



ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-52637-2

Eurofins Eaton Analytical Pomona

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

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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Definitions/Glossary

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

Job ID: 380-52637-2

Qualifiers

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Case Narrative

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

Job ID: 380-52637-2

Job ID: 380-52637-2

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-52637-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 6/28/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.4°C, 1.6°C, 3.1°C and 7.5°C

Receipt Exceptions

One or more containers for the following sample was received broken or leaking: AIEA WELLS PUMPS 1&2 (260) P2 (380-52637-3). Two out of four received 8015 vials from site AIEA WELLS PUMPS 1&2 (260) P2 were received broken.

The following samples were received at the laboratory outside the required temperature criteria: This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to cancel analysis.

One out of four coolers arrived out of the required temperature criteria. All of the selected containers associated with this particular cooler are below.

OVER TEMP - affected samples and their methods:

Moanalua Wells - Method 625

Aiea Gulch Wells Pump 2 - Method 625

Aiea Wells Pump P2 - Method 8015

Halawa Wells Unit P1 - Method 625 and 8015

This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to cancel analysis.

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. The subcontract report is appended in its entirety.

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. The subcontract report is appended in its entirety.

Detection Summary

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

Job ID: 380-52637-2

Client Sample ID: MOANALUA WELLS **Lab Sample ID: 380-52637-1**

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2 **Lab Sample ID: 380-52637-2**

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2 **Lab Sample ID: 380-52637-3**

No Detections.

Client Sample ID: TB MOANALUA WELLS **Lab Sample ID: 380-52637-5**

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2 **Lab Sample ID: 380-52637-6**

No Detections.



This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 380-52637-2

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-52637-1

Date Collected: 06/26/23 10:18

Matrix: Drinking Water

Date Received: 06/28/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			06/29/23 15:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	88		60 - 140					06/29/23 15:34	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			07/07/23 22:06	1
JP5	ND	U	0.055		mg/L			07/07/23 22:06	1
JP8	ND	U	0.055		mg/L			07/07/23 22:06	1
MOTOR OIL	ND	U	0.055		mg/L			07/07/23 22:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE	90		60 - 130					07/07/23 22:06	1
HEXACOSANE	115		60 - 130					07/07/23 22:06	1

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-52637-2

Date Collected: 06/26/23 11:41

Matrix: Drinking Water

Date Received: 06/28/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			06/29/23 17:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	80		60 - 140					06/29/23 17:23	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	0.025		mg/L			07/07/23 22:25	1
JP5	ND	U	0.05		mg/L			07/07/23 22:25	1
JP8	ND	U	0.05		mg/L			07/07/23 22:25	1
MOTOR OIL	ND	U	0.05		mg/L			07/07/23 22:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
BROMOBENZENE	87		60 - 130					07/07/23 22:25	1
HEXACOSANE	107		60 - 130					07/07/23 22:25	1

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-52637-3

Date Collected: 06/26/23 11:14

Matrix: Drinking Water

Date Received: 06/28/23 09:40

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		06/29/23 00:00	07/15/23 03:04	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Acenaphthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Anthracene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1

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Client Sample Results

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

Job ID: 380-52637-2

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-52637-3

Date Collected: 06/26/23 11:14

Matrix: Drinking Water

Date Received: 06/28/23 09:40

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
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Biphenyl	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Chrysene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/29/23 00:00	07/15/23 03:04	1
Fluoranthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Fluorene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Naphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Perylene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Phenanthrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1
Pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/15/23 03:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	78		27 - 133	06/29/23 00:00	07/15/23 03:04	1
(d10-Phenanthrene)	78		43 - 129	06/29/23 00:00	07/15/23 03:04	1
(d12-Chrysene)	102		52 - 144	06/29/23 00:00	07/15/23 03:04	1
(d12-Perylene)	66		36 - 161	06/29/23 00:00	07/15/23 03:04	1
(d8-Naphthalene)	86		25 - 125	06/29/23 00:00	07/15/23 03:04	1

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-52637-5

Date Collected: 06/26/23 10:18

Matrix: Water

Date Received: 06/28/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			06/29/23 19:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	87		60 - 140		06/29/23 19:12	1

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-52637-6

Date Collected: 06/26/23 11:41

Matrix: Water

Date Received: 06/28/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			06/29/23 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	90		60 - 140		06/29/23 20:25	1

Surrogate Summary

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

Job ID: 380-52637-2

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

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
107835-B1	Method Blank	79	73	105	78	77
107835-BS1	Lab Control Sample	89	69	102	82	79
107835-BS2	Lab Control Sample Dup	91	68	100	83	79

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-52637-3	AIEA WELLS PUMPS 1&2 (260)	78	78	102	86	66

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-52637-1	MOANALUA WELLS	88
380-52637-2	AIEA GULCH WELLS PUMP 2	80

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-52637-5	TB MOANALUA WELLS	87
380-52637-6	TB AIEA GULCH WELLS PUMP 2	90

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-52637-2

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (60-140)
23F197-01M	Matrix Spike	98
23F197-01S	Matrix Spike Duplicate	101

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB
23VG39F14B	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)

Lab Sample ID	Client Sample ID	BFB (70-130)
23VG39F14C	LCD	102
23VG39F14L	Lab Control Sample	104

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)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)
380-52637-1	MOANALUA WELLS	90	115
380-52637-2	AIEA GULCH WELLS PUMP 2	87	107

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)

Lab Sample ID	Client Sample ID	BB	XACOSAI
23DSG006WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Surrogate Summary

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

Job ID: 380-52637-2

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

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB	XACOSAI
		(60-130)	(60-130)
23DSG006WC	LCD	87	109
23DSG006WL	Lab Control Sample	78	110
23J5G006WC	LCD	85	107
23J5G006WL	Lab Control Sample	71	115
23J8G006WC	LCD	97	106
23J8G006WL	Lab Control Sample	98	108

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

QC Sample Results

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

Job ID: 380-52637-2

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

Lab Sample ID: 107835-B1
Matrix: BlankMatrix
Analysis Batch: O-41122

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-41122_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Acenaphthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Acenaphthylene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Anthracene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Biphenyl	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Chrysene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Dibenzothiophene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		06/29/23 00:00	07/14/23 18:00	1
Fluoranthene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Fluorene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Naphthalene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Perylene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Phenanthrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1
Pyrene	ND		0.005	0.001	µg/L		06/29/23 00:00	07/14/23 18:00	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	79		27 - 133	06/29/23 00:00	07/14/23 18:00	1
(d10-Phenanthrene)	73		43 - 129	06/29/23 00:00	07/14/23 18:00	1
(d12-Chrysene)	105		52 - 144	06/29/23 00:00	07/14/23 18:00	1
(d12-Perylene)	77		36 - 161	06/29/23 00:00	07/14/23 18:00	1
(d8-Naphthalene)	78		25 - 125	06/29/23 00:00	07/14/23 18:00	1

