eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 3/10/2023 5:51:59 PM

JOB DESCRIPTION

RED-HILL
RUSH Weekly Red Hill

JOB NUMBER

380-32110-1

Eurofins Eaton Analytical Pomona
941 Corporate Center Drive
Pomona CA 91768-2642

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis.

Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report,Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.

Test results relate only to the sample(s) tested.

Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW,Water matrices)

Authorization

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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-32110-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^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.

Subcontract

Qualifier	Qualifier Description
J	The reported result for this analyte should be considered an estimated value.
U	This analyte was not detected.

Glossary

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

Job ID: 380-32110-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-32110-1

Comments
No additional comments.

Receipt
The samples were received on 12/21/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, an where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2º C.

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

Subcontract non-Sister
See attached subcontract report.

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

Subcontract Work
Methods 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

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

Job ID: 380-32110-1

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-32110-1

No Detections.

Client Sample ID: TB:MOANALUA WELLS

Lab Sample ID: 380-32110-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-32110-1

Client Sample ID: MOANALUA WELLS
Date Collected: 12/19/22 11:08
Date Received: 12/21/22 10:00

Lab Sample ID: 380-32110-1
Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
2,4'-DDE	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
2,4'-DDT	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
2,4-Dinitrotoluene	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
2,6-Dinitrotoluene	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
4,4'-DDD	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
4,4'-DDE	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
4,4'-DDT	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Acenaphthene	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Acenaphthylene	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Acetochlor	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Alachlor	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
alpha-BHC	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
alpha-Chlordane	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Anthracene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 15:46	1
Atrazine	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Benz(a)anthracene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Benzo[a]pyrene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 15:46	1
Benzo[b]fluoranthene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 15:46	1
Benzo[g,h,i]perylene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Benzo[k]fluoranthene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 15:46	1
beta-BHC	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Bromacil	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Butachlor	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Butylbenzylphthalate	ND		0.51		ug/L		12/22/22 06:58	12/27/22 15:46	1
Caffeine	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Chlorobenzilate	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Chloroneb	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Chlorothalonil (Draconil, Bravo)	ND	^3+	0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Chlorpyrifos	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Chrysene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 15:46	1
delta-BHC	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Di(2-ethylhexyl)adipate	ND		0.61		ug/L		12/22/22 06:58	12/27/22 15:46	1
Bis(2-ethylhexyl) phthalate	ND		0.61		ug/L		12/22/22 06:58	12/27/22 15:46	1
Diazinon (Qualitative)	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Dibenz(a,h)anthracene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Diclorvos (DDVP)	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Dieldrin	ND		0.20		ug/L		12/22/22 06:58	12/27/22 15:46	1
Diethylphthalate	ND		0.51		ug/L		12/22/22 06:58	12/27/22 15:46	1
Dimethoate	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Dimethylphthalate	ND		0.51		ug/L		12/22/22 06:58	12/27/22 15:46	1
Di-n-butyl phthalate	ND		1.0		ug/L		12/22/22 06:58	12/27/22 15:46	1
Di-n-octyl phthalate	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Endosulfan I (Alpha)	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Endosulfan II (Beta)	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Endosulfan sulfate	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Endrin	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Endrin aldehyde	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
EPTC	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1

Client Sample ID: MOANALUA WELLS

Date Collected: 12/19/22 11:08
Date Received: 12/21/22 10:00

Lab Sample ID: 380-32110-1

Matrix: Drinking Water
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Fluorene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
gamma-Chlordane	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Heptachlor	ND		0.041		ug/L		12/22/22 06:58	12/27/22 15:46	1
Heptachlor epoxide (isomer B)	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Hexachlorobenzene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Hexachlorocyclopentadiene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Indeno[1,2,3-cd]pyrene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Isophorone	ND		0.51		ug/L		12/22/22 06:58	12/27/22 15:46	1
Lindane	ND		0.041		ug/L		12/22/22 06:58	12/27/22 15:46	1
Malathion	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Methoxychlor	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Metolachlor	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Metribuzin	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Molinate	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Naphthalene	ND		0.31		ug/L		12/22/22 06:58	12/27/22 15:46	1
Parathion	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Pendimethalin (Penoxaline)	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		12/22/22 06:58	12/27/22 15:46	1
Phenanthrene	ND		0.041		ug/L		12/22/22 06:58	12/27/22 15:46	1
Propachlor	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Pyrene	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Simazine	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Terbacil	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Terbuthylazine	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1
Thiobencarb	ND		0.20		ug/L		12/22/22 06:58	12/27/22 15:46	1
trans-Nonachlor	ND		0.051		ug/L		12/22/22 06:58	12/27/22 15:46	1
Trifluralin	ND		0.10		ug/L		12/22/22 06:58	12/27/22 15:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/22/22 06:58*	*12/27/22 15:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*97*		*70 - 130*	*12/22/22 06:58*	*12/27/22 15:46*	*1*
Triphenylphosphate	*118*		*70 - 130*	*12/22/22 06:58*	*12/27/22 15:46*	*1*
Perylene-d12	*101*		*70 - 130*	*12/22/22 06:58*	*12/27/22 15:46*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Acenaphthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Anthracene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-32110-1
Date Collected: 12/19/22 11:08
Matrix: Drinking Water
Date Received: 12/21/22 10:00
PWSID Number: HI0000331

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Biphenyl	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Chrysene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/26/22 00:00	01/08/23 12:51	1
Fluoranthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Fluorene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Naphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Perylene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Phenanthrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1
Pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*85*		*27 - 133*	*12/26/22 00:00*	*01/08/23 12:51*	*1*
(d10-Phenanthrene)	*90*		*43 - 129*	*12/26/22 00:00*	*01/08/23 12:51*	*1*
(d12-Chrysene)	*97*		*52 - 144*	*12/26/22 00:00*	*01/08/23 12:51*	*1*
(d12-Perylene)	*84*		*36 - 161*	*12/26/22 00:00*	*01/08/23 12:51*	*1*
(d8-Naphthalene)	*77*		*25 - 125*	*12/26/22 00:00*	*01/08/23 12:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			12/23/22 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*80*		*60 - 140*		*12/23/22 01:06*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			01/05/23 23:33	1
JP5	ND	U	0.056		mg/L			01/05/23 23:33	1
JP8	ND	U	0.056		mg/L			01/05/23 23:33	1
MOTOR OIL	ND	U	0.056		mg/L			01/05/23 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*79*		*60 - 130*		*01/05/23 23:33*	*1*
HEXACOSANE	*115*		*60 - 130*		*01/05/23 23:33*	*1*

Client Sample ID: TB:MOANALUA WELLS

Lab Sample ID: 380-32110-2
Date Collected: 12/19/22 11:08
Matrix: Drinking Water
Date Received: 12/21/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	0.019	J	0.020		mg/L			12/23/22 01:42	1

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

Job ID: 380-32110-1

Client Sample ID: TB:MOANALUA WELLS
Date Collected: 12/19/22 11:08
Date Received: 12/21/22 10:00

Lab Sample ID: 380-32110-2
Matrix: Drinking Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140		12/23/22 01:42	1

Action Limit Summary

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

Job ID: 380-32110-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-32110-1

PWSID Number: HI0000331

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	ND		ug/L	2	0.051	525.2	Total/NA
Atrazine	ND		ug/L	3	0.051	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.61	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.61	525.2	Total/NA
Endrin	ND		ug/L	2	0.10	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.041	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND		ug/L	0.2	0.051	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.051	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.051	525.2	Total/NA
Lindane	ND		ug/L	0.2	0.041	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.10	525.2	Total/NA
Simazine	ND		ug/L	4	0.051	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-32110-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-32110-1	MOANALUA WELLS	97	118	101

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-32064-C-1-A MS	Matrix Spike	101	106	101
380-32064-I-1-A MSD	Matrix Spike Duplicate	98	108	102
LCS 380-27725/3-A	Lab Control Sample	98	113	100
LCSD 380-27725/4-A	Lab Control Sample Dup	101	108	99
MB 380-27725/1-A	Method Blank	100	106	94
MRL 380-27725/2-A	Lab Control Sample	100	116	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: BlankMatrix — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
102968-B1	Method Blank	92	94	99	87	103
102968-BS1	Lab Control Sample	93	96	97	84	99
102968-BS2	Lab Control Sample Dup	92	95	95	84	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
380-32110-1	MOANALUA WELLS	85	90	97	77	84

Surrogate Legend

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

Surrogate Summary

Client: City & County of Honolulu
Job ID: 380-32110-1
Project/Site: RED-HILL

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-32110-1	MOANALUA WELLS	80
380-32110-2	TB:MOANALUA WELLS	79

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	
22VG39L08B	Method Blank	

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
22VG39L08C	LCD	109
22VG39L08L	Lab Control Sample	110

Surrogate Legend
BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-32110-1	MOANALUA WELLS	79	115

Surrogate Legend
BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSA
Lab Sample ID	Client Sample ID		
22DSL040WB	Method Blank		

Surrogate Legend
BB = BROMOBENZENE

Surrogate Summary

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

Job ID: 380-32110-1

HEXACOSANE = HEXACOSANE

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

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

		Percent Surrogate Recovery (Acceptance Limits)									
		BB	XACOSA								
Lab Sample ID	Client Sample ID	(60-130)	(60-130)								
22DSL040WL	Lab Control Sample	102	106								
22J5L040WL	Lab Control Sample	105	97								
22J8L040WL	Lab Control Sample	98	102								

Surrogate Legend

BB = BROMOBENZENE
HEXACOSANE = HEXACOSANE

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

Lab Sample ID: MB 380-27725/1-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 27725

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
2,4'-DDE	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
2,4'-DDT	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
2,4-Dinitrotoluene	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
2,6-Dinitrotoluene	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
4,4'-DDD	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
4,4'-DDE	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
4,4'-DDT	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Acenaphthene	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Acenaphthylene	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Acetochlor	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Alachlor	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
alpha-BHC	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
alpha-Chlordane	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Anthracene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 11:24	1
Atrazine	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Benz(a)anthracene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Benzo[a]pyrene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 11:24	1
Benzo[b]fluoranthene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 11:24	1
Benzo[g,h,i]perylene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Benzo[k]fluoranthene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 11:24	1
beta-BHC	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Bromacil	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Butachlor	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Butylbenzylphthalate	ND		0.50		ug/L		12/22/22 06:58	12/27/22 11:24	1
Caffeine	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Chlorobenzilate	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Chloroneb	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Chlorpyrifos	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Chrysene	ND		0.020		ug/L		12/22/22 06:58	12/27/22 11:24	1
delta-BHC	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		12/22/22 06:58	12/27/22 11:24	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		12/22/22 06:58	12/27/22 11:24	1
Diazinon (Qualitative)	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Dibenz(a,h)anthracene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Diclorvos (DDVP)	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Dieldrin	ND		0.20		ug/L		12/22/22 06:58	12/27/22 11:24	1
Diethylphthalate	ND		0.50		ug/L		12/22/22 06:58	12/27/22 11:24	1
Dimethoate	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Dimethylphthalate	ND		0.50		ug/L		12/22/22 06:58	12/27/22 11:24	1
Di-n-butyl phthalate	ND		0.99		ug/L		12/22/22 06:58	12/27/22 11:24	1
Di-n-octyl phthalate	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Endosulfan I (Alpha)	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Endosulfan II (Beta)	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Endosulfan sulfate	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Endrin	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Endrin aldehyde	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1

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

Lab Sample ID: MB 380-27725/1-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 27725

