphenylphosphate	106		70 - 130	09/22/22 09:50	09/23/22 12:47	1
Perylene-d12	95		70 - 130	09/22/22 09:50	09/23/22 12:47	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		09/26/22 00:00	10/05/22 08:11	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1

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Client Sample Results

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

Job ID: 380-21531-1

**Client Sample ID: HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-1

Date Collected: 09/19/22 09:30

Matrix: Drinking Water

Date Received: 09/21/22 09:50

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
Acenaphthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Biphenyl	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Chrysene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Disalicylidenepranediamine	ND		0.1	0.05	µg/L		09/26/22 00:00	10/05/22 08:11	1
Fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Fluorene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Naphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Perylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Phenanthrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1
Pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 08:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	77		45 - 118	09/26/22 00:00	10/05/22 08:11	1
(d10-Phenanthrene)	88		56 - 123	09/26/22 00:00	10/05/22 08:11	1
(d12-Chrysene)	84		36 - 142	09/26/22 00:00	10/05/22 08:11	1
(d12-Perylene)	82		36 - 161	09/26/22 00:00	10/05/22 08:11	1
(d8-Naphthalene)	77		20 - 112	09/26/22 00:00	10/05/22 08:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.026		mg/L			10/03/22 14:40	1
MOTOR OIL	ND	U	0.052		mg/L			10/03/22 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	62		60 - 130		10/03/22 14:40	1
HEXACOSANE	77		60 - 130		10/03/22 14:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			09/23/22 02:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	86		60 - 140		09/23/22 02:42	1

Client Sample Results

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

Job ID: 380-21531-1

**Client Sample ID: TB:HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-2

Date Collected: 09/19/22 09:30

Matrix: Water

Date Received: 09/21/22 09:50

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			09/23/22 03:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	86		60 - 140					09/23/22 03:21	1

Action Limit Summary

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

Job ID: 380-21531-1

**Client Sample ID: HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL	RL	Method	Prep Type
				Limit			
Alachlor	ND		ug/L	2	0.049	525.2	Total/NA
Atrazine	ND		ug/L	3	0.049	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND	^3+	ug/L	400	0.59	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.59	525.2	Total/NA
Endrin	ND		ug/L	2	0.098	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.039	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.049	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.049	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.049	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.039	525.2	Total/NA
Methoxychlor	ND	*+ F1	ug/L	40	0.098	525.2	Total/NA
Simazine	ND		ug/L	4	0.049	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-21531-1

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

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-21531-1	HALAWA SHAFT VIEWING POC	99	106	95
380-21531-1 MS	HALAWA SHAFT VIEWING POOL (331-241-TP401)	101	114	100

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		2NMX (70-130)	TPP (70-130)	PRY (70-130)
380-21554-F-1-B DU	Duplicate	101	112	93
LCS 380-18191/3-A	Lab Control Sample	100	111	99
LCSD 380-18191/4-A	Lab Control Sample Dup	101	112	100
MB 380-18191/1-A	Method Blank	101	107	94
MRL 380-18191/2-A	Lab Control Sample	99	110	98

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: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (45-118)	Phenanth (56-123)	CRY (36-142)	NPT (20-112)	PRY (36-161)
380-21531-1	HALAWA SHAFT VIEWING POC	77	88	84	77	82

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (65-113)	Phenanth (80-111)	CRY (60-139)	NPT (44-119)	PRY (36-161)
100246-B1	Method Blank	92	96	103	76	86
100246-BS1	Lab Control Sample	88	96	96	84	88
100246-BS2	Lab Control Sample Dup	85	92	90	110	98

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

Eurofins Eaton Monrovia

Surrogate Summary

Client: City & County of Honolulu

Job ID: 380-21531-1

Project/Site: RED-HILL

(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: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
380-21531-1	HALAWA SHAFT VIEWING POC	62	77

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
22DSJ003WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BB (60-130)	XACOSAI (60-130)
22DSJ003WC	LCD	79	75
22DSJ003WL	Lab Control Sample	86	86

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-21531-1	HALAWA SHAFT VIEWING POC	86

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (70-130)
22VG39116C	LCD	105

Eurofins Eaton Monrovia

Surrogate Summary

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

Job ID: 380-21531-1

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)
22VG39116L	Lab Control Sample	107

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
380-21531-2	TB:HALAWA SHAFT VIEWING I	86

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB
22VG39116B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: MB 380-18191/1-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 18191

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
2,4'-DDE	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
2,4'-DDT	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
2,4-Dinitrotoluene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
2,6-Dinitrotoluene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
4,4'-DDD	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
4,4'-DDE	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
4,4'-DDT	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Acenaphthene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Acenaphthylene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Acetochlor	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Alachlor	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
alpha-BHC	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
alpha-Chlordane	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Anthracene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:27	1
Atrazine	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Benz(a)anthracene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Benzo[a]pyrene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:27	1
Benzo[b]fluoranthene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:27	1
Benzo[g,h,i]perylene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Benzo[k]fluoranthene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:27	1
beta-BHC	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Bromacil	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Butachlor	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Butylbenzylphthalate	ND		0.50	ug/L		09/22/22 09:50	09/23/22 12:27	1
Caffeine	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Chlorobenzilate	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Chloroneb	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Chlorothalonil (Draconil, Bravo)	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Chlorpyrifos	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Chrysene	ND		0.020	ug/L		09/22/22 09:50	09/23/22 12:27	1
delta-BHC	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Di(2-ethylhexyl)adipate	ND		0.60	ug/L		09/22/22 09:50	09/23/22 12:27	1
Bis(2-ethylhexyl) phthalate	ND		0.60	ug/L		09/22/22 09:50	09/23/22 12:27	1
Diazinon (Qualitative)	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Dibenz(a,h)anthracene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Diclorvos (DDVP)	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Dieldrin	ND		0.20	ug/L		09/22/22 09:50	09/23/22 12:27	1
Diethylphthalate	ND		0.50	ug/L		09/22/22 09:50	09/23/22 12:27	1
Dimethoate	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Dimethylphthalate	ND		0.50	ug/L		09/22/22 09:50	09/23/22 12:27	1
Di-n-butyl phthalate	ND		0.99	ug/L		09/22/22 09:50	09/23/22 12:27	1
Di-n-octyl phthalate	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Endosulfan I (Alpha)	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Endosulfan II (Beta)	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Endosulfan sulfate	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Endrin	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Endrin aldehyde	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1

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QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: MB 380-18191/1-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 18191

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Fluoranthene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Fluorene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
gamma-Chlordane	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Heptachlor	ND		0.040	ug/L		09/22/22 09:50	09/23/22 12:27	1
Heptachlor epoxide (isomer B)	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Hexachlorobenzene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Hexachlorocyclopentadiene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Indeno[1,2,3-cd]pyrene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Isophorone	ND		0.50	ug/L		09/22/22 09:50	09/23/22 12:27	1
Lindane	ND		0.040	ug/L		09/22/22 09:50	09/23/22 12:27	1
Malathion	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Methoxychlor	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Metolachlor	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Metribuzin	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Molinate	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Naphthalene	ND		0.30	ug/L		09/22/22 09:50	09/23/22 12:27	1
Parathion	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Pendimethalin (Penoxaline)	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Total Permethrin (mixed isomers)	ND		0.20	ug/L		09/22/22 09:50	09/23/22 12:27	1
Phenanthrene	ND		0.040	ug/L		09/22/22 09:50	09/23/22 12:27	1
Propachlor	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Pyrene	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Simazine	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Terbacil	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Terbutylazine	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
Thiobencarb	ND		0.20	ug/L		09/22/22 09:50	09/23/22 12:27	1
trans-Nonachlor	ND		0.050	ug/L		09/22/22 09:50	09/23/22 12:27	1
Trifluralin	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
1-Methylnaphthalene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1
2-Methylnaphthalene	ND		0.099	ug/L		09/22/22 09:50	09/23/22 12:27	1

<i>Tentatively Identified Compound</i>	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Cyclohexane, 1-methyl-2-propyl-</i>	0.975	T J N	ug/L		2.33	4291-79-6	09/22/22 09:50	09/23/22 12:27	1
<i>Decane</i>	1.66	T J N	ug/L		2.44	124-18-5	09/22/22 09:50	09/23/22 12:27	1
<i>Unknown</i>	0.627	T J	ug/L		2.69		09/22/22 09:50	09/23/22 12:27	1
<i>1-Heneicosanol</i>	0.536	T J N	ug/L		5.21	15594-90-8	09/22/22 09:50	09/23/22 12:27	1
<i>n-Hexadecanoic acid</i>	0.689	T J N	ug/L		5.87	57-10-3	09/22/22 09:50	09/23/22 12:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Nitro-m-xylene	101		70 - 130	09/22/22 09:50	09/23/22 12:27	1
Triphenylphosphate	107		70 - 130	09/22/22 09:50	09/23/22 12:27	1
Perylene-d12	94		70 - 130	09/22/22 09:50	09/23/22 12:27	1