Lab Sample ID: 107835-BS1
Matrix: BlankMatrix
Analysis Batch: O-41122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41122_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.487		µg/L		97	31 - 128
1-Methylphenanthrene	0.5	0.363		µg/L		73	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.406		µg/L		81	55 - 122
2,6-Dimethylnaphthalene	0.5	0.424		µg/L		85	48 - 120
2-Methylnaphthalene	0.5	0.517		µg/L		103	47 - 130
Acenaphthene	0.5	0.447		µg/L		89	53 - 131
Acenaphthylene	0.5	0.434		µg/L		87	43 - 140
Anthracene	0.5	0.431		µg/L		86	58 - 135

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-52637-2

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

Lab Sample ID: 107835-BS1
Matrix: BlankMatrix
Analysis Batch: O-41122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-41122_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Benz[a]anthracene	0.25	0.253		µg/L		101	55 - 145	
Benzo[a]pyrene	0.5	0.387		µg/L		77	51 - 143	
Benzo[b]fluoranthene	0.5	0.309		µg/L		62	46 - 165	
Benzo[e]pyrene	0.5	0.362		µg/L		72	42 - 152	
Benzo[g,h,i]perylene	0.5	0.386		µg/L		77	63 - 133	
Benzo[k]fluoranthene	0.5	0.357		µg/L		71	56 - 145	
Biphenyl	0.5	0.596		µg/L		119	56 - 119	
Chrysene	0.25	0.247		µg/L		99	56 - 141	
Dibenz[a,h]anthracene	0.5	0.296		µg/L		59	55 - 150	
Dibenzo[a,l]pyrene	1	1.2		µg/L		120	50 - 150	
Dibenzothiophene	0.5	0.372		µg/L		74	46 - 126	
Disalicylidenepropanediamine	10	7.7		µg/L		77	50 - 150	
Fluoranthene	0.5	0.426		µg/L		85	60 - 146	
Fluorene	0.5	0.387		µg/L		77	58 - 131	
Indeno[1,2,3-cd]pyrene	0.5	0.282		µg/L		56	50 - 151	
Naphthalene	0.5	0.441		µg/L		88	41 - 126	
Perylene	0.5	0.45		µg/L		90	48 - 141	
Phenanthrene	0.5	0.388		µg/L		78	67 - 127	
Pyrene	0.5	0.412		µg/L		82	54 - 156	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	89		27 - 133
(d10-Phenanthrene)	69		43 - 129
(d12-Chrysene)	102		52 - 144
(d12-Perylene)	79		36 - 161
(d8-Naphthalene)	82		25 - 125

Lab Sample ID: 107835-BS2
Matrix: BlankMatrix
Analysis Batch: O-41122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41122_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits			
1-Methylnaphthalene	0.5	0.483		µg/L		97	31 - 128	0	30	
1-Methylphenanthrene	0.5	0.337		µg/L		67	66 - 127	9	30	
2,3,5-Trimethylnaphthalene	0.5	0.41		µg/L		82	55 - 122	1	30	
2,6-Dimethylnaphthalene	0.5	0.407		µg/L		81	48 - 120	5	30	
2-Methylnaphthalene	0.5	0.514		µg/L		103	47 - 130	0	30	
Acenaphthene	0.5	0.434		µg/L		87	53 - 131	2	30	
Acenaphthylene	0.5	0.422		µg/L		84	43 - 140	4	30	
Anthracene	0.5	0.395		µg/L		79	58 - 135	8	30	
Benz[a]anthracene	0.25	0.24		µg/L		96	55 - 145	5	30	
Benzo[a]pyrene	0.5	0.39		µg/L		78	51 - 143	1	30	
Benzo[b]fluoranthene	0.5	0.313		µg/L		63	46 - 165	2	30	
Benzo[e]pyrene	0.5	0.336		µg/L		67	42 - 152	7	30	
Benzo[g,h,i]perylene	0.5	0.358		µg/L		72	63 - 133	7	30	
Benzo[k]fluoranthene	0.5	0.364		µg/L		73	56 - 145	3	30	
Biphenyl	0.5	0.561		µg/L		112	56 - 119	6	30	
Chrysene	0.25	0.239		µg/L		96	56 - 141	3	30	

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-52637-2

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

Lab Sample ID: 107835-BS2
Matrix: BlankMatrix
Analysis Batch: O-41122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-41122_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenz[a,h]anthracene	0.5	0.294		µg/L		59	55 - 150	0	30
Dibenzo[a,l]pyrene	1	1.3		µg/L		130	50 - 150	8	30
Dibenzothiophene	0.5	0.336		µg/L		67	46 - 126	10	30
Disalicylidenepropanediamine	10	10.4		µg/L		104	50 - 150	30	30
Fluoranthene	0.5	0.377		µg/L		75	60 - 146	12	30
Fluorene	0.5	0.361		µg/L		72	58 - 131	7	30
Indeno[1,2,3-cd]pyrene	0.5	0.264		µg/L		53	50 - 151	6	30
Naphthalene	0.5	0.415		µg/L		83	41 - 126	6	30
Perylene	0.5	0.413		µg/L		83	48 - 141	8	30
Phenanthrene	0.5	0.377		µg/L		75	67 - 127	4	30
Pyrene	0.5	0.385		µg/L		77	54 - 156	6	30

Surrogate	LCS DUP %Recovery	LCS DUP Qualifier	Limits
(d10-Acenaphthene)	91		27 - 133
(d10-Phenanthrene)	68		43 - 129
(d12-Chrysene)	100		52 - 144
(d12-Perylene)	79		36 - 161
(d8-Naphthalene)	83		25 - 125

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

Lab Sample ID: 23VG39F14B
Matrix: WATER
Analysis Batch: 23VG39F14

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			06/29/23 13:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE					06/29/23 13:44	1

Lab Sample ID: 23VG39F14L
Matrix: WATER
Analysis Batch: 23VG39F14

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	0.5	0.446		mg/L		89	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOFLUOROBENZENE	104		70 - 130

Lab Sample ID: 23F197-01M
Matrix: WATER
Analysis Batch: 23VG39F14

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
GASOLINE	ND		0.5	0.451		mg/L		90	50 - 130

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-52637-2

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

Lab Sample ID: 23F197-01M
Matrix: WATER
Analysis Batch: 23VG39F14

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
BROMOFLUOROBENZENE	98		60 - 140