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
EPTC	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Fluoranthene	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Fluorene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
gamma-Chlordane	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Heptachlor	ND		0.040		ug/L		12/22/22 06:58	12/27/22 11:24	1
Heptachlor epoxide (isomer B)	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Hexachlorobenzene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Hexachlorocyclopentadiene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Indeno[1,2,3-cd]pyrene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Isophorone	ND		0.50		ug/L		12/22/22 06:58	12/27/22 11:24	1
Lindane	ND		0.040		ug/L		12/22/22 06:58	12/27/22 11:24	1
Malathion	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Methoxychlor	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Metolachlor	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Metribuzin	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Molinate	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Naphthalene	ND		0.30		ug/L		12/22/22 06:58	12/27/22 11:24	1
Parathion	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		12/22/22 06:58	12/27/22 11:24	1
Phenanthrene	ND		0.040		ug/L		12/22/22 06:58	12/27/22 11:24	1
Propachlor	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Pyrene	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Simazine	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Terbacil	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Terbuthylazine	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1
Thiobencarb	ND		0.20		ug/L		12/22/22 06:58	12/27/22 11:24	1
trans-Nonachlor	ND		0.050		ug/L		12/22/22 06:58	12/27/22 11:24	1
Trifluralin	ND		0.099		ug/L		12/22/22 06:58	12/27/22 11:24	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*12/22/22 06:58*	*12/27/22 11:24*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*100*		*70 - 130*	*12/22/22 06:58*	*12/27/22 11:24*	*1*
Triphenylphosphate	*106*		*70 - 130*	*12/22/22 06:58*	*12/27/22 11:24*	*1*
Perylene-d12	*94*		*70 - 130*	*12/22/22 06:58*	*12/27/22 11:24*	*1*

Lab Sample ID: LCS 380-27725/3-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.98	1.96		ug/L		99	70 - 130
2,4'-DDE	1.98	1.91		ug/L		96	70 - 130
2,4'-DDT	1.98	2.09		ug/L		105	70 - 130
2,4-Dinitrotoluene	1.98	1.80		ug/L		91	70 - 130
2,6-Dinitrotoluene	1.98	1.93		ug/L		98	70 - 130

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

Lab Sample ID: LCS 380-27725/3-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,4'-DDD	1.98	2.18		ug/L		110	70 - 130
4,4'-DDE	1.98	2.06		ug/L		104	70 - 130
4,4'-DDT	1.98	2.17		ug/L		110	70 - 130
Acenaphthene	1.98	1.93		ug/L		98	70 - 130
Acenaphthylene	1.98	1.90		ug/L		96	70 - 130
Acetochlor	1.98	2.09		ug/L		105	70 - 130
Alachlor	1.98	2.00		ug/L		101	70 - 130
alpha-BHC	1.98	1.96		ug/L		99	70 - 130
alpha-Chlordane	1.98	1.87		ug/L		94	70 - 130
Anthracene	1.98	1.88		ug/L		95	70 - 130
Atrazine	1.98	1.98		ug/L		100	70 - 130
Benz(a)anthracene	1.98	2.19		ug/L		111	70 - 130
Benzo[a]pyrene	1.98	2.13		ug/L		107	70 - 130
Benzo[b]fluoranthene	1.98	2.16		ug/L		109	70 - 130
Benzo[g,h,i]perylene	1.98	2.05		ug/L		103	70 - 130
Benzo[k]fluoranthene	1.98	2.10		ug/L		106	70 - 130
beta-BHC	1.98	2.00		ug/L		101	70 - 130
Bromacil	1.98	2.26		ug/L		114	70 - 130
Butachlor	1.98	2.15		ug/L		109	70 - 130
Butylbenzylphthalate	1.98	2.26		ug/L		114	70 - 130
Caffeine	1.98	1.62		ug/L		82	45 - 137
Chlorobenzilate	1.98	2.21		ug/L		111	70 - 130
Chloroneb	1.98	1.89		ug/L		95	70 - 130
Chlorothalonil (Draconil, Bravo)	1.98	1.92		ug/L		97	70 - 130
Chlorpyrifos	1.98	2.02		ug/L		102	70 - 130
Chrysene	1.98	1.91		ug/L		96	70 - 130
delta-BHC	1.98	2.05		ug/L		103	70 - 130
Di(2-ethylhexyl)adipate	1.98	2.24		ug/L		113	70 - 130
Bis(2-ethylhexyl) phthalate	1.98	1.88		ug/L		95	70 - 130
Diazinon (Qualitative)	1.98	1.79		ug/L		90	15 - 132
Dibenz(a,h)anthracene	1.98	2.21		ug/L		112	70 - 130
Diclorvos (DDVP)	1.98	2.19		ug/L		111	70 - 130
Dieldrin	1.98	2.06		ug/L		104	70 - 130
Diethylphthalate	1.98	1.93		ug/L		97	70 - 130
Dimethoate	1.98	1.30		ug/L		65	35 - 100
Dimethylphthalate	1.98	2.02		ug/L		102	70 - 130
Di-n-butyl phthalate	3.96	3.90		ug/L		98	70 - 130
Di-n-octyl phthalate	1.98	1.93		ug/L		98	70 - 130
Endosulfan I (Alpha)	1.98	1.82		ug/L		92	70 - 130
Endosulfan II (Beta)	1.98	2.17		ug/L		110	70 - 130
Endosulfan sulfate	1.98	2.23		ug/L		113	70 - 130
Endrin	1.98	2.21		ug/L		112	70 - 130
Endrin aldehyde	1.98	1.92		ug/L		97	70 - 130
EPTC	1.98	1.96		ug/L		99	70 - 130
Fluoranthene	1.98	2.02		ug/L		102	70 - 130
Fluorene	1.98	1.97		ug/L		99	70 - 130
gamma-Chlordane	1.98	1.94		ug/L		98	70 - 130
Heptachlor	1.98	1.89		ug/L		95	70 - 130
Heptachlor epoxide (isomer B)	1.98	1.97		ug/L		99	70 - 130

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

Lab Sample ID: LCS 380-27725/3-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27725

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexachlorobenzene			1.98	1.85		ug/L		94	70 - 130		
Hexachlorocyclopentadiene			1.98	1.99		ug/L		100	70 - 130		
Indeno[1,2,3-cd]pyrene			1.98	2.20		ug/L		111	70 - 130		
Isophorone			1.98	2.05		ug/L		104	70 - 130		
Lindane			1.98	1.89		ug/L		95	70 - 130		
Malathion			1.98	2.17		ug/L		110	70 - 130		
Methoxychlor			1.98	2.20		ug/L		111	70 - 130		
Metolachlor			1.98	2.04		ug/L		103	70 - 130		
Metribuzin			1.98	2.13		ug/L		107	70 - 130		
Molinate			1.98	1.99		ug/L		100	70 - 130		
Naphthalene			1.98	1.88		ug/L		95	70 - 130		
Parathion			1.98	2.20		ug/L		111	70 - 130		
Pendimethalin (Penoxaline)			1.98	2.00		ug/L		101	70 - 130		
Phenanthrene			1.98	1.91		ug/L		96	70 - 130		
Propachlor			1.98	1.98		ug/L		100	70 - 130		
Pyrene			1.98	2.05		ug/L		103	70 - 130		
Simazine			1.98	2.06		ug/L		104	70 - 130		
Terbacil			1.98	2.17		ug/L		109	70 - 130		
Terbuthylazine			1.98	1.99		ug/L		101	70 - 130		
Thiobencarb			1.98	2.08		ug/L		105	70 - 130		
trans-Nonachlor			1.98	1.93		ug/L		97	70 - 130		
Trifluralin			1.98	1.79		ug/L		90	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Triphenylphosphate	*113*		*70 - 130*
Perylene-d12	*100*		*70 - 130*

Lab Sample ID: LCSD 380-27725/4-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 27725

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD			1.99	1.92		ug/L		97	70 - 130	2	20
2,4'-DDE			1.99	1.92		ug/L		97	70 - 130	0	20
2,4'-DDT			1.99	2.06		ug/L		104	70 - 130	1	20
2,4-Dinitrotoluene			1.99	1.95		ug/L		98	70 - 130	8	20
2,6-Dinitrotoluene			1.99	2.01		ug/L		101	70 - 130	4	20
4,4'-DDD			1.99	2.14		ug/L		108	70 - 130	2	20
4,4'-DDE			1.99	2.00		ug/L		101	70 - 130	3	20
4,4'-DDT			1.99	2.06		ug/L		103	70 - 130	6	20
Acenaphthene			1.99	2.03		ug/L		102	70 - 130	5	20
Acenaphthylene			1.99	1.99		ug/L		100	70 - 130	5	20
Acetochlor			1.99	2.14		ug/L		108	70 - 130	2	20
Alachlor			1.99	2.09		ug/L		105	70 - 130	4	20
alpha-BHC			1.99	2.01		ug/L		101	70 - 130	3	20
alpha-Chlordane			1.99	1.92		ug/L		97	70 - 130	3	20
Anthracene			1.99	1.95		ug/L		98	70 - 130	4	20

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

Lab Sample ID: LCSD 380-27725/4-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 27725

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Atrazine			1.99	1.98		ug/L		100	70 - 130	0	20
Benz(a)anthracene			1.99	2.15		ug/L		108	70 - 130	2	20
Benzo[a]pyrene			1.99	2.26		ug/L		114	70 - 130	6	20
Benzo[b]fluoranthene			1.99	2.26		ug/L		114	70 - 130	4	20
Benzo[g,h,i]perylene			1.99	2.19		ug/L		110	70 - 130	7	20
Benzo[k]fluoranthene			1.99	2.26		ug/L		114	70 - 130	7	20
beta-BHC			1.99	2.01		ug/L		101	70 - 130	0	20
Bromacil			1.99	2.25		ug/L		113	70 - 130	0	20
Butachlor			1.99	2.11		ug/L		106	70 - 130	2	20
Butylbenzylphthalate			1.99	2.27		ug/L		114	70 - 130	0	20
Caffeine			1.99	1.63		ug/L		82	45 - 137	1	20
Chlorobenzilate			1.99	2.21		ug/L		112	70 - 130	0	20
Chloroneb			1.99	1.96		ug/L		98	70 - 130	4	20
Chlorothalonil (Draconil, Bravo)			1.99	1.94		ug/L		98	70 - 130	1	20
Chlorpyrifos			1.99	2.06		ug/L		104	70 - 130	2	20
Chrysene			1.99	2.05		ug/L		103	70 - 130	7	20
delta-BHC			1.99	2.10		ug/L		106	70 - 130	3	20
Di(2-ethylhexyl)adipate			1.99	2.10		ug/L		106	70 - 130	7	20
Bis(2-ethylhexyl) phthalate			1.99	1.84		ug/L		93	70 - 130	2	20
Diazinon (Qualitative)			1.99	1.84		ug/L		92	15 - 132	3	20
Dibenz(a,h)anthracene			1.99	2.23		ug/L		112	70 - 130	1	20
Diclorvos (DDVP)			1.99	2.37		ug/L		119	70 - 130	8	20
Dieldrin			1.99	2.07		ug/L		104	70 - 130	0	20
Diethylphthalate			1.99	2.05		ug/L		103	70 - 130	6	20
Dimethoate			1.99	1.39		ug/L		70	35 - 100	7	20
Dimethylphthalate			1.99	2.08		ug/L		105	70 - 130	3	20
Di-n-butyl phthalate			3.97	4.12		ug/L		104	70 - 130	5	20
Di-n-octyl phthalate			1.99	1.82		ug/L		91	70 - 130	6	20
Endosulfan I (Alpha)			1.99	1.88		ug/L		94	70 - 130	3	20
Endosulfan II (Beta)			1.99	2.21		ug/L		111	70 - 130	2	20
Endosulfan sulfate			1.99	2.23		ug/L		112	70 - 130	0	20
Endrin			1.99	2.18		ug/L		110	70 - 130	2	20
Endrin aldehyde			1.99	1.91		ug/L		96	70 - 130	0	20
EPTC			1.99	2.00		ug/L		101	70 - 130	2	20
Fluoranthene			1.99	2.02		ug/L		102	70 - 130	0	20
Fluorene			1.99	2.01		ug/L		101	70 - 130	2	20
gamma-Chlordane			1.99	1.95		ug/L		98	70 - 130	0	20
Heptachlor			1.99	2.00		ug/L		101	70 - 130	6	20
Heptachlor epoxide (isomer B)			1.99	2.03		ug/L		102	70 - 130	3	20
Hexachlorobenzene			1.99	1.88		ug/L		94	70 - 130	1	20
Hexachlorocyclopentadiene			1.99	2.06		ug/L		104	70 - 130	3	20
Indeno[1,2,3-cd]pyrene			1.99	2.28		ug/L		115	70 - 130	4	20
Isophorone			1.99	2.21		ug/L		111	70 - 130	7	20
Lindane			1.99	1.97		ug/L		99	70 - 130	4	20
Malathion			1.99	2.23		ug/L		112	70 - 130	3	20
Methoxychlor			1.99	2.32		ug/L		117	70 - 130	6	20
Metolachlor			1.99	2.09		ug/L		105	70 - 130	3	20
Metribuzin			1.99	2.15		ug/L		108	70 - 130	1	20
Molinate			1.99	1.99		ug/L		100	70 - 130	0	20