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: LCS 380-18191/3-A

Matrix: Water

Analysis Batch: 18328

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 18191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.98	2.02		ug/L		102	70 - 130
2,4'-DDE	1.98	2.07		ug/L		104	70 - 130
2,4'-DDT	1.98	2.39		ug/L		120	70 - 130
2,4-Dinitrotoluene	1.98	2.03		ug/L		102	70 - 130
2,6-Dinitrotoluene	1.98	2.07		ug/L		104	70 - 130
4,4'-DDD	1.98	2.37		ug/L		119	70 - 130
4,4'-DDE	1.98	2.12		ug/L		107	70 - 130
4,4'-DDT	1.98	2.36		ug/L		119	70 - 130
Acenaphthene	1.98	1.94		ug/L		98	70 - 130
Acenaphthylene	1.98	1.97		ug/L		99	70 - 130
Acetochlor	1.98	2.31		ug/L		116	70 - 130
Alachlor	1.98	2.25		ug/L		113	70 - 130
alpha-BHC	1.98	2.20		ug/L		111	70 - 130
alpha-Chlordane	1.98	2.13		ug/L		107	70 - 130
Anthracene	1.98	2.06		ug/L		104	70 - 130
Atrazine	1.98	2.15		ug/L		108	70 - 130
Benz(a)anthracene	1.98	2.29		ug/L		115	70 - 130
Benzo[a]pyrene	1.98	2.16		ug/L		109	70 - 130
Benzo[b]fluoranthene	1.98	2.26		ug/L		114	70 - 130
Benzo[g,h,i]perylene	1.98	2.20		ug/L		111	70 - 130
Benzo[k]fluoranthene	1.98	2.24		ug/L		113	70 - 130
beta-BHC	1.98	2.25		ug/L		114	70 - 130
Bromacil	1.98	2.55		ug/L		129	70 - 130
Butachlor	1.98	2.37		ug/L		119	70 - 130
Butylbenzylphthalate	1.98	2.33		ug/L		118	70 - 130
Caffeine	1.98	1.59		ug/L		80	45 - 137
Chlorobenzilate	1.98	2.33		ug/L		118	70 - 130
Chloroneb	1.98	2.10		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	2.30		ug/L		116	70 - 130
Chlorpyrifos	1.98	2.29		ug/L		116	70 - 130
Chrysene	1.98	2.21		ug/L		111	70 - 130
delta-BHC	1.98	2.23		ug/L		113	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.23		ug/L		113	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.99		ug/L		100	70 - 130
Diazinon (Qualitative)	1.98	1.59		ug/L		80	15 - 132
Dibenz(a,h)anthracene	1.98	2.17		ug/L		109	70 - 130
Diclorvos (DDVP)	1.98	2.04		ug/L		103	70 - 130
Dieldrin	1.98	2.13		ug/L		108	70 - 130
Diethylphthalate	1.98	2.02		ug/L		102	70 - 130
Dimethoate	1.98	1.54		ug/L		77	35 - 100
Dimethylphthalate	1.98	2.08		ug/L		105	70 - 130
Di-n-butyl phthalate	3.97	4.21		ug/L		106	70 - 130
Di-n-octyl phthalate	1.98	2.06		ug/L		104	70 - 130
Endosulfan I (Alpha)	1.98	2.13		ug/L		108	70 - 130
Endosulfan II (Beta)	1.98	2.19		ug/L		110	70 - 130
Endosulfan sulfate	1.98	2.31		ug/L		116	70 - 130
Endrin	1.98	2.27		ug/L		114	70 - 130
Endrin aldehyde	1.98	2.26		ug/L		114	70 - 130

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: LCS 380-18191/3-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
EPTC	1.98	2.02		ug/L		102	70 - 130
Fluoranthene	1.98	2.32		ug/L		117	70 - 130
Fluorene	1.98	2.06		ug/L		104	70 - 130
gamma-Chlordane	1.98	2.12		ug/L		107	70 - 130
Heptachlor	1.98	2.02		ug/L		102	70 - 130
Heptachlor epoxide (isomer B)	1.98	2.16		ug/L		109	70 - 130
Hexachlorobenzene	1.98	1.90		ug/L		96	70 - 130
Hexachlorocyclopentadiene	1.98	2.13		ug/L		107	70 - 130
Indeno[1,2,3-cd]pyrene	1.98	2.24		ug/L		113	70 - 130
Isophorone	1.98	2.04		ug/L		103	70 - 130
Lindane	1.98	2.23		ug/L		112	70 - 130
Malathion	1.98	2.59		ug/L		130	70 - 130
Methoxychlor	1.98	2.70	*+	ug/L		136	70 - 130
Metolachlor	1.98	2.33		ug/L		117	70 - 130
Metribuzin	1.98	2.28		ug/L		115	70 - 130
Molinate	1.98	2.02		ug/L		102	70 - 130
Naphthalene	1.98	1.95		ug/L		98	70 - 130
Parathion	1.98	2.50		ug/L		126	70 - 130
Pendimethalin (Penoxaline)	1.98	2.31		ug/L		116	70 - 130
Phenanthrene	1.98	1.97		ug/L		99	70 - 130
Propachlor	1.98	2.20		ug/L		111	70 - 130
Pyrene	1.98	2.34		ug/L		118	70 - 130
Simazine	1.98	2.37		ug/L		120	70 - 130
Terbacil	1.98	2.31		ug/L		116	70 - 130
Terbutylazine	1.98	2.36		ug/L		119	70 - 130
Thiobencarb	1.98	2.15		ug/L		108	70 - 130
trans-Nonachlor	1.98	2.12		ug/L		107	70 - 130
Trifluralin	1.98	2.13		ug/L		107	70 - 130
1-Methylnaphthalene	1.98	1.99		ug/L		100	70 - 130
2-Methylnaphthalene	1.98	1.97		ug/L		99	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	100		70 - 130
Triphenylphosphate	111		70 - 130
Perylene-d12	99		70 - 130

Lab Sample ID: LCSD 380-18191/4-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	1.99	2.00		ug/L		101	70 - 130	1	20
2,4'-DDE	1.99	2.13		ug/L		107	70 - 130	3	20
2,4'-DDT	1.99	2.49		ug/L		125	70 - 130	4	20
2,4-Dinitrotoluene	1.99	2.13		ug/L		107	70 - 130	4	20
2,6-Dinitrotoluene	1.99	2.20		ug/L		111	70 - 130	7	20
4,4'-DDD	1.99	2.46		ug/L		123	70 - 130	4	20
4,4'-DDE	1.99	2.19		ug/L		110	70 - 130	3	20

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QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: LCSD 380-18191/4-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,4'-DDT	1.99	2.42		ug/L		122	70 - 130	3	20
Acenaphthene	1.99	1.93		ug/L		97	70 - 130	0	20
Acenaphthylene	1.99	1.91		ug/L		96	70 - 130	3	20
Acetochlor	1.99	2.26		ug/L		114	70 - 130	2	20
Alachlor	1.99	2.29		ug/L		115	70 - 130	2	20
alpha-BHC	1.99	2.24		ug/L		113	70 - 130	2	20
alpha-Chlordane	1.99	2.19		ug/L		110	70 - 130	3	20
Anthracene	1.99	2.02		ug/L		102	70 - 130	2	20
Atrazine	1.99	2.39		ug/L		120	70 - 130	11	20
Benz(a)anthracene	1.99	2.32		ug/L		117	70 - 130	1	20
Benzo[a]pyrene	1.99	2.12		ug/L		106	70 - 130	2	20
Benzo[b]fluoranthene	1.99	2.19		ug/L		110	70 - 130	3	20
Benzo[g,h,i]perylene	1.99	2.32		ug/L		117	70 - 130	5	20
Benzo[k]fluoranthene	1.99	2.30		ug/L		115	70 - 130	2	20
beta-BHC	1.99	2.25		ug/L		113	70 - 130	0	20
Bromacil	1.99	2.64	*+	ug/L		133	70 - 130	3	20
Butachlor	1.99	2.36		ug/L		119	70 - 130	0	20
Butylbenzylphthalate	1.99	2.35		ug/L		118	70 - 130	1	20
Caffeine	1.99	1.78		ug/L		90	45 - 137	11	20
Chlorobenzilate	1.99	2.35		ug/L		118	70 - 130	1	20
Chloroneb	1.99	2.11		ug/L		106	70 - 130	1	20
Chlorothalonil (Draconil, Bravo)	1.99	2.34		ug/L		118	70 - 130	2	20
Chlorpyrifos	1.99	2.29		ug/L		115	70 - 130	0	20
Chrysene	1.99	2.18		ug/L		109	70 - 130	1	20
delta-BHC	1.99	2.23		ug/L		112	70 - 130	0	20
Di(2-ethylhexyl)adipate	1.99	2.34		ug/L		118	70 - 130	5	20
Bis(2-ethylhexyl) phthalate	1.99	2.11		ug/L		106	70 - 130	6	20
Diazinon (Qualitative)	1.99	1.60		ug/L		80	15 - 132	1	20
Dibenz(a,h)anthracene	1.99	2.25		ug/L		113	70 - 130	4	20
Diclorvos (DDVP)	1.99	2.11		ug/L		106	70 - 130	3	20
Dieldrin	1.99	2.18		ug/L		110	70 - 130	2	20
Diethylphthalate	1.99	1.98		ug/L		100	70 - 130	2	20
Dimethoate	1.99	1.73		ug/L		87	35 - 100	12	20
Dimethylphthalate	1.99	2.18		ug/L		110	70 - 130	5	20
Di-n-butyl phthalate	3.98	4.14		ug/L		104	70 - 130	2	20
Di-n-octyl phthalate	1.99	2.07		ug/L		104	70 - 130	1	20
Endosulfan I (Alpha)	1.99	2.15		ug/L		108	70 - 130	1	20
Endosulfan II (Beta)	1.99	2.23		ug/L		112	70 - 130	2	20
Endosulfan sulfate	1.99	2.36		ug/L		118	70 - 130	2	20
Endrin	1.99	2.55		ug/L		128	70 - 130	12	20
Endrin aldehyde	1.99	2.08		ug/L		105	70 - 130	8	20
EPTC	1.99	2.05		ug/L		103	70 - 130	1	20
Fluoranthene	1.99	2.31		ug/L		116	70 - 130	0	20
Fluorene	1.99	2.04		ug/L		102	70 - 130	1	20
gamma-Chlordane	1.99	2.17		ug/L		109	70 - 130	3	20
Heptachlor	1.99	2.04		ug/L		103	70 - 130	1	20
Heptachlor epoxide (isomer B)	1.99	2.22		ug/L		111	70 - 130	2	20
Hexachlorobenzene	1.99	1.89		ug/L		95	70 - 130	1	20
Hexachlorocyclopentadiene	1.99	2.13		ug/L		107	70 - 130	0	20