Lab Sample ID: 23F197-01S
Matrix: WATER
Analysis Batch: 23VG39F14

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
GASOLINE	ND		0.5	0.457		mg/L		91	50 - 130	1	30

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
BROMOFLUOROBENZENE	101		60 - 140

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

Lab Sample ID: 23DSG006WB
Matrix: WATER
Analysis Batch: 23DSG006W

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
DIESEL	ND	U	0.025		mg/L			07/07/23 19:55	1
JP5	ND	U	0.05		mg/L			07/07/23 19:55	1
JP8	ND	U	0.05		mg/L			07/07/23 19:55	1
MOTOR OIL	ND	U	0.05		mg/L			07/07/23 19:55	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
BROMOBENZENE					07/07/23 19:55	1
HEXACOSANE					07/07/23 19:55	1

Lab Sample ID: 23DSG006WL
Matrix: WATER
Analysis Batch: 23DSG006W

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
DIESEL	2.5	2.24		mg/L		90	50 - 130

<i>Surrogate</i>	<i>%Recovery</i>	<i>LCS LCS Qualifier</i>	<i>Limits</i>
BROMOBENZENE	78		60 - 130
HEXACOSANE	110		60 - 130

Lab Sample ID: 23J5G006WL
Matrix: WATER
Analysis Batch: 23DSG006W

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
JP5	2.5	1.92		mg/L		77	30 - 160

QC Sample Results

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

Job ID: 380-52637-2

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

Lab Sample ID: 23J5G006WL
Matrix: WATER
Analysis Batch: 23DSG006W

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

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	71		60 - 130
HEXACOSANE	115		60 - 130

Lab Sample ID: 23J8G006WL
Matrix: WATER
Analysis Batch: 23DSG006W

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

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCS</i> <i>Result</i>	<i>LCS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i> <i>Limits</i>
JP8	2.5	2.15		mg/L		86	30 - 160

<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
BROMOBENZENE	98		60 - 130
HEXACOSANE	108		60 - 130

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QC Association Summary

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

Job ID: 380-52637-2

Subcontract

Analysis Batch: O-41122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-52637-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-41122_P
107835-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41122_P
107835-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41122_P
107835-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-41122_P

Analysis Batch: 23DSG006W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-52637-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
380-52637-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSG006WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSG006WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5G006WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8G006WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VG39F14

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-52637-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-52637-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-52637-5	TB MOANALUA WELLS	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
380-52637-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39F14B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39F14L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23F197-01M	Matrix Spike	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23F197-01S	Matrix Spike Duplicate	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

QC Association Summary

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

Job ID: 380-52637-2

Subcontract

Prep Batch: O-41122_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-52637-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
107835-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
107835-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
107835-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

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Lab Chronicle

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

Job ID: 380-52637-2

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-52637-1

Date Collected: 06/26/23 10:18

Matrix: Drinking Water

Date Received: 06/28/23 09:40

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	23VG39F14	SCerva		06/29/23 15:34
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSG006W	SDees		07/07/23 22:06

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-52637-2

Date Collected: 06/26/23 11:41

Matrix: Drinking Water

Date Received: 06/28/23 09:40

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	23VG39F14	SCerva		06/29/23 17:23
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSG006W	SDees		07/07/23 22:25

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2

Lab Sample ID: 380-52637-3

Date Collected: 06/26/23 11:14

Matrix: Drinking Water

Date Received: 06/28/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-41122_P			06/29/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-41122	YC		07/15/23 03:04

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-52637-5

Date Collected: 06/26/23 10:18

Matrix: Water

Date Received: 06/28/23 09:40

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	23VG39F14	SCerva		06/29/23 19:12

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-52637-6

Date Collected: 06/26/23 11:41

Matrix: Water

Date Received: 06/28/23 09:40

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	23VG39F14	SCerva		06/29/23 20:25

Laboratory References:

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

Method Summary

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

Job ID: 380-52637-2

Method	Method Description	Protocol	Laboratory
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	

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



Sample Summary

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

Job ID: 380-52637-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-52637-1	MOANALUA WELLS	Drinking Water	06/26/23 10:18	06/28/23 09:40
380-52637-2	AIEA GULCH WELLS PUMP 2	Drinking Water	06/26/23 11:41	06/28/23 09:40
380-52637-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	06/26/23 11:14	06/28/23 09:40
380-52637-5	TB MOANALUA WELLS	Water	06/26/23 10:18	06/28/23 09:40
380-52637-6	TB AIEA GULCH WELLS PUMP 2	Water	06/26/23 11:41	06/28/23 09:40

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October 27, 2023

Rachelle Arada
 Eurofins Eaton Analytical
 750 Royal Oaks Drive
 Suite 100
 Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-52637-1
 Physis Project ID: 1407003-411

Dear Rachelle,

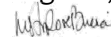
Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 6/29/2023. A total of 4 samples were received for analysis in accordance with the attached chain of custody (COC). Per the COC, the samples were analyzed for:

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: 1407003-411

RED-HILL Project # 38001111 Job # 380-52637-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
107838	AIEA WELLS PUMPS 1&2 (260) P2	380-52637-3	6/26/2023	11:14	Samplewater	Not Specified

ABBREVIATIONS and ACRONYMS

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

QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PHYSIS QUALIFIER CODES

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

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICALS

REPORT

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Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 107838-R1 AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater Sampled: 26-Jun-23 11:14 Received: 29-Jun-23											
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-41122	29-Jun-23	15-Jul-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed	
Sample ID: 107838-R1	AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater						Sampled:	26-Jun-23 11:14	Received:	29-Jun-23		
(d10-Acenaphthene)	EPA 625.1	% Recovery	78	1			Total	O-41122	29-Jun-23	15-Jul-23		
(d10-Phenanthrene)	EPA 625.1	% Recovery	78	1			Total	O-41122	29-Jun-23	15-Jul-23		
(d12-Chrysene)	EPA 625.1	% Recovery	102	1			Total	O-41122	29-Jun-23	15-Jul-23		
(d12-Perylene)	EPA 625.1	% Recovery	66	1			Total	O-41122	29-Jun-23	15-Jul-23		
(d8-Naphthalene)	EPA 625.1	% Recovery	86	1			Total	O-41122	29-Jun-23	15-Jul-23		
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total	O-41122	29-Jun-23	15-Jul-23		

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-41122	29-Jun-23	15-Jul-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41122	29-Jun-23	15-Jul-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41122	29-Jun-23	15-Jul-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41122	29-Jun-23	15-Jul-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41122	29-Jun-23	15-Jul-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41122	29-Jun-23	15-Jul-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-41122	29-Jun-23	15-Jul-23