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

Lab Sample ID: LCSD 380-27725/4-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 27725

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Naphthalene			1.99	2.01		ug/L		101	70 - 130	7	20
Parathion			1.99	2.23		ug/L		112	70 - 130	1	20
Pendimethalin (Penoxaline)			1.99	2.08		ug/L		105	70 - 130	4	20
Phenanthrene			1.99	1.97		ug/L		99	70 - 130	3	20
Propachlor			1.99	2.10		ug/L		106	70 - 130	6	20
Pyrene			1.99	2.03		ug/L		102	70 - 130	1	20
Simazine			1.99	2.09		ug/L		105	70 - 130	1	20
Terbacil			1.99	2.16		ug/L		109	70 - 130	0	20
Terbuthylazine			1.99	2.06		ug/L		104	70 - 130	3	20
Thiobencarb			1.99	2.08		ug/L		105	70 - 130	0	20
trans-Nonachlor			1.99	1.87		ug/L		94	70 - 130	3	20
Trifluralin			1.99	1.88		ug/L		95	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*
Perylene-d12	*99*		*70 - 130*

Lab Sample ID: MRL 380-27725/2-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27725

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD			0.0993	0.147		ug/L		148	50 - 150		
2,4'-DDE			0.0993	0.109		ug/L		109	50 - 150		
2,4'-DDT			0.0993	0.112		ug/L		113	50 - 150		
2,4-Dinitrotoluene			0.0993	0.0813	J	ug/L		82	50 - 150		
2,6-Dinitrotoluene			0.0993	0.0885	J	ug/L		89	50 - 150		
4,4'-DDD			0.0993	0.119		ug/L		120	50 - 150		
4,4'-DDE			0.0993	0.103		ug/L		103	50 - 150		
4,4'-DDT			0.0993	0.115		ug/L		116	50 - 150		
Acenaphthene			0.0993	0.0998		ug/L		100	50 - 150		
Acenaphthylene			0.0993	0.0900	J	ug/L		91	50 - 150		
Acetochlor			0.0497	0.0531	J	ug/L		107	50 - 150		
Alachlor			0.0497	0.0590		ug/L		119	50 - 150		
alpha-BHC			0.0993	0.0988	J	ug/L		99	50 - 150		
alpha-Chlordane			0.0248	0.0297	J	ug/L		120	50 - 150		
Anthracene			0.0199	0.0212		ug/L		107	50 - 150		
Atrazine			0.0497	0.0505		ug/L		102	50 - 150		
Benz(a)anthracene			0.0497	0.0526		ug/L		106	50 - 150		
Benzo[a]pyrene			0.0199	0.0182	J	ug/L		91	50 - 150		
Benzo[b]fluoranthene			0.0199	0.0240		ug/L		121	50 - 150		
Benzo[g,h,i]perylene			0.0497	0.0496	J	ug/L		100	50 - 150		
Benzo[k]fluoranthene			0.0199	0.0218		ug/L		110	50 - 150		
beta-BHC			0.0993	0.104		ug/L		105	50 - 150		
Bromacil			0.0993	0.114		ug/L		115	50 - 150		
Butachlor			0.0497	0.0602		ug/L		121	50 - 150		
Butylbenzylphthalate			0.149	0.214	J	ug/L		143	50 - 150		

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

Lab Sample ID: MRL 380-27725/2-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Caffeine	0.0497	0.0446	J	ug/L		90	50 - 150
Chlorobenzilate	0.0993	0.110		ug/L		111	50 - 150
Chloroneb	0.0993	0.103		ug/L		104	50 - 150
Chlorothalonil (Draconil, Bravo)	0.0993	0.201	^3+	ug/L		202	50 - 150
Chlorpyrifos	0.0497	0.0550		ug/L		111	50 - 150
Chrysene	0.0199	0.0204		ug/L		103	50 - 150
delta-BHC	0.0993	0.125		ug/L		126	50 - 150
Di(2-ethylhexyl)adipate	0.298	0.365	J	ug/L		123	50 - 150
Bis(2-ethylhexyl) phthalate	0.596	0.663		ug/L		111	50 - 150
Diazinon (Qualitative)	0.0993	0.0892	J	ug/L		90	15 - 132
Dibenz(a,h)anthracene	0.0497	0.0535		ug/L		108	50 - 150
Diclorvos (DDVP)	0.0497	0.0600		ug/L		121	50 - 150
Dieldrin	0.0993	0.146	J	ug/L		147	50 - 150
Diethylphthalate	0.149	0.138	J	ug/L		93	50 - 150
Dimethoate	0.0993	0.0697	J	ug/L		70	35 - 100
Dimethylphthalate	0.298	0.299	J	ug/L		100	50 - 150
Di-n-butyl phthalate	0.298	0.412	J	ug/L		138	49 - 243
Di-n-octyl phthalate	0.0993	0.0945	J	ug/L		95	50 - 150
Endosulfan I (Alpha)	0.0993	0.108		ug/L		109	50 - 150
Endosulfan II (Beta)	0.0993	0.142		ug/L		143	50 - 150
Endosulfan sulfate	0.0993	0.123		ug/L		124	50 - 150
Endrin	0.0993	0.125		ug/L		126	50 - 150
Endrin aldehyde	0.0993	0.0998		ug/L		101	50 - 150
EPTC	0.0993	0.0969	J	ug/L		98	50 - 150
Fluoranthene	0.0497	0.0550	J	ug/L		111	50 - 150
Fluorene	0.0497	ND		ug/L		99	50 - 150
gamma-Chlordane	0.0248	0.0325	J	ug/L		131	50 - 150
Heptachlor	0.0397	0.0493		ug/L		124	50 - 150
Heptachlor epoxide (isomer B)	0.0497	0.0632		ug/L		127	50 - 150
Hexachlorobenzene	0.0497	0.0431	J	ug/L		87	50 - 150
Hexachlorocyclopentadiene	0.0497	0.0474	J	ug/L		96	50 - 150
Indeno[1,2,3-cd]pyrene	0.0497	0.0564		ug/L		114	50 - 150
Isophorone	0.0993	0.109	J	ug/L		109	50 - 150
Lindane	0.0397	0.0445		ug/L		112	50 - 150
Malathion	0.0993	0.104		ug/L		104	50 - 150
Methoxychlor	0.0993	0.0969	J	ug/L		98	50 - 150
Metolachlor	0.0497	0.0573		ug/L		115	50 - 150
Metribuzin	0.0497	0.0554		ug/L		112	50 - 150
Molinate	0.0993	0.102		ug/L		102	50 - 150
Naphthalene	0.0993	0.102	J	ug/L		102	50 - 150
Parathion	0.0993	0.0939	J	ug/L		95	50 - 150
Pendimethalin (Penoxaline)	0.0993	0.0815	J	ug/L		82	50 - 150
Phenanthrene	0.0199	0.0226	J	ug/L		114	50 - 150
Propachlor	0.0497	0.0421	J	ug/L		85	50 - 150
Pyrene	0.0497	0.0550		ug/L		111	50 - 150
Simazine	0.0497	0.0570		ug/L		115	50 - 150
Terbacil	0.0993	0.126		ug/L		126	50 - 150
Terbuthylazine	0.0993	0.0952	J	ug/L		96	50 - 150
Thiobencarb	0.0993	0.110	J	ug/L		110	50 - 150

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

Lab Sample ID: MRL 380-27725/2-A
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27725

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
trans-Nonachlor			0.0248	0.0309	J	ug/L		124	50 - 150		
Trifluralin			0.0993	0.0692	J	ug/L		70	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
2-Nitro-m-xylene	*100*		*70 - 130*
Triphenylphosphate	*116*		*70 - 130*
Perylene-d12	*98*		*70 - 130*

Lab Sample ID: 380-32064-C-1-A MS
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
2,4'-DDD	ND		2.03	1.94		ug/L		96	70 - 130		
2,4'-DDE	ND		2.03	1.94		ug/L		96	70 - 130		
2,4'-DDT	ND		2.03	2.10		ug/L		104	70 - 130		
2,4-Dinitrotoluene	ND		2.03	2.10		ug/L		104	70 - 130		
2,6-Dinitrotoluene	ND		2.03	2.10		ug/L		104	70 - 130		
4,4'-DDD	ND		2.03	2.16		ug/L		107	70 - 130		
4,4'-DDE	ND		2.03	2.02		ug/L		100	70 - 130		
4,4'-DDT	ND		2.03	2.08		ug/L		103	70 - 130		
Acenaphthene	ND		2.03	2.07		ug/L		102	70 - 130		
Acenaphthylene	ND		2.03	2.10		ug/L		103	70 - 130		
Acetochlor	ND		2.03	2.14		ug/L		106	70 - 130		
Alachlor	ND		2.03	2.08		ug/L		103	70 - 130		
alpha-BHC	ND		2.03	2.12		ug/L		105	70 - 130		
alpha-Chlordane	ND		2.03	1.88		ug/L		93	70 - 130		
Anthracene	ND		2.03	1.54		ug/L		76	70 - 130		
Atrazine	ND		2.03	2.09		ug/L		103	70 - 130		
Benz(a)anthracene	ND		2.03	2.05		ug/L		101	70 - 130		
Benzo[a]pyrene	ND		2.03	1.99		ug/L		98	70 - 130		
Benzo[b]fluoranthene	ND		2.03	2.27		ug/L		112	70 - 130		
Benzo[g,h,i]perylene	ND		2.03	2.19		ug/L		108	70 - 130		
Benzo[k]fluoranthene	ND		2.03	2.20		ug/L		109	70 - 130		
beta-BHC	ND		2.03	2.14		ug/L		106	70 - 130		
Bromacil	ND		2.03	2.32		ug/L		115	70 - 130		
Butachlor	ND		2.03	2.26		ug/L		112	70 - 130		
Butylbenzylphthalate	ND		2.03	2.26		ug/L		111	70 - 130		
Caffeine	ND		2.03	1.64		ug/L		81	46 - 144		
Chlorobenzilate	ND		2.03	2.25		ug/L		111	70 - 130		
Chloroneb	ND		2.03	2.00		ug/L		99	70 - 130		
Chlorothalonil (Draconil, Bravo)	ND	^3+	2.03	1.92		ug/L		95	70 - 130		
Chlorpyrifos	ND		2.03	2.10		ug/L		104	70 - 130		
Chrysene	ND		2.03	2.05		ug/L		101	70 - 130		
delta-BHC	ND		2.03	2.06		ug/L		102	70 - 130		
Di(2-ethylhexyl)adipate	ND		2.03	2.21		ug/L		109	70 - 130		
Bis(2-ethylhexyl) phthalate	ND		2.03	2.17		ug/L		107	70 - 130		
Diazinon (Qualitative)	ND		2.03	1.95		ug/L		96	15 - 132		