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QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: LCSD 380-18191/4-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Indeno[1,2,3-cd]pyrene	1.99	2.30		ug/L		116	70 - 130	3	20	
Isophorone	1.99	2.10		ug/L		106	70 - 130	3	20	
Lindane	1.99	2.21		ug/L		111	70 - 130	1	20	
Malathion	1.99	2.58		ug/L		130	70 - 130	0	20	
Methoxychlor	1.99	2.75	*+	ug/L		138	70 - 130	2	20	
Metolachlor	1.99	2.33		ug/L		117	70 - 130	0	20	
Metribuzin	1.99	2.30		ug/L		116	70 - 130	1	20	
Molinate	1.99	2.11		ug/L		106	70 - 130	4	20	
Naphthalene	1.99	1.98		ug/L		100	70 - 130	2	20	
Parathion	1.99	2.44		ug/L		122	70 - 130	2	20	
Pendimethalin (Penoxaline)	1.99	2.28		ug/L		115	70 - 130	1	20	
Phenanthrene	1.99	1.98		ug/L		100	70 - 130	1	20	
Propachlor	1.99	2.30		ug/L		116	70 - 130	5	20	
Pyrene	1.99	2.33		ug/L		117	70 - 130	0	20	
Simazine	1.99	2.41		ug/L		121	70 - 130	2	20	
Terbacil	1.99	2.47		ug/L		124	70 - 130	7	20	
Terbutylazine	1.99	2.38		ug/L		119	70 - 130	1	20	
Thiobencarb	1.99	2.14		ug/L		108	70 - 130	0	20	
trans-Nonachlor	1.99	2.20		ug/L		111	70 - 130	3	20	
Trifluralin	1.99	2.13		ug/L		107	70 - 130	0	20	
1-Methylnaphthalene	1.99	1.91		ug/L		96	70 - 130	4	20	
2-Methylnaphthalene	1.99	1.97		ug/L		99	70 - 130	0	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	101		70 - 130
Triphenylphosphate	112		70 - 130
Perylene-d12	100		70 - 130

Lab Sample ID: MRL 380-18191/2-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
2,4'-DDD	0.0995	0.162	^3+	ug/L		163	50 - 150	
2,4'-DDE	0.0995	0.109		ug/L		110	50 - 150	
2,4'-DDT	0.0995	0.115		ug/L		116	50 - 150	
2,4-Dinitrotoluene	0.0995	0.0902	J	ug/L		91	50 - 150	
2,6-Dinitrotoluene	0.0995	0.0796	J	ug/L		80	50 - 150	
4,4'-DDD	0.0995	0.119		ug/L		119	50 - 150	
4,4'-DDE	0.0995	0.109		ug/L		109	50 - 150	
4,4'-DDT	0.0995	0.122		ug/L		123	50 - 150	
Acenaphthene	0.0995	0.0949	J	ug/L		95	50 - 150	
Acenaphthylene	0.0995	0.0856	J	ug/L		86	50 - 150	
Acetochlor	0.0497	0.0528	J	ug/L		106	50 - 150	
Alachlor	0.0497	0.0562		ug/L		113	50 - 150	
alpha-BHC	0.0995	0.106		ug/L		107	50 - 150	
alpha-Chlordane	0.0497	0.0578		ug/L		116	50 - 150	
Anthracene	0.0199	0.0213		ug/L		107	50 - 150	

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QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: MRL 380-18191/2-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Atrazine	0.0497	0.0512		ug/L		103	50 - 150
Benz(a)anthracene	0.0497	0.0610		ug/L		123	50 - 150
Benzo[a]pyrene	0.0199	0.0218		ug/L		110	50 - 150
Benzo[b]fluoranthene	0.0199	0.0242		ug/L		122	50 - 150
Benzo[g,h,i]perylene	0.0497	0.0491	J	ug/L		99	50 - 150
Benzo[k]fluoranthene	0.0199	0.0226		ug/L		114	50 - 150
beta-BHC	0.0995	0.102		ug/L		103	50 - 150
Bromacil	0.0995	0.115		ug/L		115	50 - 150
Butachlor	0.0497	0.0546		ug/L		110	50 - 150
Butylbenzylphthalate	0.149	0.189	J	ug/L		127	50 - 150
Caffeine	0.0497	0.0326	J	ug/L		66	50 - 150
Chlorobenzilate	0.0995	0.117		ug/L		117	50 - 150
Chloroneb	0.0995	0.0996		ug/L		100	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0995	0.103		ug/L		104	50 - 150
Chlorpyrifos	0.0497	0.0594		ug/L		119	50 - 150
Chrysene	0.0199	0.0244		ug/L		123	50 - 150
delta-BHC	0.0995	0.112		ug/L		112	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.455	J ^3+	ug/L		153	50 - 150
Bis(2-ethylhexyl) phthalate	0.597	0.661		ug/L		111	50 - 150
Diazinon (Qualitative)	0.0995	0.0784	J	ug/L		79	15 - 132
Dibenz(a,h)anthracene	0.0497	0.0506		ug/L		102	50 - 150
Diclorvos (DDVP)	0.0497	0.0856	^3+	ug/L		172	50 - 150
Dieldrin	0.0995	0.122	J	ug/L		122	50 - 150
Diethylphthalate	0.149	0.162	J	ug/L		108	50 - 150
Dimethoate	0.0995	0.0787	J	ug/L		79	35 - 100
Dimethylphthalate	0.298	0.292	J	ug/L		98	50 - 150
Di-n-butyl phthalate	0.298	0.358	J	ug/L		120	49 - 243
Di-n-octyl phthalate	0.0995	0.100		ug/L		101	50 - 150
Endosulfan I (Alpha)	0.0995	0.110		ug/L		111	50 - 150
Endosulfan II (Beta)	0.0995	0.147		ug/L		148	50 - 150
Endosulfan sulfate	0.0995	0.109		ug/L		109	50 - 150
Endrin	0.0995	0.141		ug/L		142	50 - 150
Endrin aldehyde	0.0995	0.100		ug/L		101	50 - 150
EPTC	0.0995	0.0996		ug/L		100	50 - 150
Fluoranthene	0.0497	0.0596	J	ug/L		120	50 - 150
Fluorene	0.0497	0.0505		ug/L		102	50 - 150
gamma-Chlordane	0.0497	0.0498	J	ug/L		100	50 - 150
Heptachlor	0.0398	0.0541		ug/L		136	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0490	J	ug/L		99	50 - 150
Hexachlorobenzene	0.0497	0.0541		ug/L		109	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0513		ug/L		103	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0502		ug/L		101	50 - 150
Isophorone	0.0995	0.102	J	ug/L		103	50 - 150
Lindane	0.0497	0.0545		ug/L		110	50 - 150
Malathion	0.0995	0.110		ug/L		111	50 - 150
Methoxychlor	0.0995	0.125		ug/L		126	50 - 150
Metolachlor	0.0497	0.0561		ug/L		113	50 - 150
Metribuzin	0.0497	0.0576		ug/L		116	50 - 150
Molinate	0.0995	0.101		ug/L		101	50 - 150

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QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: MRL 380-18191/2-A
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Naphthalene	0.0995	0.102	J	ug/L		103	50 - 150
Parathion	0.0995	0.138		ug/L		139	50 - 150
Pendimethalin (Penoxaline)	0.0995	0.137		ug/L		137	50 - 150
Phenanthrene	0.0199	0.0231	J	ug/L		116	50 - 150
Propachlor	0.0497	0.0522		ug/L		105	50 - 150
Pyrene	0.0497	0.0590		ug/L		119	50 - 150
Simazine	0.0497	0.0497	J	ug/L		100	50 - 150
Terbacil	0.0995	0.119		ug/L		120	50 - 150
Terbutylazine	0.0995	0.107		ug/L		107	50 - 150
Thiobencarb	0.0995	0.114	J	ug/L		115	50 - 150
trans-Nonachlor	0.0497	0.0449	J	ug/L		90	50 - 150
Trifluralin	0.0995	0.0821	J	ug/L		83	50 - 150
1-Methylnaphthalene	0.0995	0.103		ug/L		104	50 - 150
2-Methylnaphthalene	0.0995	0.100		ug/L		101	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
2-Nitro-m-xylene	99		70 - 130
Triphenylphosphate	110		70 - 130
Perylene-d12	98		70 - 130