QUALITY CONTROL REPORT

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Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE		SOURCE		ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 107835-B1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:				Received:			
		Method: EPA 625.1				Batch ID: O-41122		Prepared: 29-Jun-23				Analyzed: 14-Jul-23			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L									
Sample ID: 107835-BS1		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:				Received:			
		Method: EPA 625.1				Batch ID: O-41122		Prepared: 29-Jun-23				Analyzed: 14-Jul-23			
Disalicylidenepropanediamin	Total	7.7	1	0.05	0.1	µg/L	10	0	77	50 - 150%	PASS				
Sample ID: 107835-BS2		QAQC Procedural Blank				Matrix: BlankMatrix		Sampled:				Received:			
		Method: EPA 625.1				Batch ID: O-41122		Prepared: 29-Jun-23				Analyzed: 14-Jul-23			
Disalicylidenepropanediamin	Total	10.4	1	0.05	0.1	µg/L	10	0	104	50 - 150%	PASS	30	30	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 107835-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
	Method: EPA 625.1					Batch ID: O-41122	Prepared: 29-Jun-23	Analyzed: 14-Jul-23			
(d10-Acenaphthene)	Total	79	1			% Recovery	100	79	27 - 133%	PASS	
(d10-Phenanthrene)	Total	73	1			% Recovery	100	73	43 - 129%	PASS	
(d12-Chrysene)	Total	105	1			% Recovery	100	105	52 - 144%	PASS	
(d12-Perylene)	Total	77	1			% Recovery	100	77	36 - 161%	PASS	
(d8-Naphthalene)	Total	78	1			% Recovery	100	78	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					



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc	
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 107835-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-41122			Prepared: 29-Jun-23		Analyzed: 14-Jul-23					
(d10-Acenaphthene)	Total	89	1			% Recovery	100	0	89	27 - 133%	PASS	
(d10-Phenanthrene)	Total	69	1			% Recovery	100	0	69	43 - 129%	PASS	
(d12-Chrysene)	Total	102	1			% Recovery	100	0	102	52 - 144%	PASS	
(d12-Perylene)	Total	79	1			% Recovery	100	0	79	36 - 161%	PASS	
(d8-Naphthalene)	Total	82	1			% Recovery	100	0	82	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.363	1	0.001	0.005	µg/L	0.5	0	73	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.406	1	0.001	0.005	µg/L	0.5	0	81	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.424	1	0.001	0.005	µg/L	0.5	0	85	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.517	1	0.001	0.005	µg/L	0.5	0	103	47 - 130%	PASS	
Acenaphthene	Total	0.447	1	0.001	0.005	µg/L	0.5	0	89	53 - 131%	PASS	
Acenaphthylene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	43 - 140%	PASS	
Anthracene	Total	0.431	1	0.001	0.005	µg/L	0.5	0	86	58 - 135%	PASS	
Benz[a]anthracene	Total	0.253	1	0.001	0.005	µg/L	0.25	0	101	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.387	1	0.001	0.005	µg/L	0.5	0	77	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.309	1	0.001	0.005	µg/L	0.5	0	62	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.362	1	0.001	0.005	µg/L	0.5	0	72	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.386	1	0.001	0.005	µg/L	0.5	0	77	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.357	1	0.001	0.005	µg/L	0.5	0	71	56 - 145%	PASS	
Biphenyl	Total	0.596	1	0.001	0.005	µg/L	0.5	0	119	56 - 119%	PASS	
Chrysene	Total	0.247	1	0.001	0.005	µg/L	0.25	0	99	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.296	1	0.001	0.005	µg/L	0.5	0	59	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	1.2	1	0.001	0.005	µg/L	1	0	120	50 - 150%	PASS	
Dibenzothiophene	Total	0.372	1	0.001	0.005	µg/L	0.5	0	74	46 - 126%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	0.426	1	0.001	0.005	µg/L	0.5	0	85	60 - 146%	PASS		
Fluorene	Total	0.387	1	0.001	0.005	µg/L	0.5	0	77	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.282	1	0.001	0.005	µg/L	0.5	0	56	50 - 151%	PASS		
Naphthalene	Total	0.441	1	0.001	0.005	µg/L	0.5	0	88	41 - 126%	PASS		
Perylene	Total	0.45	1	0.001	0.005	µg/L	0.5	0	90	48 - 141%	PASS		
Phenanthrene	Total	0.388	1	0.001	0.005	µg/L	0.5	0	78	67 - 127%	PASS		
Pyrene	Total	0.412	1	0.001	0.005	µg/L	0.5	0	82	54 - 156%	PASS		