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

Lab Sample ID: 380-32064-C-1-A MS
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dibenz(a,h)anthracene	ND		2.03	2.40		ug/L		118	70 - 130
Diclorvos (DDVP)	ND		2.03	2.45		ug/L		121	70 - 130
Dieldrin	ND		2.03	2.22		ug/L		110	70 - 130
Diethylphthalate	ND		2.03	2.14		ug/L		105	70 - 130
Dimethoate	ND		2.03	1.45		ug/L		72	34 - 111
Dimethylphthalate	ND		2.03	2.14		ug/L		106	70 - 130
Di-n-butyl phthalate	ND		4.05	4.13		ug/L		102	70 - 130
Di-n-octyl phthalate	ND		2.03	2.21		ug/L		109	70 - 130
Endosulfan I (Alpha)	ND		2.03	1.85		ug/L		91	70 - 130
Endosulfan II (Beta)	ND		2.03	2.18		ug/L		108	70 - 130
Endosulfan sulfate	ND		2.03	2.28		ug/L		113	70 - 130
Endrin	ND		2.03	2.21		ug/L		109	70 - 130
Endrin aldehyde	ND	F1	2.03	1.31	F1	ug/L		65	70 - 130
EPTC	ND		2.03	2.29		ug/L		113	70 - 130
Fluoranthene	ND		2.03	2.08		ug/L		103	70 - 130
Fluorene	ND		2.03	2.14		ug/L		106	70 - 130
gamma-Chlordane	ND		2.03	1.90		ug/L		94	70 - 130
Heptachlor	ND		2.03	1.99		ug/L		98	70 - 130
Heptachlor epoxide (isomer B)	ND		2.03	2.03		ug/L		100	70 - 130
Hexachlorobenzene	ND		2.03	1.96		ug/L		97	70 - 130
Hexachlorocyclopentadiene	ND		2.03	2.10		ug/L		104	70 - 130
Indeno[1,2,3-cd]pyrene	ND		2.03	2.34		ug/L		116	70 - 130
Isophorone	ND		2.03	2.25		ug/L		111	70 - 130
Lindane	ND		2.03	2.02		ug/L		100	70 - 130
Malathion	ND		2.03	2.33		ug/L		115	70 - 130
Methoxychlor	ND		2.03	2.43		ug/L		120	70 - 130
Metolachlor	ND		2.03	2.16		ug/L		106	70 - 130
Metribuzin	ND		2.03	2.35		ug/L		116	70 - 130
Molinate	ND		2.03	2.28		ug/L		112	70 - 130
Naphthalene	ND		2.03	2.05		ug/L		101	70 - 130
Parathion	ND		2.03	2.37		ug/L		117	70 - 130
Pendimethalin (Penoxaline)	ND		2.03	2.15		ug/L		106	70 - 130
Phenanthrene	ND		2.03	2.04		ug/L		101	70 - 130
Propachlor	ND		2.03	2.15		ug/L		106	70 - 130
Pyrene	ND		2.03	2.09		ug/L		103	70 - 130
Simazine	ND		2.03	2.20		ug/L		109	70 - 130
Terbacil	ND		2.03	2.22		ug/L		109	70 - 130
Terbuthylazine	ND		2.03	2.15		ug/L		106	70 - 130
Thiobencarb	ND		2.03	2.24		ug/L		110	70 - 130
trans-Nonachlor	ND		2.03	1.90		ug/L		94	70 - 130
Trifluralin	ND		2.03	1.96		ug/L		97	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*101*		*70 - 130*
Triphenylphosphate	*106*		*70 - 130*
Perylene-d12	*101*		*70 - 130*

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

Lab Sample ID: 380-32064-I-1-A MSD
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4'-DDD	ND		2.03	1.98		ug/L		98	70 - 130	2	20
2,4'-DDE	ND		2.03	1.99		ug/L		98	70 - 130	3	20
2,4'-DDT	ND		2.03	2.12		ug/L		104	70 - 130	1	20
2,4-Dinitrotoluene	ND		2.03	2.08		ug/L		102	70 - 130	1	20
2,6-Dinitrotoluene	ND		2.03	2.14		ug/L		105	70 - 130	2	20
4,4'-DDD	ND		2.03	2.22		ug/L		110	70 - 130	3	20
4,4'-DDE	ND		2.03	2.11		ug/L		104	70 - 130	5	20
4,4'-DDT	ND		2.03	2.18		ug/L		108	70 - 130	5	20
Acenaphthene	ND		2.03	2.06		ug/L		102	70 - 130	0	20
Acenaphthylene	ND		2.03	2.10		ug/L		104	70 - 130	0	20
Acetochlor	ND		2.03	2.10		ug/L		104	70 - 130	2	20
Alachlor	ND		2.03	2.11		ug/L		104	70 - 130	1	20
alpha-BHC	ND		2.03	2.11		ug/L		104	70 - 130	1	20
alpha-Chlordane	ND		2.03	1.94		ug/L		96	70 - 130	3	20
Anthracene	ND		2.03	1.55		ug/L		76	70 - 130	1	20
Atrazine	ND		2.03	2.03		ug/L		100	70 - 130	3	20
Benz(a)anthracene	ND		2.03	2.13		ug/L		105	70 - 130	4	20
Benzo[a]pyrene	ND		2.03	2.07		ug/L		102	70 - 130	4	20
Benzo[b]fluoranthene	ND		2.03	2.28		ug/L		113	70 - 130	0	20
Benzo[g,h,i]perylene	ND		2.03	2.25		ug/L		111	70 - 130	3	20
Benzo[k]fluoranthene	ND		2.03	2.29		ug/L		113	70 - 130	4	20
beta-BHC	ND		2.03	2.03		ug/L		100	70 - 130	5	20
Bromacil	ND		2.03	2.31		ug/L		114	70 - 130	0	20
Butachlor	ND		2.03	2.21		ug/L		109	70 - 130	2	20
Butylbenzylphthalate	ND		2.03	2.33		ug/L		115	70 - 130	3	20
Caffeine	ND		2.03	1.67		ug/L		83	46 - 144	2	20
Chlorobenzilate	ND		2.03	2.27		ug/L		112	70 - 130	1	20
Chloroneb	ND		2.03	2.04		ug/L		100	70 - 130	2	20
Chlorothalonil (Draconil, Bravo)	ND	^3+	2.03	1.97		ug/L		97	70 - 130	2	20
Chlorpyrifos	ND		2.03	2.06		ug/L		102	70 - 130	2	20
Chrysene	ND		2.03	2.05		ug/L		101	70 - 130	0	20
delta-BHC	ND		2.03	2.12		ug/L		105	70 - 130	3	20
Di(2-ethylhexyl)adipate	ND		2.03	2.33		ug/L		115	70 - 130	5	20
Bis(2-ethylhexyl) phthalate	ND		2.03	2.10		ug/L		104	70 - 130	3	20
Diazinon (Qualitative)	ND		2.03	2.06		ug/L		101	15 - 132	5	20
Dibenz(a,h)anthracene	ND		2.03	2.44		ug/L		120	70 - 130	2	20
Diclorvos (DDVP)	ND		2.03	2.40		ug/L		118	70 - 130	2	20
Dieldrin	ND		2.03	2.23		ug/L		110	70 - 130	0	20
Diethylphthalate	ND		2.03	2.10		ug/L		103	70 - 130	2	20
Dimethoate	ND		2.03	1.53		ug/L		76	34 - 111	5	20
Dimethylphthalate	ND		2.03	2.15		ug/L		106	70 - 130	0	20
Di-n-butyl phthalate	ND		4.05	4.15		ug/L		102	70 - 130	1	20
Di-n-octyl phthalate	ND		2.03	2.23		ug/L		110	70 - 130	1	20
Endosulfan I (Alpha)	ND		2.03	1.92		ug/L		95	70 - 130	4	20
Endosulfan II (Beta)	ND		2.03	2.22		ug/L		110	70 - 130	2	20
Endosulfan sulfate	ND		2.03	2.36		ug/L		117	70 - 130	4	20
Endrin	ND		2.03	2.25		ug/L		111	70 - 130	2	20
Endrin aldehyde	ND	F1	2.03	1.17	F1	ug/L		58	70 - 130	11	20

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

Lab Sample ID: 380-32064-I-1-A MSD
Matrix: Water
Analysis Batch: 28001

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 27725

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
EPTC	ND		2.03	2.29		ug/L		113	70 - 130	0	20
Fluoranthene	ND		2.03	2.08		ug/L		102	70 - 130	0	20
Fluorene	ND		2.03	2.10		ug/L		104	70 - 130	2	20
gamma-Chlordane	ND		2.03	1.98		ug/L		98	70 - 130	4	20
Heptachlor	ND		2.03	2.01		ug/L		99	70 - 130	1	20
Heptachlor epoxide (isomer B)	ND		2.03	2.06		ug/L		102	70 - 130	1	20
Hexachlorobenzene	ND		2.03	2.00		ug/L		98	70 - 130	2	20
Hexachlorocyclopentadiene	ND		2.03	2.08		ug/L		103	70 - 130	1	20
Indeno[1,2,3-cd]pyrene	ND		2.03	2.42		ug/L		119	70 - 130	3	20
Isophorone	ND		2.03	2.21		ug/L		109	70 - 130	2	20
Lindane	ND		2.03	2.01		ug/L		99	70 - 130	0	20
Malathion	ND		2.03	2.24		ug/L		111	70 - 130	4	20
Methoxychlor	ND		2.03	2.34		ug/L		115	70 - 130	4	20
Metolachlor	ND		2.03	2.12		ug/L		105	70 - 130	2	20
Metribuzin	ND		2.03	2.42		ug/L		119	70 - 130	3	20
Molinate	ND		2.03	2.34		ug/L		116	70 - 130	3	20
Naphthalene	ND		2.03	1.98		ug/L		98	70 - 130	3	20
Parathion	ND		2.03	2.34		ug/L		116	70 - 130	1	20
Pendimethalin (Penoxaline)	ND		2.03	2.10		ug/L		104	70 - 130	2	20
Phenanthrene	ND		2.03	2.01		ug/L		99	70 - 130	2	20
Propachlor	ND		2.03	2.19		ug/L		108	70 - 130	2	20
Pyrene	ND		2.03	2.07		ug/L		102	70 - 130	1	20
Simazine	ND		2.03	2.21		ug/L		109	70 - 130	0	20
Terbacil	ND		2.03	2.19		ug/L		108	70 - 130	1	20
Terbuthylazine	ND		2.03	2.11		ug/L		104	70 - 130	2	20
Thiobencarb	ND		2.03	2.22		ug/L		109	70 - 130	1	20
trans-Nonachlor	ND		2.03	1.93		ug/L		95	70 - 130	1	20
Trifluralin	ND		2.03	2.01		ug/L		99	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Triphenylphosphate	*108*		*70 - 130*
Perylene-d12	*102*		*70 - 130*

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

Lab Sample ID: 102968-B1
Matrix: BlankMatrix
Analysis Batch: O-40074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40074_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Acenaphthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Acenaphthylene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Anthracene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1