Lab Sample ID: 380-21531-1 MS
Matrix: Drinking Water
Analysis Batch: 18328

Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND	^3+	2.01	2.02		ug/L		101	70 - 130
2,4'-DDE	ND		2.01	2.12		ug/L		105	70 - 130
2,4'-DDT	ND		2.01	2.49		ug/L		124	70 - 130
2,4-Dinitrotoluene	ND		2.01	2.11		ug/L		105	70 - 130
2,6-Dinitrotoluene	ND		2.01	2.16		ug/L		108	70 - 130
4,4'-DDD	ND		2.01	2.45		ug/L		122	70 - 130
4,4'-DDE	ND		2.01	2.15		ug/L		107	70 - 130
4,4'-DDT	ND		2.01	2.43		ug/L		121	70 - 130
Acenaphthene	ND		2.01	1.95		ug/L		97	70 - 130
Acenaphthylene	ND		2.01	2.00		ug/L		99	70 - 130
Acetochlor	ND		2.01	2.25		ug/L		112	70 - 130
Alachlor	ND		2.01	2.32		ug/L		116	70 - 130
alpha-BHC	ND		2.01	2.23		ug/L		111	70 - 130
alpha-Chlordane	ND		2.01	2.15		ug/L		107	70 - 130
Anthracene	ND		2.01	1.63		ug/L		81	70 - 130
Atrazine	ND		2.01	2.18		ug/L		109	70 - 130
Benz(a)anthracene	ND		2.01	2.27		ug/L		113	70 - 130
Benzo[a]pyrene	ND		2.01	1.95		ug/L		97	70 - 130
Benzo[b]fluoranthene	ND		2.01	2.26		ug/L		112	70 - 130
Benzo[g,h,i]perylene	ND		2.01	2.32		ug/L		116	70 - 130
Benzo[k]fluoranthene	ND		2.01	2.29		ug/L		114	70 - 130
beta-BHC	ND		2.01	2.27		ug/L		113	70 - 130
Bromacil	ND	*+ F1	2.01	2.78	F1	ug/L		138	70 - 130

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QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 380-21531-1 MS

Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)

Matrix: Drinking Water

Prep Type: Total/NA

Analysis Batch: 18328

Prep Batch: 18191

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Butachlor	ND		2.01	2.45		ug/L		122	70 - 130
Butylbenzylphthalate	ND		2.01	2.40		ug/L		119	70 - 130
Caffeine	ND		2.01	1.82		ug/L		91	46 - 144
Chlorobenzilate	ND		2.01	2.43		ug/L		121	70 - 130
Chloroneb	ND		2.01	2.14		ug/L		106	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		2.01	2.30		ug/L		115	70 - 130
Chlorpyrifos	ND		2.01	2.35		ug/L		117	70 - 130
Chrysene	ND		2.01	2.21		ug/L		110	70 - 130
delta-BHC	ND		2.01	2.28		ug/L		114	70 - 130
Di(2-ethylhexyl)adipate	ND	^3+	2.01	2.40		ug/L		115	70 - 130
Bis(2-ethylhexyl) phthalate	ND		2.01	2.14		ug/L		106	70 - 130
Diazinon (Qualitative)	ND		2.01	1.71		ug/L		85	15 - 132
Dibenz(a,h)anthracene	ND		2.01	2.33		ug/L		116	70 - 130
Diclorvos (DDVP)	ND	^3+	2.01	2.08		ug/L		104	70 - 130
Dieldrin	ND		2.01	2.17		ug/L		108	70 - 130
Diethylphthalate	ND		2.01	2.03		ug/L		101	70 - 130
Dimethoate	ND		2.01	1.64		ug/L		82	34 - 111
Dimethylphthalate	ND		2.01	2.19		ug/L		109	70 - 130
Di-n-butyl phthalate	ND		4.02	4.20		ug/L		104	70 - 130
Di-n-octyl phthalate	ND		2.01	2.13		ug/L		106	70 - 130
Endosulfan I (Alpha)	ND		2.01	2.18		ug/L		108	70 - 130
Endosulfan II (Beta)	ND		2.01	2.21		ug/L		110	70 - 130
Endosulfan sulfate	ND		2.01	2.38		ug/L		119	70 - 130
Endrin	ND		2.01	2.36		ug/L		118	70 - 130
Endrin aldehyde	ND		2.01	2.02		ug/L		101	70 - 130
EPTC	ND		2.01	2.07		ug/L		103	70 - 130
Fluoranthene	ND		2.01	2.34		ug/L		116	70 - 130
Fluorene	ND		2.01	2.08		ug/L		103	70 - 130
gamma-Chlordane	ND		2.01	2.20		ug/L		109	70 - 130
Heptachlor	ND		2.01	2.02		ug/L		101	70 - 130
Heptachlor epoxide (isomer B)	ND		2.01	2.26		ug/L		112	70 - 130
Hexachlorobenzene	ND		2.01	1.91		ug/L		95	70 - 130
Hexachlorocyclopentadiene	ND		2.01	2.16		ug/L		108	70 - 130
Indeno[1,2,3-cd]pyrene	ND		2.01	2.38		ug/L		118	70 - 130
Isophorone	ND		2.01	2.09		ug/L		104	70 - 130
Lindane	ND		2.01	2.23		ug/L		111	70 - 130
Malathion	ND	F1	2.01	2.63	F1	ug/L		131	70 - 130
Methoxychlor	ND	*+ F1	2.01	2.80	F1	ug/L		140	70 - 130
Metolachlor	ND		2.01	2.39		ug/L		119	70 - 130
Metribuzin	ND		2.01	2.38		ug/L		118	70 - 130
Molinate	ND		2.01	2.08		ug/L		103	70 - 130
Naphthalene	ND		2.01	1.99		ug/L		99	70 - 130
Parathion	ND		2.01	2.52		ug/L		126	70 - 130
Pendimethalin (Penoxaline)	ND		2.01	2.31		ug/L		115	70 - 130
Phenanthrene	ND		2.01	1.98		ug/L		99	70 - 130
Propachlor	ND		2.01	2.26		ug/L		113	70 - 130
Pyrene	ND		2.01	2.35		ug/L		117	70 - 130
Simazine	ND		2.01	2.49		ug/L		124	70 - 130
Terbacil	ND		2.01	2.42		ug/L		120	70 - 130

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 380-21531-1 MS
Matrix: Drinking Water
Analysis Batch: 18328

Client Sample ID: HALAWA SHAFT VIEWING POOL (331-241-TP401)
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Terbutylazine	ND		2.01	2.39		ug/L		119	70 - 130
Thiobencarb	ND		2.01	2.13		ug/L		106	70 - 130
trans-Nonachlor	ND		2.01	2.22		ug/L		110	70 - 130
Trifluralin	ND		2.01	2.16		ug/L		108	70 - 130
1-Methylnaphthalene	ND		2.01	1.96		ug/L		98	70 - 130
2-Methylnaphthalene	ND		2.01	1.96		ug/L		98	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
2-Nitro-m-xylene	101		70 - 130
Triphenylphosphate	114		70 - 130
Perylene-d12	100		70 - 130

Lab Sample ID: 380-21554-F-1-B DU
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
2,4'-DDD	ND	^3+	ND		ug/L		NC	20
2,4'-DDE	ND		ND		ug/L		NC	20
2,4'-DDT	ND		ND		ug/L		NC	20
2,4-Dinitrotoluene	ND		ND		ug/L		NC	20
2,6-Dinitrotoluene	ND		ND		ug/L		NC	20
4,4'-DDD	ND		ND		ug/L		NC	20
4,4'-DDE	ND		ND		ug/L		NC	20
4,4'-DDT	ND		ND		ug/L		NC	20
Acenaphthene	ND		ND		ug/L		NC	20
Acenaphthylene	ND		ND		ug/L		NC	20
Acetochlor	ND		ND		ug/L		NC	20
Alachlor	ND		ND		ug/L		NC	20
alpha-BHC	ND		ND		ug/L		NC	20
alpha-Chlordane	ND		ND		ug/L		NC	20
Anthracene	ND		ND		ug/L		NC	20
Atrazine	ND		ND		ug/L		NC	20
Benz(a)anthracene	ND		ND		ug/L		NC	20
Benzo[a]pyrene	ND		ND		ug/L		NC	20
Benzo[b]fluoranthene	ND		ND		ug/L		NC	20
Benzo[g,h,i]perylene	ND		ND		ug/L		NC	20
Benzo[k]fluoranthene	ND		ND		ug/L		NC	20
beta-BHC	ND		ND		ug/L		NC	20
Bromacil	ND	*+	ND	*+	ug/L		NC	20
Butachlor	ND		ND		ug/L		NC	20
Butylbenzylphthalate	ND		ND		ug/L		NC	20
Caffeine	ND		ND		ug/L		NC	20
Chlorobenzilate	ND		ND		ug/L		NC	20
Chloroneb	ND		ND		ug/L		NC	20
Chlorothalonil (Draconil, Bravo)	ND		ND		ug/L		NC	20
Chlorpyrifos	ND		ND		ug/L		NC	20
Chrysene	ND		ND		ug/L		NC	20

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 380-21554-F-1-B DU
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 18191