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 107835-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-41122			Prepared: 29-Jun-23			Analyzed: 14-Jul-23				
(d10-Acenaphthene)	Total	91	1				% Recovery	100	0	91	27 - 133%	PASS	2	30	PASS
(d10-Phenanthrene)	Total	68	1				% Recovery	100	0	68	43 - 129%	PASS	1	30	PASS
(d12-Chrysene)	Total	100	1				% Recovery	100	0	100	52 - 144%	PASS	2	30	PASS
(d12-Perylene)	Total	79	1				% Recovery	100	0	79	36 - 161%	PASS	0	30	PASS
(d8-Naphthalene)	Total	83	1				% Recovery	100	0	83	25 - 125%	PASS	1	30	PASS
1-Methylnaphthalene	Total	0.483	1	0.001	0.005	µg/L		0.5	0	97	31 - 128%	PASS	0	30	PASS
1-Methylphenanthrene	Total	0.337	1	0.001	0.005	µg/L		0.5	0	67	66 - 127%	PASS	9	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.41	1	0.001	0.005	µg/L		0.5	0	82	55 - 122%	PASS	1	30	PASS
2,6-Dimethylnaphthalene	Total	0.407	1	0.001	0.005	µg/L		0.5	0	81	48 - 120%	PASS	5	30	PASS
2-Methylnaphthalene	Total	0.514	1	0.001	0.005	µg/L		0.5	0	103	47 - 130%	PASS	0	30	PASS
Acenaphthene	Total	0.434	1	0.001	0.005	µg/L		0.5	0	87	53 - 131%	PASS	2	30	PASS
Acenaphthylene	Total	0.422	1	0.001	0.005	µg/L		0.5	0	84	43 - 140%	PASS	4	30	PASS
Anthracene	Total	0.395	1	0.001	0.005	µg/L		0.5	0	79	58 - 135%	PASS	8	30	PASS
Benz[a]anthracene	Total	0.24	1	0.001	0.005	µg/L	0.25	0	96	55 - 145%	PASS	5	30	PASS	
Benzo[a]pyrene	Total	0.39	1	0.001	0.005	µg/L	0.5	0	78	51 - 143%	PASS	1	30	PASS	
Benzo[b]fluoranthene	Total	0.313	1	0.001	0.005	µg/L	0.5	0	63	46 - 165%	PASS	2	30	PASS	
Benzo[e]pyrene	Total	0.336	1	0.001	0.005	µg/L	0.5	0	67	42 - 152%	PASS	7	30	PASS	
Benzo[g,h,i]perylene	Total	0.358	1	0.001	0.005	µg/L	0.5	0	72	63 - 133%	PASS	7	30	PASS	
Benzo[k]fluoranthene	Total	0.364	1	0.001	0.005	µg/L	0.5	0	73	56 - 145%	PASS	3	30	PASS	
Biphenyl	Total	0.561	1	0.001	0.005	µg/L	0.5	0	112	56 - 119%	PASS	6	30	PASS	
Chrysene	Total	0.239	1	0.001	0.005	µg/L	0.25	0	96	56 - 141%	PASS	3	30	PASS	
Dibenz[a,h]anthracene	Total	0.294	1	0.001	0.005	µg/L	0.5	0	59	55 - 150%	PASS	0	30	PASS	
Dibenzo[a,l]pyrene	Total	1.3	1	0.001	0.005	µg/L	1	0	130	50 - 150%	PASS	8	30	PASS	
Dibenzothiophene	Total	0.336	1	0.001	0.005	µg/L	0.5	0	67	46 - 126%	PASS	10	30	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	0.377	1	0.001	0.005	µg/L	0.5	0	75	60 - 146%	PASS	12	30	PASS
Fluorene	Total	0.361	1	0.001	0.005	µg/L	0.5	0	72	58 - 131%	PASS	7	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.264	1	0.001	0.005	µg/L	0.5	0	53	50 - 151%	PASS	6	30	PASS
Naphthalene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	41 - 126%	PASS	6	30	PASS
Perylene	Total	0.413	1	0.001	0.005	µg/L	0.5	0	83	48 - 141%	PASS	8	30	PASS
Phenanthrene	Total	0.377	1	0.001	0.005	µg/L	0.5	0	75	67 - 127%	PASS	4	30	PASS
Pyrene	Total	0.385	1	0.001	0.005	µg/L	0.5	0	77	54 - 156%	PASS	6	30	PASS

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PHYSIS

**TENTATIVELY
IDENTIFIED COMPOUNDS**

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 107838

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8541	3.5652	1111	Anthracene-D10	1517-22-2	88
10.1848	3.5478	1106	m-Menthane, (1S,3S)-(+)-	13837-67-7	87
10.3885	2.1549	672	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	84
10.0413	0.7178	224	Hydroperoxide, 1-ethylbutyl	24254-56-6	85
10.7617	0.3720	116	2-Pentene, 4,4-dimethyl-, (Z)-	762-63-0	80

Concentration estimated using the response for Anthracene-d10

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Sample ID: Lab Blank B1_41122

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8584	3.5445	1111	Anthracene-D10	1517-22-2	87
10.1865	1.6593	520	m-Menthane, (1S,3S)-(+)-	13837-67-7	87
10.3922	1.6065	504	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	85
26.9957	1.5081	473	Diethyl Phthalate	84-66-2	89
10.0431	0.5184	163	Hydroperoxide, 1-ethylbutyl	24254-56-6	87

Concentration estimated using the response for Anthracene-d10

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PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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Chain of Custody Record

Eurofins Eaton Analytical Pomona
 941 Corporate Center Drive
 Pomona, CA 91768-2642
 Phone: 626-986-1100



Client Information (Sub Contract Lab)	Sampler:	Lab P#: Arada, Rachelle	Carrier Tracking Note(s):	COG No: 380-52637-1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@eatonanalytical.com	State of Origin: Hawaii	Page: 1 of 1
Company: Physis Environmental Laboratories	Due Date Requested: 7/13/2023	Accreditations Required (See note): State - Hawaii	Job #:	380-52637-1
Address: 1904 Wright Circle, Anaheim, CA, 92806	TAT Requested (days):			

Project Name: RED-HILL	Project #: 38001111	Field Filtered Sample (Yes or No)	Analysis Requested
Site: Honolulu BWS Slides	SSOW#:	Perform MS/MSD (Yes or No)	
Project Name: RED-HILL	Project #: 38001111	SUB (625 PAH Physis LL (EAL) + TICs) / 625 PAH Physis LL (EAL) + TICs	
Site: Honolulu BWS Slides	SSOW#:		

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (G=Comp, B=Trace, A=Aliq)	Matrix (Metal, Nonmetal, Inorganic, Organic)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
MOANALUA WELLS (380-52637-1)	6/26/23	10:18		Water		X		2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-52637-2)	6/26/23	11:41		Water		X		2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-52637-3)	6/26/23	11:14		Water		X		2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-52637-4)	6/26/23	10:30		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/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will 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

Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2

Special Instructions/QC Requirements: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Dispose By Lab Archive For _____ Months

Relinquished by: <i>[Signature]</i>	Date/Time: 6/29/23	Company: Physis	Received by: <i>[Signature]</i>	Date/Time: 6/29/23	Company: Physis
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:			

Project Iteration ID: 1407003-411
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-52637-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: SW
2. Date Received: 6/29
3. Time Received: 1145
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)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
7. What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
8. Randomly Selected Samples Temperature (°C): 3.1°C 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:





3051 Fujita Street
 Torrance, CA 90505
 Tel: (310)-618-8889

Date: 12-12-2023
 EMAX Batch No.: 23F197_R1

Attn: Jackie Contreras

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

Subject: Revised Laboratory Report
 Project: 380-52637

Enclosed is the Revised Laboratory report for samples received on 06/29/23.
 The data reported relate only to samples listed below :

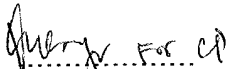
Sample ID	Control #	Co1 Date	Matrix	Analysis
380-52637-1	F197-01	06/26/23	WATER	TPH GASOLINE TPH
380-52637-2	F197-02	06/26/23	WATER	TPH GASOLINE TPH
380-52637-5	F197-05	06/26/23	WATER	TPH GASOLINE
380-52637-6	F197-06	06/26/23	WATER	TPH GASOLINE
380-52637-1MS	F197-01M	06/26/23	WATER	TPH GASOLINE
380-52637-1MSD	F197-01S	06/26/23	WATER	TPH GASOLINE

Note: Report was revised to remove Lab sample IDs: 23F197-03, -04, -07, and -08.

The results are summarized on the following pages.