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

Lab Sample ID: 102968-B1
Matrix: BlankMatrix
Analysis Batch: O-40074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40074_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benz[a]anthracene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Biphenyl	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Chrysene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Dibenzothiophene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		12/26/22 00:00	01/08/23 02:25	1
Fluoranthene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Fluorene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Naphthalene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Perylene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Phenanthrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1
Pyrene	ND		0.005	0.001	µg/L		12/26/22 00:00	01/08/23 02:25	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*92*		*27 - 133*	*12/26/22 00:00*	*01/08/23 02:25*	*1*
(d10-Phenanthrene)	*94*		*43 - 129*	*12/26/22 00:00*	*01/08/23 02:25*	*1*
(d12-Chrysene)	*99*		*52 - 144*	*12/26/22 00:00*	*01/08/23 02:25*	*1*
(d12-Perylene)	*103*		*36 - 161*	*12/26/22 00:00*	*01/08/23 02:25*	*1*
(d8-Naphthalene)	*87*		*25 - 125*	*12/26/22 00:00*	*01/08/23 02:25*	*1*

Lab Sample ID: 102968-BS1
Matrix: BlankMatrix
Analysis Batch: O-40074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40074_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.477		µg/L		95	31 - 128
1-Methylphenanthrene	0.5	0.448		µg/L		90	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.498		µg/L		100	55 - 122
2,6-Dimethylnaphthalene	0.5	0.493		µg/L		99	48 - 120
2-Methylnaphthalene	1.5	1.44		µg/L		96	47 - 130
Acenaphthene	1.5	1.49		µg/L		99	53 - 131
Acenaphthylene	1.5	1.52		µg/L		101	43 - 140
Anthracene	1.5	1.52		µg/L		101	58 - 135
Benz[a]anthracene	1.5	1.56		µg/L		104	55 - 145
Benzo[a]pyrene	1.5	1.54		µg/L		103	51 - 143
Benzo[b]fluoranthene	1.5	1.63		µg/L		109	46 - 165
Benzo[e]pyrene	0.5	0.502		µg/L		100	42 - 152
Benzo[g,h,i]perylene	1.5	1.59		µg/L		106	63 - 133
Benzo[k]fluoranthene	1.5	1.64		µg/L		109	56 - 145
Biphenyl	0.5	0.523		µg/L		105	56 - 119
Chrysene	1.5	1.55		µg/L		103	56 - 141

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

Lab Sample ID: 102968-BS1
Matrix: BlankMatrix
Analysis Batch: O-40074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40074_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Dibenz[a,h]anthracene			1.5	1.55		µg/L		103	55 - 150		
Dibenzo[a,l]pyrene			0.5	0.539		µg/L		108	50 - 150		
Dibenzothiophene			0.5	0.459		µg/L		92	46 - 126		
Disalicylidenepropanediamine			50	42.9		µg/L		86	50 - 150		
Fluoranthene			1.5	1.68		µg/L		112	60 - 146		
Fluorene			1.5	1.58		µg/L		105	58 - 131		
Indeno[1,2,3-cd]pyrene			1.5	1.61		µg/L		107	50 - 151		
Naphthalene			1.5	1.38		µg/L		92	41 - 126		
Perylene			0.5	0.478		µg/L		96	48 - 141		
Phenanthrene			1.5	1.57		µg/L		105	67 - 127		
Pyrene			1.5	1.62		µg/L		108	54 - 156		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*93*		*27 - 133*
(d10-Phenanthrene)	*96*		*43 - 129*
(d12-Chrysene)	*97*		*52 - 144*
(d12-Perylene)	*99*		*36 - 161*
(d8-Naphthalene)	*84*		*25 - 125*

Lab Sample ID: 102968-BS2
Matrix: BlankMatrix
Analysis Batch: O-40074

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40074_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			0.5	0.49		µg/L		98	31 - 128	3	30
1-Methylphenanthrene			0.5	0.452		µg/L		90	66 - 127	0	30
2,3,5-Trimethylnaphthalene			0.5	0.516		µg/L		103	55 - 122	3	30
2,6-Dimethylnaphthalene			0.5	0.505		µg/L		101	48 - 120	2	30
2-Methylnaphthalene			1.5	1.48		µg/L		99	47 - 130	3	30
Acenaphthene			1.5	1.54		µg/L		103	53 - 131	4	30
Acenaphthylene			1.5	1.57		µg/L		105	43 - 140	4	30
Anthracene			1.5	1.56		µg/L		104	58 - 135	2	30
Benz[a]anthracene			1.5	1.58		µg/L		105	55 - 145	1	30
Benzo[a]pyrene			1.5	1.66		µg/L		111	51 - 143	7	30
Benzo[b]fluoranthene			1.5	1.66		µg/L		111	46 - 165	2	30
Benzo[e]pyrene			0.5	0.504		µg/L		101	42 - 152	1	30
Benzo[g,h,i]perylene			1.5	1.57		µg/L		105	63 - 133	1	30
Benzo[k]fluoranthene			1.5	1.67		µg/L		111	56 - 145	2	30
Biphenyl			0.5	0.54		µg/L		108	56 - 119	3	30
Chrysene			1.5	1.57		µg/L		105	56 - 141	2	30
Dibenz[a,h]anthracene			1.5	1.5		µg/L		100	55 - 150	3	30
Dibenzo[a,l]pyrene			0.5	0.52		µg/L		104	50 - 150	4	30
Dibenzothiophene			0.5	0.469		µg/L		94	46 - 126	2	30
Disalicylidenepropanediamine			50	45.8		µg/L		92	50 - 150	6	30
Fluoranthene			1.5	1.72		µg/L		115	60 - 146	3	30
Fluorene			1.5	1.64		µg/L		109	58 - 131	4	30
Indeno[1,2,3-cd]pyrene			1.5	1.67		µg/L		111	50 - 151	4	30
Naphthalene			1.5	1.42		µg/L		95	41 - 126	3	30

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

Lab Sample ID: 102968-BS2
Matrix: BlankMatrix
Analysis Batch: O-40074

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40074_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perylene			0.5	0.506		µg/L		101	48 - 141	5	30
Phenanthrene			1.5	1.6		µg/L		107	67 - 127	2	30
Pyrene			1.5	1.65		µg/L		110	54 - 156	2	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*92*		*27 - 133*
(d10-Phenanthrene)	*95*		*43 - 129*
(d12-Chrysene)	*95*		*52 - 144*
(d12-Perylene)	*94*		*36 - 161*
(d8-Naphthalene)	*84*		*25 - 125*

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

Lab Sample ID: 22VG39L08B
Matrix: WATER
Analysis Batch: 22VG39L08

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			12/22/22 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*12/22/22 11:58*	*1*

Lab Sample ID: 22VG39L08L
Matrix: WATER
Analysis Batch: 22VG39L08

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
GASOLINE			0.500	0.471		mg/L		94	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*110*		*70 - 130*

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

Lab Sample ID: 22DSL040WB
Matrix: WATER
Analysis Batch: 22DSL040W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			01/05/23 20:12	1
JP5	ND	U	0.050		mg/L			01/05/23 20:12	1
JP8	ND	U	0.050		mg/L			01/05/23 20:12	1
MOTOR OIL	ND	U	0.050		mg/L			01/05/23 20:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE					*01/05/23 20:12*	*1*
HEXACOSANE					*01/05/23 20:12*	*1*

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

Lab Sample ID: 22DSL040WL
Matrix: WATER
Analysis Batch: 22DSL040W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.50	2.83		mg/L		113	50 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOBENZENE	*102*		*60 - 130*
HEXACOSANE	*106*		*60 - 130*

Lab Sample ID: 22J5L040WL
Matrix: WATER
Analysis Batch: 22DSL040W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP5			2.50	2.43		mg/L		97	30 - 160		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOBENZENE	*105*		*60 - 130*
HEXACOSANE	*97*		*60 - 130*

Lab Sample ID: 22J8L040WL
Matrix: WATER
Analysis Batch: 22DSL040W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
JP8			2.50	2.90		mg/L		116	30 - 160		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOBENZENE	*98*		*60 - 130*
HEXACOSANE	*102*		*60 - 130*

GC/MS Semi VOA

Prep Batch: 27725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	
MB 380-27725/1-A	Method Blank	Total/NA	Water	525.2	
LCS 380-27725/3-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 380-27725/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MRL 380-27725/2-A	Lab Control Sample	Total/NA	Water	525.2	
380-32064-C-1-A MS	Matrix Spike	Total/NA	Water	525.2	
380-32064-I-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	525.2	

Analysis Batch: 28001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-1	MOANALUA WELLS	Total/NA	Drinking Water	525.2	27725
MB 380-27725/1-A	Method Blank	Total/NA	Water	525.2	27725
LCS 380-27725/3-A	Lab Control Sample	Total/NA	Water	525.2	27725
LCSD 380-27725/4-A	Lab Control Sample Dup	Total/NA	Water	525.2	27725
MRL 380-27725/2-A	Lab Control Sample	Total/NA	Water	525.2	27725
380-32064-C-1-A MS	Matrix Spike	Total/NA	Water	525.2	27725
380-32064-I-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	525.2	27725

Subcontract

Analysis Batch: O-40074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40074_P
102968-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40074_P
102968-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40074_P
102968-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40074_P

Analysis Batch: 22DSL040W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/JP8	
22DSL040WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22DSL040WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22J5L040WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	
22J8L040WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/JP8	

Analysis Batch: 22VG39L08

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	

Subcontract (Continued)

Analysis Batch: 22VG39L08 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-2	TB:MOANALUA WELLS	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
22VG39L08B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
22VG39L08L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40074_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-32110-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
102968-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
102968-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
102968-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-32110-1

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-32110-1

Date Collected: 12/19/22 11:08

Matrix: Drinking Water

Date Received: 12/21/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			27725	OTM3	EA MON	12/22/22 06:58
Total/NA	Analysis	525.2		1	28001	Q8LA	EA MON	12/27/22 15:46
Total/NA	Prep	EPA_625		1	O-40074_P			12/26/22 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40074	YC		01/08/23 12:51
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39L08	SCerva		12/23/22 01:06
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	22DSL040W	SDees		01/05/23 23:33

Client Sample ID: TB:MOANALUA WELLS

Lab Sample ID: 380-32110-2

Date Collected: 12/19/22 11:08

Matrix: Drinking Water

Date Received: 12/21/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	22VG39L08	SCerva		12/23/22 01:42

Laboratory References:

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

EA MON = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Accreditation/Certification Summary

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

Job ID: 380-32110-1

Laboratory: Eurofins Eaton Analytical Pomona

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	2,4'-DDD
525.2	525.2	Drinking Water	2,4'-DDE
525.2	525.2	Drinking Water	2,4'-DDT
525.2	525.2	Drinking Water	2,4-Dinitrotoluene
525.2	525.2	Drinking Water	2,6-Dinitrotoluene
525.2	525.2	Drinking Water	4,4'-DDD
525.2	525.2	Drinking Water	4,4'-DDE
525.2	525.2	Drinking Water	4,4'-DDT
525.2	525.2	Drinking Water	Acenaphthene
525.2	525.2	Drinking Water	Acenaphthylene
525.2	525.2	Drinking Water	Acetochlor
525.2	525.2	Drinking Water	alpha-BHC
525.2	525.2	Drinking Water	alpha-Chlordane
525.2	525.2	Drinking Water	Anthracene
525.2	525.2	Drinking Water	Benz(a)anthracene
525.2	525.2	Drinking Water	Benzo[b]fluoranthene
525.2	525.2	Drinking Water	Benzo[g,h,i]perylene
525.2	525.2	Drinking Water	Benzo[k]fluoranthene
525.2	525.2	Drinking Water	beta-BHC
525.2	525.2	Drinking Water	Bromacil
525.2	525.2	Drinking Water	Butylbenzylphthalate
525.2	525.2	Drinking Water	Caffeine
525.2	525.2	Drinking Water	Chlorobenzilate
525.2	525.2	Drinking Water	Chloroneb
525.2	525.2	Drinking Water	Chlorothalonil (Draconil, Bravo)
525.2	525.2	Drinking Water	Chlorpyrifos
525.2	525.2	Drinking Water	Chrysene
525.2	525.2	Drinking Water	delta-BHC
525.2	525.2	Drinking Water	Diazinon (Qualitative)
525.2	525.2	Drinking Water	Dibenz(a,h)anthracene
525.2	525.2	Drinking Water	Diclorvos (DDVP)
525.2	525.2	Drinking Water	Diethylphthalate
525.2	525.2	Drinking Water	Dimethoate
525.2	525.2	Drinking Water	Dimethylphthalate
525.2	525.2	Drinking Water	Di-n-butyl phthalate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endosulfan I (Alpha)
525.2	525.2	Drinking Water	Endosulfan II (Beta)
525.2	525.2	Drinking Water	Endosulfan sulfate
525.2	525.2	Drinking Water	Endrin aldehyde
525.2	525.2	Drinking Water	EPTC
525.2	525.2	Drinking Water	Fluoranthene
525.2	525.2	Drinking Water	Fluorene
525.2	525.2	Drinking Water	gamma-Chlordane
525.2	525.2	Drinking Water	Indeno[1,2,3-cd]pyrene