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
delta-BHC	ND		ND		ug/L		NC	20
Di(2-ethylhexyl)adipate	ND	^3+	ND		ug/L		NC	20
Bis(2-ethylhexyl) phthalate	ND		ND		ug/L		NC	20
Diazinon (Qualitative)	ND		ND		ug/L		NC	20
Dibenz(a,h)anthracene	ND		ND		ug/L		NC	20
Diclorvos (DDVP)	ND	^3+	ND		ug/L		NC	20
Dieldrin	ND		ND		ug/L		NC	20
Diethylphthalate	ND		ND		ug/L		NC	20
Dimethoate	ND		ND		ug/L		NC	20
Dimethylphthalate	ND		ND		ug/L		NC	20
Di-n-butyl phthalate	ND		ND		ug/L		NC	20
Di-n-octyl phthalate	ND		ND		ug/L		NC	20
Endosulfan I (Alpha)	ND		ND		ug/L		NC	20
Endosulfan II (Beta)	ND		ND		ug/L		NC	20
Endosulfan sulfate	ND		ND		ug/L		NC	20
Endrin	ND		ND		ug/L		NC	20
Endrin aldehyde	ND		ND		ug/L		NC	20
EPTC	ND		ND		ug/L		NC	20
Fluoranthene	ND		ND		ug/L		NC	20
Fluorene	ND		ND		ug/L		NC	20
gamma-Chlordane	ND		ND		ug/L		NC	20
Heptachlor	ND		ND		ug/L		NC	20
Heptachlor epoxide (isomer B)	ND		ND		ug/L		NC	20
Hexachlorobenzene	ND		ND		ug/L		NC	20
Hexachlorocyclopentadiene	ND		ND		ug/L		NC	20
Indeno[1,2,3-cd]pyrene	ND		ND		ug/L		NC	20
Isophorone	ND		ND		ug/L		NC	20
Lindane	ND		ND		ug/L		NC	20
Malathion	ND		ND		ug/L		NC	20
Methoxychlor	ND	*+	ND	*+	ug/L		NC	20
Metolachlor	ND		ND		ug/L		NC	20
Metribuzin	ND		ND		ug/L		NC	20
Molinate	ND		ND		ug/L		NC	20
Naphthalene	ND		ND		ug/L		NC	20
Parathion	ND		ND		ug/L		NC	20
Pendimethalin (Penoxaline)	ND		ND		ug/L		NC	20
Total Permethrin (mixed isomers)	ND		ND		ug/L		NC	20
Phenanthrene	ND		ND		ug/L		NC	20
Propachlor	ND		ND		ug/L		NC	20
Pyrene	ND		ND		ug/L		NC	20
Simazine	ND		ND		ug/L		NC	20
Terbacil	ND		ND		ug/L		NC	20
Terbutylazine	ND		ND		ug/L		NC	20
Thiobencarb	ND		ND		ug/L		NC	20
trans-Nonachlor	ND		ND		ug/L		NC	20
Trifluralin	ND		ND		ug/L		NC	20
1-Methylnaphthalene	ND		ND		ug/L		NC	20
2-Methylnaphthalene	ND		ND		ug/L		NC	20

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 380-21554-F-1-B DU
Matrix: Water
Analysis Batch: 18328

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 18191

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
2-Nitro-m-xylene	101		70 - 130
Triphenylphosphate	112		70 - 130
Perylene-d12	93		70 - 130

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

Lab Sample ID: 100246-B1
Matrix: water
Analysis Batch: O-38136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Acenaphthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Acenaphthylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Biphenyl	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Chrysene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Dibenzothiophene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		09/26/22 00:00	10/05/22 03:00	1
Fluoranthene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Fluorene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Naphthalene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Perylene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Phenanthrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1
Pyrene	ND		0.005	0.001	µg/L		09/26/22 00:00	10/05/22 03:00	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	92		65 - 113	09/26/22 00:00	10/05/22 03:00	1
(d10-Phenanthrene)	96		80 - 111	09/26/22 00:00	10/05/22 03:00	1
(d12-Chrysene)	103		60 - 139	09/26/22 00:00	10/05/22 03:00	1
(d12-Perylene)	86		36 - 161	09/26/22 00:00	10/05/22 03:00	1
(d8-Naphthalene)	76		44 - 119	09/26/22 00:00	10/05/22 03:00	1

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 100246-BS1
Matrix: water
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.474		µg/L		95	49 - 117
1-Methylphenanthrene	0.5	0.451		µg/L		90	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.588		µg/L		118	57 - 120
2,6-Dimethylnaphthalene	0.5	0.503		µg/L		101	54 - 117
2-Methylnaphthalene	0.5	0.439		µg/L		88	47 - 130
Acenaphthene	0.5	0.579		µg/L		116	53 - 131
Acenaphthylene	0.5	0.565		µg/L		113	43 - 140
Anthracene	0.5	0.44		µg/L		88	58 - 135
Benz[a]anthracene	0.5	0.513		µg/L		103	55 - 145
Benzo[a]pyrene	0.5	0.398		µg/L		80	51 - 143
Benzo[b]fluoranthene	0.5	0.54		µg/L		108	46 - 165
Benzo[e]pyrene	0.5	0.501		µg/L		100	42 - 152
Benzo[g,h,i]perylene	0.5	0.419		µg/L		84	63 - 133
Benzo[k]fluoranthene	0.5	0.483		µg/L		97	56 - 145
Biphenyl	0.5	0.5		µg/L		100	56 - 119
Chrysene	0.5	0.452		µg/L		90	56 - 141
Dibenz[a,h]anthracene	0.5	0.519		µg/L		104	55 - 150
Dibenzo[a,l]pyrene	0.5	0.288		µg/L		58	50 - 150
Dibenzothiophene	0.5	0.446		µg/L		89	75 - 113
Disalicylidenepropanediamine	50	37		µg/L		74	50 - 150
Fluoranthene	0.5	0.439		µg/L		88	60 - 146
Fluorene	0.5	0.548		µg/L		110	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.498		µg/L		100	50 - 151
Naphthalene	0.5	0.461		µg/L		92	41 - 126
Perylene	0.5	0.4		µg/L		80	48 - 141
Phenanthrene	0.5	0.449		µg/L		90	67 - 127
Pyrene	0.5	0.497		µg/L		99	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
(d10-Acenaphthene)	88		65 - 113
(d10-Phenanthrene)	96		80 - 111
(d12-Chrysene)	96		60 - 139
(d12-Perylene)	88		36 - 161
(d8-Naphthalene)	84		44 - 119

Lab Sample ID: 100246-BS2
Matrix: water
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.557		µg/L		111	49 - 117	16	30
1-Methylphenanthrene	0.5	0.466		µg/L		93	66 - 127	3	30
2,3,5-Trimethylnaphthalene	0.5	0.584		µg/L		117	57 - 120	1	30
2,6-Dimethylnaphthalene	0.5	0.481		µg/L		96	54 - 117	5	30
2-Methylnaphthalene	0.5	0.585		µg/L		117	47 - 130	28	30
Acenaphthene	0.5	0.565		µg/L		113	53 - 131	3	30
Acenaphthylene	0.5	0.561		µg/L		112	43 - 140	1	30
Anthracene	0.5	0.434		µg/L		87	58 - 135	1	30

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 100246-BS2
Matrix: water
Analysis Batch: O-38136

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-38136_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Benz[a]anthracene	0.5	0.535		µg/L		107	55 - 145	4	30	
Benzo[a]pyrene	0.5	0.497		µg/L		99	51 - 143	21	30	
Benzo[b]fluoranthene	0.5	0.583		µg/L		117	46 - 165	8	30	
Benzo[e]pyrene	0.5	0.539		µg/L		108	42 - 152	8	30	
Benzo[g,h,i]perylene	0.5	0.456		µg/L		91	63 - 133	8	30	
Benzo[k]fluoranthene	0.5	0.511		µg/L		102	56 - 145	5	30	
Biphenyl	0.5	0.47		µg/L		94	56 - 119	6	30	
Chrysene	0.5	0.432		µg/L		86	56 - 141	5	30	
Dibenz[a,h]anthracene	0.5	0.595		µg/L		119	55 - 150	13	30	
Dibenzo[a,l]pyrene	0.5	0.377		µg/L		75	50 - 150	26	30	
Dibenzothiophene	0.5	0.434		µg/L		87	75 - 113	2	30	
Disalicylidenepropanediamine	50	39.8		µg/L		80	50 - 150	8	30	
Fluoranthene	0.5	0.541		µg/L		108	60 - 146	20	30	
Fluorene	0.5	0.589		µg/L		118	58 - 131	7	30	
Indeno[1,2,3-cd]pyrene	0.5	0.619		µg/L		124	50 - 151	21	30	
Naphthalene	0.5	0.524		µg/L		105	41 - 126	13	30	
Perylene	0.5	0.446		µg/L		89	48 - 141	11	30	
Phenanthrene	0.5	0.439		µg/L		88	67 - 127	2	30	
Pyrene	0.5	0.546		µg/L		109	54 - 156	10	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	85		65 - 113
(d10-Phenanthrene)	92		80 - 111
(d12-Chrysene)	90		60 - 139
(d12-Perylene)	98		36 - 161
(d8-Naphthalene)	110		44 - 119

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

Lab Sample ID: 22DSJ003WB
Matrix: WATER
Analysis Batch: 22DSJ003W

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
DIESEL	ND	U	0.025		mg/L			10/03/22 12:30	1
MOTOR OIL	ND	U	0.05		mg/L			10/03/22 12:30	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOBENZENE					10/03/22 12:30	1
HEXACOSANE					10/03/22 12:30	1

Lab Sample ID: 22DSJ003WL
Matrix: WATER
Analysis Batch: 22DSJ003W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
DIESEL	2.5	2.47		mg/L		99	50 - 130	

Eurofins Eaton Monrovia

QC Sample Results

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

Job ID: 380-21531-1

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

Lab Sample ID: 22DSJ003WL
Matrix: WATER
Analysis Batch: 22DSJ003W

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

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOBENZENE	86		60 - 130
HEXACOSANE	86		60 - 130

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

Lab Sample ID: 22VG39I16B
Matrix: WATER
Analysis Batch: 22VG39I16

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			09/22/22 17:49	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOFLUOROBENZENE					09/22/22 17:49	1