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

Sincerely yours,


 Caspar J. Pang
 Laboratory Director

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

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

NELAP Accredited Certificate Number CA002912022-24
 ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
 California ELAP Accredited Certificate Number 2672



Client Information (Sub Contract Lab)
 Client Contact: Arada, Rachelle
 Shipping/Receiving: Rachelle.Arada@et.eurofins.com
 Company: EMAX Laboratories Inc
 Address: 3051 Fujita Street, Torrance, CA, 90505
 State: CA, Zip: 90505
 Project Name: RED-HILL
 Site: Honolulu BWS Sites

Lab PM: Arada, Rachelle
 State of Origin: Hawaii
 Carrier Tracking No(s): 380-60319-1
 Page: Page 1 of 1
 Job #: 380-52637-1

Accreditations Required (See note): State - Hawaii

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	(Purgeable) LL (EAL) / 8015 Gas	SUB (8015 LL DRO/MRO/PS/JP/ 8015 LL	DRO/MRO/PS/JP/8	Total Number of Containers	Special Instructions/Note:
MOANALUA WELLS (380-52637-1)	6/26/23	10:18 Hawaiian	Water	Water	X	X	X	X	X	6	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-52637-2)	6/26/23	11:41 Hawaiian	Water	Water	X	X	X	X	X	6	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-52637-3)	6/26/23	11:14 Hawaiian	Water	Water	X	X	X	X	X	4	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-52637-4)	6/26/23	10:50 Hawaiian	Water	Water	X	X	X	X	X	6	See Attached Instructions
TB MOANALUA WELLS (380-52637-5)	6/26/23	10:18 Hawaiian	Water	Water	X	X	X	X	X	2	See Attached Instructions
TB AIEA GULCH WELLS PUMP 2 (380-52637-6)	6/26/23	11:41 Hawaiian	Water	Water	X	X	X	X	X	2	See Attached Instructions
TB AIEA WELLS PUMPS 1&2 (260) (380-52637-7)	6/26/23	11:14 Hawaiian	Water	Water	X	X	X	X	X	2	See Attached Instructions
TB HALAWA WELLS UNITS 1 & 2 P1 (380-52637-8)	6/26/23	10:50 Hawaiian	Water	Water	X	X	X	X	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/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
 Deliverable Requested: I, II, III, IV, Other (specify) _____
 Primary Deliverable Rank: 2
 Date: _____
 Method of Shipment: _____
 Return To Client Disposal By Lab Archive For _____ Months

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
<i>[Signature]</i>	6/29/23 10:36	EEA	<i>[Signature]</i>	6/29/23 10:36	EEA
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:





Type of Delivery	Airbill / Tracking Number	ECN <u>23F197</u>
<input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others		Recipient <u>Jowin Zamora</u>
<input type="checkbox"/> EMAX Courier <input checked="" type="checkbox"/> Client Delivery		Date <u>06/29/23</u> Time <u>10:36</u>

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input type="checkbox"/> Custody Seal	<input type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures	<input checked="" type="checkbox"/> Cooler 1 <u>2.9/2.7</u> °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
(Cool, ≤6 °C but not frozen)	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	<input checked="" type="checkbox"/> A - S/N <u>221852708</u>	<input type="checkbox"/> B - S/N _____	<input type="checkbox"/> C - S/N _____
		<input type="checkbox"/> D - S/N _____	

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
<u>1-4</u>	<u>5,6,11,12,15,16, 21,22</u>	<u>D1</u>	<u>JPS/JP8 not on COC</u>	<u>RES</u>
<u>6,7,8</u>	<u>25-28,30</u>	<u>D22</u>	<u>2nd date/time reads: 6/13/23 11:55</u>	<u>R1</u>
<u>6/29/23</u>				

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

MB 7/5/23

NOTES/OBSERVATIONS:

SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

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

Sample Labeling maria Zamora 6/29/23

Date 6/29/23

SRF Cecilia

Date 6/29/23

PM MB

Date 7/5/23

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.

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LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-52637

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

SDG#: 23F197

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-52637

SDG : 23F197

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

A total of eight(4) water samples were received on 06/29/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VG39F14B - 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. VG39F14L/VG39F14C 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 F197-01M/F197-01S. 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 : 380-52637

SDG NO. : 23F197
Instrument ID : GCT039

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Prep. Data FN	Notes
								WATER
MBLK1W	VG39F14B	1	NA	06/29/2313:44	06/29/2313:44	EF29005A	EF29004A	23VG39F14 Method Blank
LCS1W	VG39F14L	1	NA	06/29/2314:20	06/29/2314:20	EF29006A	EF29004A	23VG39F14 Lab Control Sample (LCS)
LCD1W	VG39F14C	1	NA	06/29/2314:57	06/29/2314:57	EF29007A	EF29004A	23VG39F14 LCS Duplicate
380-52637-1	F197-01	1	NA	06/29/2315:34	06/29/2315:34	EF29008A	EF29004A	23VG39F14 Field Sample
380-52637-1MS	F197-01M	1	NA	06/29/2316:11	06/29/2316:11	EF29009A	EF29004A	23VG39F14 Matrix Spike Sample (MS)
380-52637-1MSD	F197-01S	1	NA	06/29/2316:47	06/29/2316:47	EF29010A	EF29004A	23VG39F14 MS Duplicate (MSD)
380-52637-2	F197-02	1	NA	06/29/2317:23	06/29/2317:23	EF29011A	EF29004A	23VG39F14 Field Sample
380-52637-5	F197-05	1	NA	06/29/2319:12	06/29/2319:12	EF29014A	EF29004A	23VG39F14 Field Sample
380-52637-6	F197-06	1	NA	06/29/2320:25	06/29/2320:25	EF29016A	EF29015A	23VG39F14 Field Sample

FN - Filename
% Moist - Percent Moisture



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SAMPLE RESULTS

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	06/26/23 10:18
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	06/29/23 15:34
Sample ID	: 380-52637-1	Date Analyzed:	06/29/23 15:34
Lab Samp ID:	F197-01	Dilution Factor:	1
Lab File ID:	EF29008A	Matrix:	WATER
Ext Btch ID:	23VG39F14	% Moisture:	NA
Calib. Ref.:	EF29004A	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	0.0352	0.0400	88	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:	06/26/23 11:41
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	06/29/23 17:23
Sample ID	: 380-52637-2	Date Analyzed:	06/29/23 17:23
Lab Samp ID:	F197-02	Dilution Factor:	1
Lab File ID:	EF29011A	Matrix:	WATER
Ext Btch ID:	23VG39F14	% Moisture:	NA
Calib. Ref.:	EF29004A	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	0.0321	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:	06/26/23 10:18
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	06/29/23 19:12
Sample ID	: 380-52637-5	Date Analyzed:	06/29/23 19:12
Lab Samp ID:	F197-05	Dilution Factor:	1
Lab File ID:	EF29014A	Matrix:	WATER
Ext Btch ID:	23VG39F14	% Moisture:	NA
Calib. Ref.:	EF29004A	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	0.0348	0.0400	87	60-140	