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

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

Authority	Program	Identification Number	Expiration Date

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

Analysis Method	Prep Method	Matrix	Analyte
525.2	525.2	Drinking Water	Isophorone
525.2	525.2	Drinking Water	Malathion
525.2	525.2	Drinking Water	Molinate
525.2	525.2	Drinking Water	Naphthalene
525.2	525.2	Drinking Water	Parathion
525.2	525.2	Drinking Water	Pendimethalin (Penoxaline)
525.2	525.2	Drinking Water	Phenanthrene
525.2	525.2	Drinking Water	Pyrene
525.2	525.2	Drinking Water	Terbacil
525.2	525.2	Drinking Water	Terbuthylazine
525.2	525.2	Drinking Water	Thiobencarb
525.2	525.2	Drinking Water	Total Permethrin (mixed isomers)
525.2	525.2	Drinking Water	trans-Nonachlor
525.2	525.2	Drinking Water	Trifluralin

Method Summary

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

Job ID: 380-32110-1

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 Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

Sample Summary

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

Job ID: 380-32110-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-32110-1	MOANALUA WELLS	Drinking Water	12/19/22 11:08	12/21/22 10:00	HI0000331
380-32110-2	TB:MOANALUA WELLS	Drinking Water	12/19/22 11:08	12/21/22 10:00	

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

Date: 01-20-2023
EMAX Batch No.: 22L295

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-32110

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

Sample ID	Control #	Col Date	Matrix	Analysis
380-32110-1	L295-01	12/19/22	WATER	TPH GASOLINE
				TPH
380-32110-2	L295-02	12/19/22	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

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

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

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

Chain of Custody Record

eurofins | Environment Testing

22L295

3/10/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-31670.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: EMAX Laboratories Inc		Accreditations Required (See note): State - Hawaii		Job #: 380-32110-1
Address: 3051 Fujita Street, ,	Due Date Requested: 1/9/2023			
City: Torrance	TAT Requested (days):			
State, Zip: CA, 90505	PO #:			
Phone:	WO #:			
Email:	Project #: 38001111			
Project Name: RED-HILL	SSOW#:			
Site: Honolulu BWS Sites				

Analysis Requested

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

	Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO/JP5/JP8)/ 8015 LL DRO/MRO/JP5/JP8	Total Number of containers	Special Instructions/Note:
				Preservation Code:							
1	MOANALUA WELLS (380-32110-1)	12/19/22	11:08 Hawaiian		Water			X	X	6	See Attached Instructions
2	TB:MOANALUA WELLS (380-32110-2)	12/19/22	11:08 Hawaiian		Water			X		2	See Attached Instructions

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

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

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: G.REITNER	Date/Time: 12/22/2022 09:48	Company EEA	Received by:	Date/Time: 12-22-22 1211	Company	
Relinquished by:	Date/Time: 12/22/22 14:45	Company	Received by:	Date/Time: 12/22/22 1445	Company EMAX	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

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

Ver: 06/08/2021

SAMPLE RECEIPT FORM 1

EMAX LABORATORIES, INC.

Type of Delivery	Airbill / Tracking Number	ECN 22L295
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient JHowin Zamora
☐ EMAX Courier ☑ Client Delivery		Date 12/22/22 Time 1445

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	correction	☑ Cooler	☐ Box	☐ Other	
Condition	factor	☐ Custody Seal	☐ Intact	☐ Damaged	
Packaging	-0.2	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient ☐ _____
Temperatures (Cool, ≤6 °C but not frozen)		☑ Cooler 1 4.1/3.9 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C ☐ Cooler 5 _____ °C
		☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C ☐ Cooler 10 _____ °C
Thermometer:		*A - S/N* _____	*(B) S/N* 210760237	*C - S/N* _____	*D - S/N* 210760272

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2	7,8	D22	(1) 12/19/22	R1
			(2) 12/13/22	

12/20/22

12/28/22 MS

☐ 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

☐ Continue to next page.

LEGEND:

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

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

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

REVIEWS:

Sample Labeling JHowin Zamora Date 12/22/22 12/22/22

SRF _____ Date 12/20/22

PM _____ Date 12/28/22

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-32110

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

SDG#: 22L295

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32110

SDG : 22L295

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

A total of two(2) water samples were received on 12/22/22 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.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VG39L08B - 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. VG39L08L/VG39L08C 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 L294-01M/L294-01S. 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 : 380-32110

SDG NO. : 22L295
Instrument ID : GCT039

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VG39L08B	1	NA	12/22/2211:58	12/22/2211:58	EL22005A	EL22004A	22VG39L08	Method Blank
LCS1W	VG39L08L	1	NA	12/22/2212:34	12/22/2212:34	EL22006A	EL22004A	22VG39L08	Lab Control Sample (LCS)
LCD1W	VG39L08C	1	NA	12/22/2213:09	12/22/2213:09	EL22007A	EL22004A	22VG39L08	LCS Duplicate
380-32110-1	L295-01	1	NA	12/23/2201:06	12/23/2201:06	EL22027A	EL22026A	22VG39L08	Field Sample
380-32110-2	L295-02	1	NA	12/23/2201:42	12/23/2201:42	EL22028A	EL22026A	22VG39L08	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/19/22 11:08
Project : 380-32110	Date Received: 12/22/22
Batch No. : 22L295	Date Extracted: 12/23/22 01:06
Sample ID : 380-32110-1	Date Analyzed: 12/23/22 01:06
Lab Samp ID: L295-01	Dilution Factor: 1
Lab File ID: EL22027A	Matrix: WATER
Ext Btch ID: 22VG39L08	% Moisture: NA
Calib. Ref.: EL22026A	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	0.0320	0.0400	80	60-140

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

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

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/19/22 11:08
Project : 380-32110	Date Received: 12/22/22
Batch No. : 22L295	Date Extracted: 12/23/22 01:42
Sample ID : 380-32110-2	Date Analyzed: 12/23/22 01:42
Lab Samp ID: L295-02	Dilution Factor: 1
Lab File ID: EL22028A	Matrix: WATER
Ext Btch ID: 22VG39L08	% Moisture: NA
Calib. Ref.: EL22026A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
GASOLINE	0.019J	0.020	0.010

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0316	0.0400	79	60-140

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

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

QC SUMMARIES

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/22/22 11:58
Project : 380-32110	Date Received: 12/22/22
Batch No. : 22L295	Date Extracted: 12/22/22 11:58
Sample ID : MBLK1W	Date Analyzed: 12/22/22 11:58
Lab Samp ID: VG39L08B	Dilution Factor: 1
Lab File ID: EL22005A	Matrix: WATER
Ext Btch ID: 22VG39L08	% Moisture: NA
Calib. Ref.: EL22004A	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	0.0318	0.0400	80	60-140

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

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32110
BATCH NO. : 22L295
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39L08B	VG39L08L	VG39L08C
LAB FILE ID	: EL22005A	EL22006A	EL22007A
DATE PREPARED	: 12/22/22 11:58	12/22/22 12:34	12/22/22 13:09
DATE ANALYZED	: 12/22/22 11:58	12/22/22 12:34	12/22/22 13:09
PREP BATCH	: 22VG39L08	22VG39L08	22VG39L08
CALIBRATION REF	: EL22004A	EL22004A	EL22004A

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	0.471	94	0.500	0.474	95	1	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0440	110	0.0400	0.0434	109	70-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32096
BATCH NO. : 22L294
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-32096-1	380-32096-1MS	380-32096-1MSD
LAB SAMPLE ID	: L294-01	L294-01M	L294-01S
LAB FILE ID	: EL22017A	EL22018A	EL22019A
DATE PREPARED	: 12/22/22 19:09	12/22/22 19:45	12/22/22 20:21
DATE ANALYZED	: 12/22/22 19:09	12/22/22 19:45	12/22/22 20:21
PREP BATCH	: 22VG39L08	22VG39L08	22VG39L08
CALIBRATION REF:	EL22015A	EL22015A	EL22015A

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	0.494	99	0.500	0.484	97	2	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0432	108	0.0400	0.0441	110	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-32110

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 22L295

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32110

SDG : 22L295

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 12/22/22 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.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL040WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSL040WL. 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 22L302-01M/22L302-01S. Refer to Matrix QC summary form for details.

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32110

SDG : 22L295

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

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

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL040WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for JP5 was within LCS QC limits in J5L040WL. 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. JP5 was within MS QC limits in 22L302-01M/22L302-01S. Refer to Matrix QC summary form for details.

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-32110

SDG : 22L295

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

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

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSL040WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for JP8 was within LCS QC limits in J8L040WL. 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. JP8 was within MS QC limits in 22L303-01M/22L303-01S. Refer to Matrix QC summary form for details.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-32110

SDG NO. : 22L295
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSL040WB	1	NA	01/05/2320:12	12/28/2213:15	LA05026A	LA05020A	22DSL040W	Method Blank
LCS1W	DSL040WL	1	NA	01/05/2320:30	12/28/2213:15	LA05027A	LA05020A	22DSL040W	Lab Control Sample (LCS)
380-32110-1	L295-01	1	NA	01/05/2323:33	12/28/2213:15	LA05037A	LA05034A	22DSL040W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-32110

SDG NO. : 22L295
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSL040WB	1	NA	01/05/2320:12	12/28/2213:15	LA05026A	LA05021A	22DSL040W	Method Blank
LCS1W	J5L040WL	1	NA	01/05/2320:49	12/28/2213:15	LA05028A	LA05021A	22DSL040W	Lab Control Sample (LCS)
380-32110-1	L295-01	1	NA	01/05/2323:33	12/28/2213:15	LA05037A	LA05035A	22DSL040W	Field Sample