Lab Sample ID: 22VG39I16L
Matrix: WATER
Analysis Batch: 22VG39I16

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	0.42		mg/L		84	60 - 130

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

QC Association Summary

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

Job ID: 380-21531-1

GC/MS Semi VOA

Prep Batch: 18191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	525.2	
MB 380-18191/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-18191/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-18191/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-18191/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-21531-1 MS	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	525.2	
380-21554-F-1-B DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 18328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	525.2	18191
MB 380-18191/1-A	Method Blank	Total/NA	Water	525.2	18191
LCS 380-18191/3-A	Lab Control Sample	Total/NA	Water	525.2	18191
LCSD 380-18191/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	18191
MRL 380-18191/2-A	Lab Control Sample	Total/NA	Water	525.2	18191
380-21531-1 MS	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	525.2	18191
380-21554-F-1-B DU	Duplicate	Total/NA	Water	525.2	18191

Subcontract

Analysis Batch: O-38136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-38136_P
100246-B1	Method Blank	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38136_P
100246-BS1	Lab Control Sample	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38136_P
100246-BS2	Lab Control Sample Dup	Total/NA	water	625 PAH Physis LL (EAL) + TICs	O-38136_P

Analysis Batch: 22DSJ003W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	8015 Diesel LL (EAL) and Motor Oil	
22DSJ003WB	Method Blank	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	
22DSJ003WL	Lab Control Sample	Total/NA	WATER	8015 Diesel LL (EAL) and Motor Oil	

Analysis Batch: 22VG39116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-21531-2	TB:HALAWA SHAFT VIEWING POOL (331-241-1	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
22VG39116B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Eurofins Eaton Monrovia

QC Association Summary

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

Job ID: 380-21531-1

Subcontract (Continued)

Analysis Batch: 22VG39116 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
22VG39116L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-38136_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP4	Total/NA	Drinking Water	EPA_625	
100246-B1	Method Blank	Total/NA	water	EPA_625	
100246-BS1	Lab Control Sample	Total/NA	water	EPA_625	
100246-BS2	Lab Control Sample Dup	Total/NA	water	EPA_625	

Lab Chronicle

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

Job ID: 380-21531-1

**Client Sample ID: HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-1

Date Collected: 09/19/22 09:30

Matrix: Drinking Water

Date Received: 09/21/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			18191	N8NE	EA MON	09/22/22 09:50
Total/NA	Analysis	525.2		1	18328	UJC9	EA MON	09/23/22 12:47
Total/NA	Prep	EPA_625		1	O-38136_P			09/26/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-38136	YC		10/05/22 08:11
Total/NA	Analysis	8015 Diesel LL (EAL) and Motor Oil		1	22DSJ003W			10/03/22 14:40
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39I16	SCerva		09/23/22 02:42

**Client Sample ID: TB:HALAWA SHAFT VIEWING POOL
(331-241-TP401)**

Lab Sample ID: 380-21531-2

Date Collected: 09/19/22 09:30

Matrix: Water

Date Received: 09/21/22 09:50

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	22VG39I16	SCerva		09/23/22 03:21

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: 380-21531-1

Laboratory: Eurofins Eaton Monrovia

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

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

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

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

Accreditation/Certification Summary

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

Job ID: 380-21531-1

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

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



Method Summary

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

Job ID: 380-21531-1

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: 380-21531-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-21531-1	HALAWA SHAFT VIEWING POOL (331-241-TP401)	Drinking Water	09/19/22 09:30	09/21/22 09:50
380-21531-2	TB:HALAWA SHAFT VIEWING POOL (331-241-TP401)	Water	09/19/22 09:30	09/21/22 09:50

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Date: 10-07-2022
EMAX Batch No.: 221270

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-21531


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

Sample ID	Control #	Col Date	Matrix	Analysis
380-21531-1	1270-01	09/19/22	WATER	TPH GASOLINE TPH DIESEL & MOTOR OIL
380-21531-2	1270-02	09/19/22	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

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

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

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



Type of Delivery	Airbill / Tracking Number	ECN <u>22170</u>
<input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others		Recipient <u>JHOWIN RAMORA</u>
<input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Date <u>9/22/22</u> Time <u>1340</u>

COC INSPECTION

<input checked="" type="checkbox"/> Client Name	<input checked="" type="checkbox"/> Client PM/FC	<input type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input checked="" type="checkbox"/> Matrix
<input checked="" type="checkbox"/> Address	<input checked="" type="checkbox"/> Tel # / Fax #	<input checked="" type="checkbox"/> Courier Signature	<input checked="" type="checkbox"/> Analysis Required	<input type="checkbox"/> Preservative (if any)	<input checked="" type="checkbox"/> TAT
Safety Issues (if any)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 <u>13</u> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	A - S/N _____	B - S/N <u>210740237</u>	C - S/N _____
			<u>D - S/N 210740272</u>

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>2</u>	<u>7, B</u>	<u>D22</u>	<u>1st date and time 9/19/22 930am</u> <u>2nd date and time 9/30/22 1130am</u>	<u>R1</u>
<i>(Large diagonal scribble across the table)</i>				

9/22/22 AB 9/26/22

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

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

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

REVIEWS:

Sample Labeling <u>JHOWIN RAMORA</u>	SRF <u>Aguilera</u>	PM <u>AB</u>
Date <u>9/22/22</u>	Date <u>9/22/22</u>	Date <u>9/26/22</u>

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.

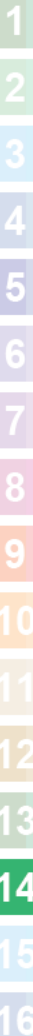
LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-21531

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

SDG#: 22I270



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-21531

SDG : 22I270

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

A total of two(2) water samples were received on 09/22/22 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. VG39I16B - 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. VG39I16L/VG39I16C 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 I268-01M/I268-01S. 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

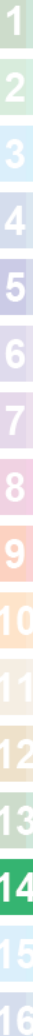
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
 Project : 380-21531
 SDG NO. : 221270
 Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
	WATER								
MBLK1W	VG39116B	1	NA	09/22/2217:49	09/22/2217:49	E122005A	E122003A	22VG39116	Method Blank
LCS1W	VG39116L	1	NA	09/22/2218:27	09/22/2218:27	E122006A	E122003A	22VG39116	Lab Control Sample (LCS)
LCD1W	VG39116C	1	NA	09/22/2219:05	09/22/2219:05	E122007A	E122003A	22VG39116	LCS Duplicate
380-21531-1	1270-01	1	NA	09/23/2202:42	09/23/2202:42	E122019A	E122014A	22VG39116	Field Sample
380-21531-2	1270-02	1	NA	09/23/2203:21	09/23/2203:21	E122020A	E122014A	22VG39116	Field Sample

FN - Filename
 % Moist - Percent Moisture



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SAMPLE RESULTS

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/19/22 09:30
Project     : 380-21531                   Date Received: 09/22/22
Batch No.   : 221270                       Date Extracted: 09/23/22 02:42
Sample ID   : 380-21531-1                 Date Analyzed: 09/23/22 02:42
Lab Samp ID: I270-01                       Dilution Factor: 1
Lab File ID: EI22019A                       Matrix: WATER
Ext Btch ID: 22VG39116                     % Moisture: NA
Calib. Ref.: EI22014A                       Instrument ID: 39
=====

```

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0344	0.0400	86	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/19/22 09:30
Project     : 380-21531                   Date Received: 09/22/22
Batch No.   : 221270                       Date Extracted: 09/23/22 03:21
Sample ID   : 380-21531-2                 Date Analyzed: 09/23/22 03:21
Lab Samp ID : I270-02                     Dilution Factor: 1
Lab File ID : EI22020A                    Matrix: WATER
Ext Btch ID : 22VG39116                   % Moisture: NA
Calib. Ref.: EI22014A                     Instrument ID: 39
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0345	0.0400	86	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

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QC SUMMARIES

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

```

=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/22/22 17:49
Project     : 380-21531                   Date Received: 09/22/22
Batch No.   : 221270                       Date Extracted: 09/22/22 17:49
Sample ID   : MBLK1W                       Date Analyzed: 09/22/22 17:49
Lab Samp ID : VG39I16B                     Dilution Factor: 1
Lab File ID : E122005A                     Matrix: WATER
Ext Btch ID : 22VG39I16                   % Moisture: NA
Calib. Ref.: E122003A                     Instrument ID: 39
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0336	0.0400	84	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-21531
BATCH NO. : 221270
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39116B	VG39116L	VG39116C
LAB FILE ID	: E122005A	E122006A	E122007A
DATE PREPARED	: 09/22/22 17:49	09/22/22 18:27	09/22/22 19:05
DATE ANALYZED	: 09/22/22 17:49	09/22/22 18:27	09/22/22 19:05
PREP BATCH	: 22VG39116	22VG39116	22VG39116
CALIBRATION REF:	E122003A	E122003A	E122003A

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	0.420	84	0.500	0.424	85	1	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0429	107	0.0400	0.0418	105	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 : 380-21464
BATCH NO. : 221268
METHOD : 5030B/8015B

MATRIX : WATER		% MOISTURE:NA
DILUTION FACTOR: 1	1	1
SAMPLE ID : 380-21464-1	380-21464-1MS	380-21464-1MSD
LAB SAMPLE ID : I268-01	I268-01M	I268-01S
LAB FILE ID : EI22008A	EI22009A	EI22010A
DATE PREPARED : 09/22/22 19:43	09/22/22 20:21	09/22/22 20:59
DATE ANALYZED : 09/22/22 19:43	09/22/22 20:21	09/22/22 20:59
PREP BATCH : 22VG39116	22VG39116	22VG39116
CALIBRATION REF: EI22003A	EI22003A	EI22003A

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	0.480	96	0.500	0.460	92	4	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0464	116	0.0400	0.0460	115	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-21531

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22I270



CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-21531

SDG : 22I270

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 09/22/22 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. DSJ003WB - 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. DSJ003WL/DSJ003WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 22I333-01M/22I333-01S. 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.