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	06/26/23 11:41
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	06/29/23 20:25
Sample ID	: 380-52637-6	Date Analyzed:	06/29/23 20:25
Lab Samp ID:	F197-06	Dilution Factor:	1
Lab File ID:	EF29016A	Matrix:	WATER
Ext Btch ID:	23VG39F14	% Moisture:	NA
Calib. Ref.:	EF29015A	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	0.0359	0.0400	90	60-140

Notes:

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

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



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QC SUMMARIES

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	06/29/23 13:44
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	06/29/23 13:44
Sample ID	: MBLK1W	Date Analyzed:	06/29/23 13:44
Lab Samp ID:	VG39F14B	Dilution Factor:	1
Lab File ID:	EF29005A	Matrix:	WATER
Ext Btch ID:	23VG39F14	% Moisture:	NA
Calib. Ref.:	EF29004A	Instrument ID:	39

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

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-52637
BATCH NO. : 23F197
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39F14B	VG39F14L	VG39F14C
LAB FILE ID	: EF29005A	EF29006A	EF29007A
DATE PREPARED	: 06/29/23 13:44	06/29/23 14:20	06/29/23 14:57
DATE ANALYZED	: 06/29/23 13:44	06/29/23 14:20	06/29/23 14:57
PREP BATCH	: 23VG39F14	23VG39F14	23VG39F14
CALIBRATION REF:	EF29004A	EF29004A	EF29004A

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	0.446	89	0.500	0.454	91	2	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0416	104	0.0400	0.0408	102	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 : 380-52637
BATCH NO. : 23F197
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-52637-1	380-52637-1MS	380-52637-1MSD
LAB SAMPLE ID	: F197-01	F197-01M	F197-01S
LAB FILE ID	: EF29008A	EF29009A	EF29010A
DATE PREPARED	: 06/29/23 15:34	06/29/23 16:11	06/29/23 16:47
DATE ANALYZED	: 06/29/23 15:34	06/29/23 16:11	06/29/23 16:47
PREP BATCH	: 23VG39F14	23VG39F14	23VG39F14
CALIBRATION REF:	EF29004A	EF29004A	EF29004A

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	0.451	90	0.500	0.457	91	1	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0393	98	0.0400	0.0402	101	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-52637

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23F197

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CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-52637

SDG : 23F197

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(2) water samples were received on 06/29/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSG006WB - 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. DSG006WL/DSG006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

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.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-52637

SDG : 23F197

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(2) water samples were received on 06/29/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSG006WB - 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. J5G006WL/J5G006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

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.

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-52637

SDG : 23F197

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

A total of four(2) water samples were received on 06/29/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

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

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSG006WB - 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. J8G006WL/J8G006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

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

Sample Analysis

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 EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-52637
SDG NO. : 23F197
Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER		Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
				Analysis Date/Time	Extraction Date/Time					
MBLK1W	DSG006WB	1	NA	07/07/2319:55	07/06/2312:00	LG07009A	LG07003A	23DSG006W	Method Blank	
LCS1W	DSG006WL	1	NA	07/07/2320:14	07/06/2312:00	LG07010A	LG07003A	23DSG006W	Lab Control Sample (LCS)	
LCD1W	DSG006WC	1	NA	07/07/2320:32	07/06/2312:00	LG07011A	LG07003A	23DSG006W	LCS Duplicate	
380-52637-1	F197-01	1	NA	07/07/2322:06	07/06/2312:00	LG07016A	LG07003A	23DSG006W	Field Sample	
380-52637-2	F197-02	1	NA	07/07/2322:25	07/06/2312:00	LG07017A	LG07003A	23DSG006W	Field Sample	

FN - Filename
% Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-52637

SDG NO. : 23F197
Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	WATER		Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
				Analysis Date/Time	Extraction Date/Time					
MBLK1W	DSG006MB	1	NA	07/07/2319:55	07/06/2312:00	LG07009A	LG07004A	23DSG006W	Method Blank	
LCS1W	J5G006WL	1	NA	07/07/2320:51	07/06/2312:00	LG07012A	LG07004A	23DSG006W	Lab Control Sample (LCS)	
LCD1W	J5G006MC	1	NA	07/07/2321:10	07/06/2312:00	LG07013A	LG07004A	23DSG006W	LCS Duplicate	
380-52637-1	F197-01	1	NA	07/07/2322:06	07/06/2312:00	LG07016A	LG07004A	23DSG006W	Field Sample	
380-52637-2	F197-02	1	NA	07/07/2322:25	07/06/2312:00	LG07017A	LG07004A	23DSG006W	Field Sample	

FN - Filename
% Moist - Percent Moisture



LAB CHRONICLE
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-52637

SDG NO. : 23F197
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
	WATER								
MBLK1W	DSG006MB	1	NA	07/07/2319:55	07/06/2312:00	LG07009A	LG07005A	23DSG006W	Method Blank
LCS1W	J8G006ML	1	NA	07/07/2321:28	07/06/2312:00	LG07014A	LG07005A	23DSG006W	Lab Control Sample (LCS)
LCD1W	J8G006MC	1	NA	07/07/2321:47	07/06/2312:00	LG07015A	LG07005A	23DSG006W	LCS Duplicate
380-52637-1	F197-01	1	NA	07/07/2322:06	07/06/2312:00	LG07016A	LG07005A	23DSG006W	Field Sample
380-52637-2	F197-02	1	NA	07/07/2322:25	07/06/2312:00	LG07017A	LG07005A	23DSG006W	Field Sample