FN - Filename
% Moist - Percent Moisture

LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-32110

SDG NO. : 22L295
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSL040WB	1	NA	01/05/2320:12	12/28/2213:15	LA05026A	LA05022A	22DSL040W	Method Blank
LCS1W	J8L040WL	1	NA	01/05/2321:07	12/28/2213:15	LA05029A	LA05022A	22DSL040W	Lab Control Sample (LCS)
380-32110-1	L295-01	1	NA	01/05/2323:33	12/28/2213:15	LA05037A	LA05036A	22DSL040W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/19/22 11:08
Project	: 380-32110	Date Received:	12/22/22
Batch No.	: 22L295	Date Extracted:	12/28/22 13:15
Sample ID	: 380-32110-1	Date Analyzed:	01/05/23 23:33
Lab Samp ID:	22L295-01	Dilution Factor:	1
Lab File ID:	LA05037A	Matrix:	WATER
Ext Btch ID:	22DSL040W	% Moisture:	NA
Calib. Ref.:	LA05034A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.440	0.555	79	60-130
Hexacosane	0.160	0.139	115	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 : 900ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/19/22 11:08
Project : 380-32110	Date Received: 12/22/22
Batch No. : 22L295	Date Extracted: 12/28/22 13:15
Sample ID : 380-32110-1	Date Analyzed: 01/05/23 23:33
Lab Samp ID: 22L295-01	Dilution Factor: 1
Lab File ID: LA05037A	Matrix: WATER
Ext Btch ID: 22DSL040W	% Moisture: NA
Calib. Ref.: LA05035A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.440	0.555	79	60-130
Hexacosane	0.160	0.139	115	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 900ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/19/22 11:08
Project	: 380-32110	Date Received:	12/22/22
Batch No.	: 22L295	Date Extracted:	12/28/22 13:15
Sample ID	: 380-32110-1	Date Analyzed:	01/05/23 23:33
Lab Samp ID:	22L295-01	Dilution Factor:	1
Lab File ID:	LA05037A	Matrix:	WATER
Ext Btch ID:	22DSL040W	% Moisture:	NA
Calib. Ref.:	LA05036A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.056	0.028	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	0.440	0.555	79	60-130
Hexacosane	0.160	0.139	115	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 900ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/28/22 13:15
Project	: 380-32110	Date Received:	12/28/22
Batch No.	: 22L295	Date Extracted:	12/28/22 13:15
Sample ID	: MBLK1W	Date Analyzed:	01/05/23 20:12
Lab Samp ID:	DSL040WB	Dilution Factor:	1
Lab File ID:	LA05026A	Matrix:	WATER
Ext Btch ID:	22DSL040W	% Moisture:	NA
Calib. Ref.:	LA05020A	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	0.406	0.500	81	60-130
Hexacosane	0.131	0.125	105	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32110
BATCH NO. : 22L295
METHOD : 3520C/8015B

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSL040WB	DSL040WL
LAB FILE ID	: LA05026A	LA05027A
DATE PREPARED	: 12/28/22 13:15	12/28/22 13:15
DATE ANALYZED	: 01/05/23 20:12	01/05/23 20:30
PREP BATCH	: 22DSL040W	22DSL040W
CALIBRATION REF	: LA05020A	LA05020A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Diesel	ND	2.50	2.83	113	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.510	102	60-130
Hexacosane	0.125	0.132	106	60-130

MB: Method Blank sample LCS: Lab Control Sample

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 12/28/22 13:15
Project : 380-32110	Date Received: 12/28/22
Batch No. : 22L295	Date Extracted: 12/28/22 13:15
Sample ID : MBLK1W	Date Analyzed: 01/05/23 20:12
Lab Samp ID: DSL040WB	Dilution Factor: 1
Lab File ID: LA05026A	Matrix: WATER
Ext Btch ID: 22DSL040W	% Moisture: NA
Calib. Ref.: LA05021A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP5	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.406	0.500	81	60-130
Hexacosane	0.131	0.125	105	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP5 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 1000ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32110
BATCH NO. : 22L295
METHOD : 3520C/8015B

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSL040WB	J5L040WL
LAB FILE ID	: LA05026A	LA05028A
DATE PREPARED	: 12/28/22 13:15	12/28/22 13:15
DATE ANALYZED	: 01/05/23 20:12	01/05/23 20:49
PREP BATCH	: 22DSL040W	22DSL040W
CALIBRATION REF	: LA05021A	LA05021A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP5	ND	2.50	2.43	97	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.523	105	60-130
Hexacosane	0.125	0.121	97	60-130

MB: Method Blank sample LCS: Lab Control Sample

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	12/28/22 13:15
Project	: 380-32110	Date Received:	12/28/22
Batch No.	: 22L295	Date Extracted:	12/28/22 13:15
Sample ID	: MBLK1W	Date Analyzed:	01/05/23 20:12
Lab Samp ID:	DSL040WB	Dilution Factor:	1
Lab File ID:	LA05026A	Matrix:	WATER
Ext Btch ID:	22DSL040W	% Moisture:	NA
Calib. Ref.:	LA05022A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
JP8	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.406	0.500	81	60-130
Hexacosane	0.131	0.125	105	60-130

Notes:
RL : Reporting Limit
Parameter H-C Range
JP8 C8-C18
Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.
Sample Amount : 1000ml Final Volume : 5ml
Prepared by : POreto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32110
BATCH NO. : 22L295
METHOD : 3520C/8015B

MATRIX	: WATER	% MOISTURE:NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MBLK1W	LCS1W
LAB SAMPLE ID	: DSL040WB	J8L040WL
LAB FILE ID	: LA05026A	LA05029A
DATE PREPARED	: 12/28/22 13:15	12/28/22 13:15
DATE ANALYZED	: 01/05/23 20:12	01/05/23 21:07
PREP BATCH	: 22DSL040W	22DSL040W
CALIBRATION REF	: LA05022A	LA05022A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP8	ND	2.50	2.90	116	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.489	98	60-130
Hexacosane	0.125	0.127	102	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32386
BATCH NO. : 22L302
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-32386-1	380-32386-1MS	380-32386-1MSD
LAB SAMPLE ID	: 22L302-01	22L302-01M	22L302-01S
LAB FILE ID	: LA05039A	LA05040A	LA05041A
DATE PREPARED	: 12/28/22 13:15	12/28/22 13:15	12/28/22 13:15
DATE ANALYZED	: 01/06/23 00:10	01/06/23 00:28	01/06/23 00:47
PREP BATCH	: 22DSL040W	22DSL040W	22DSL040W
CALIBRATION REF:	LA05034A	LA05034A	LA05034A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.75	3.15	115	2.75	3.19	116	1	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.550	0.531	97	0.550	0.598	109	60-130
Hexacosane	0.138	0.153	111	0.138	0.159	116	60-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32386
BATCH NO. : 22L302
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-32386-1	380-32386-1MS	380-32386-1MSD
LAB SAMPLE ID	: 22L302-01	22L302-01M	22L302-01S
LAB FILE ID	: LA05039A	LA05042A	LA05043A
DATE PREPARED	: 12/28/22 13:15	12/28/22 13:15	12/28/22 13:15
DATE ANALYZED	: 01/06/23 00:10	01/06/23 01:05	01/06/23 01:23
PREP BATCH	: 22DSL040W	22DSL040W	22DSL040W
CALIBRATION REF	: LA05035A	LA05035A	LA05035A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.78	3.07	111	2.80	2.84	101	8	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.555	0.557	100	0.560	0.601	107	60-130
Hexacosane	0.139	0.162	117	0.140	0.141	101	60-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-32289
BATCH NO. : 22L303
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: 380-32289-1	380-32289-1MS	380-32289-1MSD
LAB SAMPLE ID	: 22L303-01	22L303-01M	22L303-01S
LAB FILE ID	: LA05044A	LA05045A	LA05046A
DATE PREPARED	: 12/28/22 13:15	12/28/22 13:15	12/28/22 13:15
DATE ANALYZED	: 01/06/23 01:42	01/06/23 02:00	01/06/23 02:18
PREP BATCH	: 22DSL040W	22DSL040W	22DSL040W
CALIBRATION REF	: LA05036A	LA05036A	LA05036A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.55	3.02	118	2.55	2.75	108	9	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.510	0.525	103	0.510	0.526	103	60-130
Hexacosane	0.127	0.132	104	0.127	0.132	104	60-130

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

January 09, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-32110-1
Physis Project ID: 1407003-352

Dear Rosalynn,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 12/21/2022. 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: 1407003-352

RED-HILL Project # 38001111 Job # 380-32110-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
102969	MOANALUA WELLS	380-32110-1	12/19/2022	11:08	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

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

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QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

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CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

PHYSIS Project ID: 1407003-352
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32110-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 102969-R1	**MOANALUA WELLS 380-32110-1**		**Matrix: Samplewater**				**Sampled:**	**19-Dec-22 11:08**		**Received:**	**21-Dec-22**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40074	26-Dec-22	08-Jan-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 102969-R1	**MOANALUA WELLS 380-32110-1**		**Matrix: Samplewater**				**Sampled:**	**19-Dec-22 11:08**		**Received:**	**21-Dec-22**
(d10-Acenaphthene)	EPA 625.1	% Recovery	85	1			Total		O-40074	26-Dec-22	08-Jan-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	90	1			Total		O-40074	26-Dec-22	08-Jan-23
(d12-Chrysene)	EPA 625.1	% Recovery	97	1			Total		O-40074	26-Dec-22	08-Jan-23
(d12-Perylene)	EPA 625.1	% Recovery	84	1			Total		O-40074	26-Dec-22	08-Jan-23
(d8-Naphthalene)	EPA 625.1	% Recovery	77	1			Total		O-40074	26-Dec-22	08-Jan-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23

PHYSIS Project ID: 1407003-352
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32110-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40074	26-Dec-22	08-Jan-23

QUALITY CONTROL REPORT

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 102968-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40074		Prepared: 26-Dec-22					Analyzed: 08-Jan-23	
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 102968-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40074		Prepared: 26-Dec-22					Analyzed: 08-Jan-23	
Disalicylidenepropanediamin	Total	42.9	1	0.05	0.1	µg/L	50	0	86	50 - 150%	PASS			
Sample ID: 102968-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40074		Prepared: 26-Dec-22					Analyzed: 08-Jan-23	
Disalicylidenepropanediamin	Total	45.8	1	0.05	0.1	µg/L	50	0	92	50 - 150%	PASS	6	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 102968-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-40074		Prepared: 26-Dec-22				Analyzed: 08-Jan-23	
(d10-Acenaphthene)	Total	92	1			% Recovery	100	92	27 - 133%	PASS			
(d10-Phenanthrene)	Total	94	1			% Recovery	100	94	43 - 129%	PASS			
(d12-Chrysene)	Total	99	1			% Recovery	100	99	52 - 144%	PASS			
(d12-Perylene)	Total	103	1			% Recovery	100	103	36 - 161%	PASS			
(d8-Naphthalene)	Total	87	1			% Recovery	100	87	25 - 125%	PASS			
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L							
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L							
Anthracene	Total	ND	1	0.001	0.005	µg/L							
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L							
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L							
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Biphenyl	Total	ND	1	0.001	0.005	µg/L							
Chrysene	Total	ND	1	0.001	0.005	µg/L							
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L							
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L							
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L							

PHYSIS Project ID: 1407003-352
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32110-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

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

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 102968-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-40074		Prepared: 26-Dec-22				Analyzed: 08-Jan-23	
(d10-Acenaphthene)	Total	93	1			% Recovery	100	0	93	27 - 133%	PASS		
(d10-Phenanthrene)	Total	96	1			% Recovery	100	0	96	43 - 129%	PASS		
(d12-Chrysene)	Total	97	1			% Recovery	100	0	97	52 - 144%	PASS		
(d12-Perylene)	Total	99	1			% Recovery	100	0	99	36 - 161%	PASS		
(d8-Naphthalene)	Total	84	1			% Recovery	100	0	84	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.477	1	0.001	0.005	µg/L	0.5	0	95	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.448	1	0.001	0.005	µg/L	0.5	0	90	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.498	1	0.001	0.005	µg/L	0.5	0	100	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	48 - 120%	PASS		
2-Methylnaphthalene	Total	1.44	1	0.001	0.005	µg/L	1.5	0	96	47 - 130%	PASS		
Acenaphthene	Total	1.49	1	0.001	0.005	µg/L	1.5	0	99	53 - 131%	PASS		
Acenaphthylene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	43 - 140%	PASS		
Anthracene	Total	1.52	1	0.001	0.005	µg/L	1.5	0	101	58 - 135%	PASS		
Benz[a]anthracene	Total	1.56	1	0.001	0.005	µg/L	1.5	0	104	55 - 145%	PASS		
Benzo[a]pyrene	Total	1.54	1	0.001	0.005	µg/L	1.5	0	103	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	1.63	1	0.001	0.005	µg/L	1.5	0	109	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	42 - 152%	PASS		
Benzo[g,h,i]perylene	Total	1.59	1	0.001	0.005	µg/L	1.5	0	106	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	1.64	1	0.001	0.005	µg/L	1.5	0	109	56 - 145%	PASS		
Biphenyl	Total	0.523	1	0.001	0.005	µg/L	0.5	0	105	56 - 119%	PASS		
Chrysene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	56 - 141%	PASS		
Dibenz[a,h]anthracene	Total	1.55	1	0.001	0.005	µg/L	1.5	0	103	55 - 150%	PASS		
Dibenzo[a,l]pyrene	Total	0.539	1	0.001	0.005	µg/L	0.5	0	108	50 - 150%	PASS		
Dibenzothiophene	Total	0.459	1	0.001	0.005	µg/L	0.5	0	92	46 - 126%	PASS		