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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 09/19/22 09:30
Project     : 380-21531                   Date Received: 09/22/22
Batch No.   : 221270                       Date Extracted: 10/01/22 15:45
Sample ID   : 380-21531-1                 Date Analyzed: 10/03/22 14:40
Lab Samp ID: 221270-01                     Dilution Factor: 1
Lab File ID: LJ03014A                       Matrix: WATER
Ext Btch ID: 22DSJ003W                       % Moisture: NA
Calib. Ref.: LJ03003A                       Instrument ID: D5
=====

```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
Diesel	ND	0.026	0.013	
Motor Oil	ND	0.052	0.026	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.321	0.515	62	60-130
Hexacosane	0.0988	0.129	77	60-130

Notes:
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 970ml Final Volume : 5ml
Prepared by : JMuert Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

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=====
Client      : EUROFINS EATON ANALYTICAL   Date Collected: 10/01/22 15:45
Project     : 380-21531                   Date Received: 10/01/22
Batch No.   : 221270                       Date Extracted: 10/01/22 15:45
Sample ID   : MBLK1W                       Date Analyzed: 10/03/22 12:30
Lab Samp ID: DSJ003WB                       Dilution Factor: 1
Lab File ID: LJO3007A                       Matrix: WATER
Ext Btch ID: 22DSJ003W                       % Moisture: NA
Calib. Ref.: LJO3003A                       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	0.362	0.500	72	60-130
Hexacosane	0.101	0.125	80	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-21531
BATCH NO. : 221270
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSJ003WB	DSJ003WL	DSJ003WC
LAB FILE ID	: LJ03007A	LJ03008A	LJ03009A
DATE PREPARED	: 10/01/22 15:45	10/01/22 15:45	10/01/22 15:45
DATE ANALYZED	: 10/03/22 12:30	10/03/22 12:49	10/03/22 13:07
PREP BATCH	: 22DSJ003W	22DSJ003W	22DSJ003W
CALIBRATION REF:	LJ03003A	LJ03003A	LJ03003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.47	99	2.50	2.10	84	16	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.428	86	0.500	0.397	79	60-130
Hexacosane	0.125	0.108	86	0.125	0.0941	75	60-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-22076
BATCH NO. : 221333
METHOD : 3520C/8015B

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=====
MATRIX      : WATER                                     % MOISTURE:NA
DILUTION FACTOR: 1                                   1
SAMPLE ID   : 380-22076-1                             380-22076-1MSD
LAB SAMPLE ID : 221333-01                             221333-01S
LAB FILE ID  : LJ03097A                               LJ03021A
DATE PREPARED : 10/01/22 15:45                       10/01/22 15:45
DATE ANALYZED : 10/04/22 16:12                       10/03/22 16:49
PREP BATCH   : 22DSJ003W                             22DSJ003W
CALIBRATION REF: LJ03089A                             LJ03003A
    
```

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.60	2.47	95	2.78	2.37	85	4	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.520	0.383	74	0.555	0.449	81	60-130
Hexacosane	0.130	0.110	85	0.139	0.109	79	60-130

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

October 07, 2022

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

Project Name: RED-HILL Project # 38001111 Job # 380-21531-1
Physis Project ID: 1407003-301

Dear Debbie,


Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 9/22/2022. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

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

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,


Misty Mercier
714 602-5320
Extension 202
mistymercier@physislabs.com

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-301

RED-HILL Project # 38001111 Job # 380-21531-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
100247	HALAWA SHAFT Static	viewing Pool (380-21531-1)	9/19/2022	9:30	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

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

QUALITY ASSURANCE SUMMARY

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS₁/MS₂, BS₁/BS₂, LCS₁/LCS₂, LCM₁/LCM₂, CRM₁/CRM₂, surrogate spikes and/or replicate project sample analysis (R₁/R₂) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

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

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

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

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

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

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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

BIANALYTICALS

REPORT

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 100247-R1	HALAWA SHAFT Static viewing Po Matrix: Samplewater						Sampled:	19-Sep-22 9:30		Received:	22-Sep-22
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-38136	26-Sep-22	05-Oct-22



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 100247-R1	HALAWA SHAFT Static viewing Po Matrix: Samplewater						Sampled:	19-Sep-22 9:30		Received:	22-Sep-22	
(d10-Acenaphthene)	EPA 625.1	% Recovery	77	1			Total		0-38136	26-Sep-22	05-Oct-22	
(d10-Phenanthrene)	EPA 625.1	% Recovery	88	1			Total		0-38136	26-Sep-22	05-Oct-22	
(d12-Chrysene)	EPA 625.1	% Recovery	84	1			Total		0-38136	26-Sep-22	05-Oct-22	
(d12-Perylene)	EPA 625.1	% Recovery	82	1			Total		0-38136	26-Sep-22	05-Oct-22	
(d8-Naphthalene)	EPA 625.1	% Recovery	77	1			Total		0-38136	26-Sep-22	05-Oct-22	
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		0-38136	26-Sep-22	05-Oct-22	

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-38136	26-Sep-22	05-Oct-22

QUALITY CONTROL REPORT

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 100246-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-38136			Prepared: 26-Sep-22		Analyzed: 05-Oct-22			
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 100246-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-38136			Prepared: 26-Sep-22		Analyzed: 05-Oct-22			
Disalicylideneprapanediamin	Total	37	1	0.05	0.1	µg/L	50	0	74	50 - 150%	PASS		
Sample ID: 100246-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-38136			Prepared: 26-Sep-22		Analyzed: 05-Oct-22			
Disalicylideneprapanediamin	Total	39.8	1	0.05	0.1	µg/L	50	0	80	50 - 150%	PASS	8	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 100246-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
	Method: EPA 625.1					Batch ID: O-38136	Prepared: 26-Sep-22	Analyzed: 05-Oct-22			
(d10-Acenaphthene)	Total	92	1			% Recovery	100	92	65 - 113%	PASS	
(d10-Phenanthrene)	Total	96	1			% Recovery	100	96	80 - 111%	PASS	
(d12-Chrysene)	Total	103	1			% Recovery	100	103	60 - 139%	PASS	
(d12-Perylene)	Total	86	1			% Recovery	100	86	36 - 161%	PASS	
(d8-Naphthalene)	Total	76	1			% Recovery	100	76	44 - 119%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							
Fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Fluorene	Total	ND	1	0.001	0.005	µg/L							
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L							
Naphthalene	Total	ND	1	0.001	0.005	µg/L							
Perylene	Total	ND	1	0.001	0.005	µg/L							
Phenanthrene	Total	ND	1	0.001	0.005	µg/L							
Pyrene	Total	ND	1	0.001	0.005	µg/L							



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 100246-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-38136			Prepared: 26-Sep-22		Analyzed: 05-Oct-22					
(d10-Acenaphthene)	Total	88	1			% Recovery	100	0	88	65 - 113%	PASS	
(d10-Phenanthrene)	Total	96	1			% Recovery	100	0	96	80 - 111%	PASS	
(d12-Chrysene)	Total	96	1			% Recovery	100	0	96	60 - 139%	PASS	
(d12-Perylene)	Total	88	1			% Recovery	100	0	88	36 - 161%	PASS	
(d8-Naphthalene)	Total	84	1			% Recovery	100	0	84	44 - 119%	PASS	
1-Methylnaphthalene	Total	0.474	1	0.001	0.005	µg/L	0.5	0	95	49 - 117%	PASS	
1-Methylphenanthrene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.588	1	0.001	0.005	µg/L	0.5	0	118	57 - 120%	PASS	
2,6-Dimethylnaphthalene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	54 - 117%	PASS	
2-Methylnaphthalene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	47 - 130%	PASS	
Acenaphthene	Total	0.579	1	0.001	0.005	µg/L	0.5	0	116	53 - 131%	PASS	
Acenaphthylene	Total	0.565	1	0.001	0.005	µg/L	0.5	0	113	43 - 140%	PASS	
Anthracene	Total	0.44	1	0.001	0.005	µg/L	0.5	0	88	58 - 135%	PASS	
Benz[a]anthracene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.398	1	0.001	0.005	µg/L	0.5	0	80	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.54	1	0.001	0.005	µg/L	0.5	0	108	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.501	1	0.001	0.005	µg/L	0.5	0	100	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	56 - 145%	PASS	
Biphenyl	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	56 - 119%	PASS	
Chrysene	Total	0.452	1	0.001	0.005	µg/L	0.5	0	90	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.519	1	0.001	0.005	µg/L	0.5	0	104	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.288	1	0.001	0.005	µg/L	0.5	0	58	50 - 150%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	75 - 113%	PASS		
Fluoranthene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	60 - 146%	PASS		
Fluorene	Total	0.548	1	0.001	0.005	µg/L	0.5	0	110	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	50 - 151%	PASS		
Naphthalene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	41 - 126%	PASS		
Perylene	Total	0.4	1	0.001	0.005	µg/L	0.5	0	80	48 - 141%	PASS		
Phenanthrene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	67 - 127%	PASS		
Pyrene	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 100246-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-38136			Prepared: 26-Sep-22			Analyzed: 05-Oct-22				
(d10-Acenaphthene)	Total	85	1				% Recovery	100	0	85	65 - 113%	PASS	3	30	PASS
(d10-Phenanthrene)	Total	92	1				% Recovery	100	0	92	80 - 111%	PASS	4	30	PASS
(d12-Chrysene)	Total	90	1				% Recovery	100	0	90	60 - 139%	PASS	6	30	PASS
(d12-Perylene)	Total	98	1				% Recovery	100	0	98	36 - 161%	PASS	11	30	PASS
(d8-Naphthalene)	Total	110	1				% Recovery	100	0	110	44 - 119%	PASS	27	30	PASS
1-Methylnaphthalene	Total	0.557	1	0.001	0.005	µg/L		0.5	0	111	49 - 117%	PASS	16	30	PASS
1-Methylphenanthrene	Total	0.466	1	0.001	0.005	µg/L		0.5	0	93	66 - 127%	PASS	3	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.584	1	0.001	0.005	µg/L		0.5	0	117	57 - 120%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.481	1	0.001	0.005	µg/L		0.5	0	96	54 - 117%	PASS	5	30	PASS
2-Methylnaphthalene	Total	0.585	1	0.001	0.005	µg/L		0.5	0	117	47 - 130%	PASS	28	30	PASS
Acenaphthene	Total	0.565	1	0.001	0.005	µg/L		0.5	0	113	53 - 131%	PASS	3	30	PASS
Acenaphthylene	Total	0.561	1	0.001	0.005	µg/L		0.5	0	112	43 - 140%	PASS	1	30	PASS
Anthracene	Total	0.434	1	0.001	0.005	µg/L		0.5	0	87	58 - 135%	PASS	1	30	PASS
Benz[a]anthracene	Total	0.535	1	0.001	0.005	µg/L		0.5	0	107	55 - 145%	PASS	4	30	PASS
Benzo[a]pyrene	Total	0.497	1	0.001	0.005	µg/L		0.5	0	99	51 - 143%	PASS	21	30	PASS
Benzo[b]fluoranthene	Total	0.583	1	0.001	0.005	µg/L		0.5	0	117	46 - 165%	PASS	8	30	PASS
Benzo[e]pyrene	Total	0.539	1	0.001	0.005	µg/L		0.5	0	108	42 - 152%	PASS	8	30	PASS
Benzo[g,h,i]perylene	Total	0.456	1	0.001	0.005	µg/L		0.5	0	91	63 - 133%	PASS	8	30	PASS
Benzo[k]fluoranthene	Total	0.511	1	0.001	0.005	µg/L		0.5	0	102	56 - 145%	PASS	5	30	PASS
Biphenyl	Total	0.47	1	0.001	0.005	µg/L		0.5	0	94	56 - 119%	PASS	6	30	PASS
Chrysene	Total	0.432	1	0.001	0.005	µg/L		0.5	0	86	56 - 141%	PASS	5	30	PASS
Dibenz[a,h]anthracene	Total	0.595	1	0.001	0.005	µg/L		0.5	0	119	55 - 150%	PASS	13	30	PASS
Dibenzo[a,l]pyrene	Total	0.377	1	0.001	0.005	µg/L		0.5	0	75	50 - 150%	PASS	26	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Dibenzothiophene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	75 - 113%	PASS	2	30	PASS
Fluoranthene	Total	0.541	1	0.001	0.005	µg/L	0.5	0	108	60 - 146%	PASS	20	30	PASS
Fluorene	Total	0.589	1	0.001	0.005	µg/L	0.5	0	118	58 - 131%	PASS	7	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.619	1	0.001	0.005	µg/L	0.5	0	124	50 - 151%	PASS	21	30	PASS
Naphthalene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	41 - 126%	PASS	13	30	PASS
Perylene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	48 - 141%	PASS	11	30	PASS
Phenanthrene	Total	0.439	1	0.001	0.005	µg/L	0.5	0	88	67 - 127%	PASS	2	30	PASS
Pyrene	Total	0.546	1	0.001	0.005	µg/L	0.5	0	109	54 - 156%	PASS	10	30	PASS

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- 14
- 15
- 16

PHYSIS

TENTATIVELY

IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 100247

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4289	8.1151	1111	Anthracene-D10	1517-22-2	96
No TICs were detected in this sample per the criteria.					

Concentration estimated using the response for Anthracene-d10

- 1
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- 11
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- 13
- 14
- 15
- 16

Sample ID: Lab Blank Batch O-38136

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
32.4297	9.1660	1111	Anthracene-D10-	1517-22-2	97
No TICs were detected in this sample per the criteria.					

Concentration estimated using the response for Anthracene-d10

- 1
- 2
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- 11
- 12
- 13
- 14
- 15
- 16

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Project Iteration ID: 1407003-301
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-21531-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: AI
2. Date Received: 9/22/22
3. Time Received: 1200
4. Client Name: Eurofins
5. Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - i. Start Time: _____
 - ii. End Time: _____
 - iii. Total Mileage: _____
 - iv. Number of Pickups: _____
6. Container Information: (Please put the # of containers or circle none)
 - 1 Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 0.9 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

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

Notes:



Eaton Analytical

CHAIN OF CUSTODY RECORD

EUROFINS EATON ANALYTICAL USE ONLY:

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

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: MB

SAMPLES LOGGED IN BY: _____

SAMPLE TEMP RECEIVED AT:

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

Monrovia _____ °C (Compliance: 4 ± 2 °C)

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

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: BWS HONOLULU		PROJECT CODE: Red Hill Special		COMPLIANCE SAMPLES <input type="checkbox"/> NON-COMPLIANCE SAMPLES <input checked="" type="checkbox"/>		REGULATION INVOLVED: _____	
EEA CLIENT CODE: _____		COC ID: _____		SAMPLE GROUP: Weekly_RED_HILL (2022)		Type of samples (circle one): ROUTINE <input type="checkbox"/> SPECIAL <input checked="" type="checkbox"/> CONFIRMATION (eg. SDWA, Phase V, NPDES, FDA,...)	
TAT requested: rush by adv notice only		STD __ 1 wk __ X __ 3 day __ 2 day __ 1 day __		SEE ATTACHED BOTTLE ORDER FOR ANALYSES <input type="checkbox"/> (check for yes), OR		list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)	
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
09/19/22		Halawa Shaft Static (Viewing Pool)		RGW			Halawa Shaft- Static Sample (Viewing Pool)
							Temp Blank 17°C

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

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:	Olaf Happe	Honolulu Board of Water Supply	9/19/2022	930
RELINQUISHED BY:	Olaf Happe	Honolulu Board of Water Supply	9/19/2022	1045
RECEIVED BY: <u>Mark Urratia</u>	Mark Urratia	EPA	9/21/22	950
RELINQUISHED BY:				
RECEIVED BY:				

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

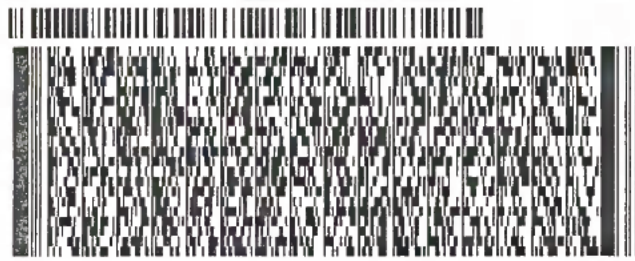
SHIP DATE: 20SEP22
ACTWGT: 52.00 LB
CAD: 100205419/INET4530

BILL RECIPIENT

TO **M. VASQUEZ**
EUROFINS EATON ANALYTICAL, INC
750 ROYAL OAKS DR
SUITE 100
MONROVIA CA 91016

(626) 386-1178 REF
INV: PO: DEPT:

581J1ME80FE2D

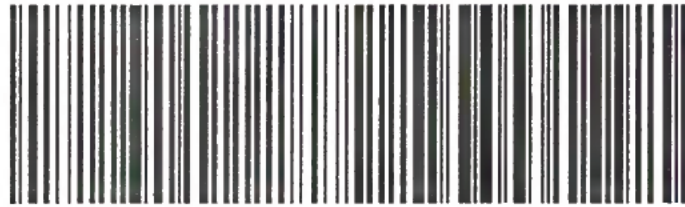


1 of 2
WED - 21 SEP 10:30A
PRIORITY OVERNIGHT

TRK# 7779 8798 4390
0201
MASTER

WZ WHPA

91016
CA-US BUR

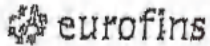


After printing this label:

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

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





Eaton Analytical

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 = 630A (Observation = 4.8 °C) (Corr. Factor 0.1 °C) (Final = 4.7 °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: _____

Compliance Acceptance Criteria:

- 1) Chemistry: >0, ≤ 8°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 quadrant

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: Method = 815.4, HAA(8251,822), 805, BPME, @CH, 832LCMS, 855, 838, Anatoxin, LCMS methods using 40 ml vials, International clients

Samp ID	Bottle #	Nona/<8 mm	>8mm	Test	Samp ID	Bottle #	Nona/<8 mm	>8mm	Test	Samp ID	Bottle #	Nona/<8 mm	>8mm	Test	Samp ID	Bottle #	Nona/<8 mm	>8mm	Test	

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

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RECEIVED BY: <u>[Signature]</u>	<u>Mark Accutia</u>	Eurofins Eaton Analytical	<u>9/21/22</u>	<u>950</u>
SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLES CHECKED AGAINST DOG BY:		Eurofins Eaton Analytical		

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-21531-1

Login Number: 21531
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	