PHYSIS Project ID: 1407003-352
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32110-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Fluoranthene	Total	1.68	1	0.001	0.005	µg/L	1.5	0	112	60 - 146%	PASS			
Fluorene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	1.61	1	0.001	0.005	µg/L	1.5	0	107	50 - 151%	PASS			
Naphthalene	Total	1.38	1	0.001	0.005	µg/L	1.5	0	92	41 - 126%	PASS			
Perylene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	48 - 141%	PASS			
Phenanthrene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	67 - 127%	PASS			
Pyrene	Total	1.62	1	0.001	0.005	µg/L	1.5	0	108	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Sample ID: 102968-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**		
		Method: EPA 625.1				Batch ID: O-40074			Prepared: 26-Dec-22				Analyzed: 08-Jan-23		
(d10-Acenaphthene)	Total	92	1			% Recovery	100	0	92	27 - 133%	PASS	1	30	PASS	
(d10-Phenanthrene)	Total	95	1			% Recovery	100	0	95	43 - 129%	PASS	1	30	PASS	
(d12-Chrysene)	Total	95	1			% Recovery	100	0	95	52 - 144%	PASS	2	30	PASS	
(d12-Perylene)	Total	94	1			% Recovery	100	0	94	36 - 161%	PASS	5	30	PASS	
(d8-Naphthalene)	Total	84	1			% Recovery	100	0	84	25 - 125%	PASS	0	30	PASS	
1-Methylnaphthalene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	31 - 128%	PASS	3	30	PASS	
1-Methylphenanthrene	Total	0.452	1	0.001	0.005	µg/L	0.5	0	90	66 - 127%	PASS	0	30	PASS	
2,3,5-Trimethylnaphthalene	Total	0.516	1	0.001	0.005	µg/L	0.5	0	103	55 - 122%	PASS	3	30	PASS	
2,6-Dimethylnaphthalene	Total	0.505	1	0.001	0.005	µg/L	0.5	0	101	48 - 120%	PASS	2	30	PASS	
2-Methylnaphthalene	Total	1.48	1	0.001	0.005	µg/L	1.5	0	99	47 - 130%	PASS	3	30	PASS	
Acenaphthene	Total	1.54	1	0.001	0.005	µg/L	1.5	0	103	53 - 131%	PASS	4	30	PASS	
Acenaphthylene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	43 - 140%	PASS	4	30	PASS	
Anthracene	Total	1.56	1	0.001	0.005	µg/L	1.5	0	104	58 - 135%	PASS	2	30	PASS	
Benz[a]anthracene	Total	1.58	1	0.001	0.005	µg/L	1.5	0	105	55 - 145%	PASS	1	30	PASS	
Benzo[a]pyrene	Total	1.66	1	0.001	0.005	µg/L	1.5	0	111	51 - 143%	PASS	7	30	PASS	
Benzo[b]fluoranthene	Total	1.66	1	0.001	0.005	µg/L	1.5	0	111	46 - 165%	PASS	2	30	PASS	
Benzo[e]pyrene	Total	0.504	1	0.001	0.005	µg/L	0.5	0	101	42 - 152%	PASS	1	30	PASS	
Benzo[g,h,i]perylene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	63 - 133%	PASS	1	30	PASS	
Benzo[k]fluoranthene	Total	1.67	1	0.001	0.005	µg/L	1.5	0	111	56 - 145%	PASS	2	30	PASS	
Biphenyl	Total	0.54	1	0.001	0.005	µg/L	0.5	0	108	56 - 119%	PASS	3	30	PASS	
Chrysene	Total	1.57	1	0.001	0.005	µg/L	1.5	0	105	56 - 141%	PASS	2	30	PASS	
Dibenz[a,h]anthracene	Total	1.5	1	0.001	0.005	µg/L	1.5	0	100	55 - 150%	PASS	3	30	PASS	
Dibenzo[a,l]pyrene	Total	0.52	1	0.001	0.005	µg/L	0.5	0	104	50 - 150%	PASS	4	30	PASS	
Dibenzothiophene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	46 - 126%	PASS	2	30	PASS	

PHYSIS Project ID: 1407003-352
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-32110-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
Fluoranthene	Total	1.72	1	0.001	0.005	µg/L	1.5	0	115	60 - 146%	PASS	3	30	PASS	
Fluorene	Total	1.64	1	0.001	0.005	µg/L	1.5	0	109	58 - 131%	PASS	4	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	1.67	1	0.001	0.005	µg/L	1.5	0	111	50 - 151%	PASS	4	30	PASS	
Naphthalene	Total	1.42	1	0.001	0.005	µg/L	1.5	0	95	41 - 126%	PASS	3	30	PASS	
Perylene	Total	0.506	1	0.001	0.005	µg/L	0.5	0	101	48 - 141%	PASS	5	30	PASS	
Phenanthrene	Total	1.6	1	0.001	0.005	µg/L	1.5	0	107	67 - 127%	PASS	2	30	PASS	
Pyrene	Total	1.65	1	0.001	0.005	µg/L	1.5	0	110	54 - 156%	PASS	2	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: 102969

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.1318	4.9971	1111	Anthracene-D10-	1719-06-8	93
10.8909	2.2630	503	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89
32.8248	0.5717	127	Benzoic acid, 2-ethylhexyl ester	5444-75-7	96
57.5735	0.4102	91	Hexanedioic acid, bis(2-ethylhexyl) ester	103-23-1	95

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_40074

RT	Area Pct	Concentration (ng/L)	Library/ID	Cas Number	Match Qual
36.1336	5.7677	1111	Anthracene-D10-	1517-22-2	92
10.8911	2.2211	428	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	89

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

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3/10/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-31643.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-32110-1
Address: 1904 Wright Circle,	Due Date Requested: 1/9/2023			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (380-32110-1)	12/19/22	11:08 Hawaiian		Water			X	2	See Attached Instructions

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

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

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1					12-21-22 14:45	
2		12-21-22 16:05		MOANGA NOM	12/21/22 1605	PHYSIS
3						

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

Ver: 06/08/2021

ICOC No:
380-31643

Containers

Count	Container Type	Preservative
2	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	PAH Fraction TICs

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS

Project Iteration ID: 1407003-352
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-32110-1
COC Page Number: 3 of 3
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: MN
2. Date Received: 12/7/21
3. Time Received: 1605
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): 0.7 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:

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

Chain of Custody Record

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Client Information	Sampler: EJ	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9768-2757.2
Client Contact: Dr. Ron Fenstemacher	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 2
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street, Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ Yes Δ No			
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws.org	WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site: Hawaii	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA		
HALAWA WELLS UNITS 1&2				Water									
MOANALUA WELLS	12/19/22	1108		Water			X	X	X	X			
AIEA GULCH WELLS PUMP 2				Water									
AIEA WELLS PUMPS 1&2 (260)				Water									
HALAWA WELLS UNITS 1&2				Water									
TB MOANALUA WELLS	12/19/22	1108		Water							X		
TB AIEA GULCH WELLS PUMP2				Water									
TB AIEA WELLS PUMPS 1&2 (260)				Water									
TB HALAWA WELLS UNITS 1&2				Water									

380-32110 COC

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx 770839864710
Relinquished by: [redacted]	Date/Time: 12/20/22 1200	Company	Received by: Mark Urutia Date/Time: 12/21/22 1000 Company EEA
Relinquished by:	Date/Time:	Company	Received by: Date/Time: Company
Relinquished by:	Date/Time:	Company	Received by: Date/Time: Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (752A) 3.3 | 3.2 gel-frozen

Ver: 06/08/2021

3/10/2023

Shipping Order Form - Bottle Order

eurofins | Environment Testing

S380-9768

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

Shipping Order ID: 9768

Ship Via: FedEx

When To Ship: 12/19/2022

Due On: 12/19/2022 11:59:00PM

Due After: 12/19/2022 12:00:00 AM

Ship To Information

Project Manager: Rachelle Arada
Tel: (626) 386-1106 Em: Rachelle.Arada@et.eurofinsus.com
Company Name: City & County of Honolulu
Attention: Erwin Kawata
Address 1: 630 South Beretania Street
Address 2: Public Service Bldg. Room 308
Address 3:
City: Honolulu
State: HI
Zip: 96843
Phone #: +1-808-748-5841
Project Ref: RED-HILL
Event Desc: RUSH Weekly Red Hill

Notes to Bottle/Shipping Department

Pack with Gel Ice.

Please pack as one cooler per site.

Label the cooler under the left hand handle with the ID of the samples that are in the cooler (If more than 1 cooler is used per 1 sample ID label cooler with "sample ID x of y").

Pack by sample ID on the botte labels (with one full set of tests per sample ID).

Send only medium to large coolers.

Shipping Method: **Individual sample per cooler (affixed TALS labels)**

- ☑ Ready to Fill
- ☑ Preprinted COC
  - 1 Number of COC Copies
- ☐ Seals on Bottle
- ☐ Seals on Coolers
- ☐ Priority
- ☐ Return Shipment Labels
  - ☐ Prepaid Return
  - Monrovia, CA (Suite 100)
- ☐ Short Hold Times
- ☑ Temperature Control
- ☐ Rush

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

Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
Bottle Order #: 2757
Request From Client: 7/20/2022
Date Order Posted: 7/20/2022 11:12:54AM
Order Status: Ready To Process
Prepared By: Davis Haley
Deliver By Date: ***12/19/2022 11:59:00PM***
Lab Project Number: 38001111
PWSID:

Order Completion Information

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

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		

Total Bottle Summary

Bottle Type Description	Preservative	Bottle Count
Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acic	8
Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	8
Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	8
VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acic	8
Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	16
	Total Bottles:	**48**

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

Notes to Field Staff:

Scan QR code for field sampler instructions

SAMPLER FOLLOW 2 STAGE FIELD PRESERVATION FOR 8015 and 525.2

Health and Safety Notes:

Preservative	Comment
Sodium Sulfite w/HCl	CAUTION! CONTAINS SODIUM SULFITE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Thiosulfate	CAUTION! CONTAINS 10% SODIUM THIOSULFATE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.
Sodium Thiosulfate/Hydrochloric Acid	CAUTION! CONTAINS 10% SODIUM THIOSULFATE. Harmful if inhaled. Use adequate ventilation. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. Contains 13.3% Monochloroacetic Acid. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water. CAUTION! CONTAINS 1:1 HYDROCHLORIC ACID. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.

Relinquished By	Company	Date	Time	Received By	Company	Seal#: Seal#: Seal#:
Relinquished By	Company	Date	Time	Received By	Company	Seal#: Seal#: Seal#:

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

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-32110-1

Login Number: 32110
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

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	