FN - Filename
 % Moist - Percent Moisture

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SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	06/26/23 10:18
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	07/06/23 12:00
Sample ID	: 380-52637-1	Date Analyzed:	07/07/23 22:06
Lab Samp ID:	23F197-01	Dilution Factor:	1
Lab File ID:	LG07016A	Matrix:	WATER
Ext Btch ID:	23DSG006W	% Moisture:	NA
Calib. Ref.:	LG07003A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.055	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.497	0.550	90	60-130
Hexacosane	0.158	0.138	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 : 910ml Final Volume : 5ml
Prepared by : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	06/26/23 11:41
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	07/06/23 12:00
Sample ID	: 380-52637-2	Date Analyzed:	07/07/23 22:25
Lab Samp ID:	23F197-02	Dilution Factor:	1
Lab File ID:	LG07017A	Matrix:	WATER
Ext Btch ID:	23DSG006W	% Moisture:	NA
Calib. Ref.:	LG07003A	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	0.433	0.500	87	60-130
Hexacosane	0.134	0.125	107	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 : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	06/26/23 10:18
Project	: 380-52637	Date Received:	06/29/23
Batch No.	: 23F197	Date Extracted:	07/06/23 12:00
Sample ID	: 380-52637-1	Date Analyzed:	07/07/23 22:06
Lab Samp ID:	23F197-01	Dilution Factor:	1
Lab File ID:	LG07016A	Matrix:	WATER
Ext Btch ID:	23DSG006W	% Moisture:	NA
Calib. Ref.:	LG07004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.055	0.028	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.497	0.550	90	60-130
Hexacosane	0.158	0.138	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 : 910ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 06/26/23 11:41
Project : 380-52637	Date Received: 06/29/23
Batch No. : 23F197	Date Extracted: 07/06/23 12:00
Sample ID : 380-52637-2	Date Analyzed: 07/07/23 22:25
Lab Samp ID: 23F197-02	Dilution Factor: 1
Lab File ID: LG07017A	Matrix: WATER
Ext Btch ID: 23DSG006W	% Moisture: NA
Calib. Ref.: LG07004A	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	0.433	0.500	87	60-130
Hexacosane	0.134	0.125	107	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 : P0reto Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 06/26/23 10:18
Project : 380-52637	Date Received: 06/29/23
Batch No. : 23F197	Date Extracted: 07/06/23 12:00
Sample ID : 380-52637-1	Date Analyzed: 07/07/23 22:06
Lab Samp ID: 23F197-01	Dilution Factor: 1
Lab File ID: LG07016A	Matrix: WATER
Ext Btch ID: 23DSG006W	% Moisture: NA
Calib. Ref.: LG07005A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.055	0.028	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.497	0.550	90	60-130
Hexacosane	0.158	0.138	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 : 910ml

Final Volume : 5ml

Prepared by : P0reto

Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 06/26/23 11:41
Project : 380-52637	Date Received: 06/29/23
Batch No. : 23F197	Date Extracted: 07/06/23 12:00
Sample ID : 380-52637-2	Date Analyzed: 07/07/23 22:25
Lab Samp ID: 23F197-02	Dilution Factor: 1
Lab File ID: LG07017A	Matrix: WATER
Ext Btch ID: 23DSG006W	% Moisture: NA
Calib. Ref.: LG07005A	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	0.433	0.500	87	60-130
Hexacosane	0.134	0.125	107	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 : P0reto Analyzed by : SDeeso

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QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/06/23 12:00
Project : 380-52637	Date Received: 07/06/23
Batch No. : 23F197	Date Extracted: 07/06/23 12:00
Sample ID : MBLK1W	Date Analyzed: 07/07/23 19:55
Lab Samp ID: DSG006WB	Dilution Factor: 1
Lab File ID: LG07009A	Matrix: WATER
Ext Btch ID: 23DSG006W	% Moisture: NA
Calib. Ref.: LG07003A	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	0.394	0.500	79	60-130
Hexacosane	0.140	0.125	112	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 : P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-52637
BATCH NO. : 23F197
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSG006WB	DSG006WL	DSG006WC
LAB FILE ID	: LG07009A	LG07010A	LG07011A
DATE PREPARED	: 07/06/23 12:00	07/06/23 12:00	07/06/23 12:00
DATE ANALYZED	: 07/07/23 19:55	07/07/23 20:14	07/07/23 20:32
PREP BATCH	: 23DSG006W	23DSG006W	23DSG006W
CALIBRATION REF:	LG07003A	LG07003A	LG07003A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.24	90	2.50	2.33	93	4	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.390	78	0.500	0.434	87	60-130
Hexacosane	0.125	0.138	110	0.125	0.136	109	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/06/23 12:00
Project : 380-52637	Date Received: 07/06/23
Batch No. : 23F197	Date Extracted: 07/06/23 12:00
Sample ID : MBLK1W	Date Analyzed: 07/07/23 19:55
Lab Samp ID: DSG006WB	Dilution Factor: 1
Lab File ID: LG07009A	Matrix: WATER
Ext Btch ID: 23DSG006W	% Moisture: NA
Calib. Ref.: LG07004A	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	0.394	0.500	79	60-130
Hexacosane	0.140	0.125	112	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 : P0reto Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-52637
BATCH NO. : 23F197
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W LCD1W
LAB SAMPLE ID : DSG006WB J5G006WL J5G006WC
LAB FILE ID : LG07009A LG07012A LG07013A
DATE PREPARED : 07/06/23 12:00 07/06/23 12:00 07/06/23 12:00
DATE ANALYZED : 07/07/23 19:55 07/07/23 20:51 07/07/23 21:10
PREP BATCH : 23DSG006W 23DSG006W 23DSG006W
CALIBRATION REF: LG07004A LG07004A LG07004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.50	1.92	77	2.50	2.07	83	8	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.354	71	0.500	0.427	85	60-130
Hexacosane	0.125	0.144	115	0.125	0.134	107	60-130

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

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/06/23 12:00
Project : 380-52637	Date Received: 07/06/23
Batch No. : 23F197	Date Extracted: 07/06/23 12:00
Sample ID : MBLK1W	Date Analyzed: 07/07/23 19:55
Lab Samp ID: DSG006WB	Dilution Factor: 1
Lab File ID: LG07009A	Matrix: WATER
Ext Btch ID: 23DSG006W	% Moisture: NA
Calib. Ref.: LG07005A	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	0.394	0.500	79	60-130
Hexacosane	0.140	0.125	112	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 : P0reto

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-52637
BATCH NO. : 23F197
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W LCD1W
LAB SAMPLE ID : DSG006WB J8G006WL J8G006WC
LAB FILE ID : LG07009A LG07014A LG07015A
DATE PREPARED : 07/06/23 12:00 07/06/23 12:00 07/06/23 12:00
DATE ANALYZED : 07/07/23 19:55 07/07/23 21:28 07/07/23 21:47
PREP BATCH : 23DSG006W 23DSG006W 23DSG006W
CALIBRATION REF: LG07005A LG07005A LG07005A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QLLimit (%)	MaxRPD (%)
JP8	ND	2.50	2.15	86	2.50	2.27	91	5	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QLLimit (%)
Bromobenzene	0.500	0.491	98	0.500	0.486	97	60-130
Hexacosane	0.125	0.135	108	0.125	0.132	106	60-130

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

Monrovia, CA (Suite 100)

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

Chain of Custody Record

Client Information			Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s): 380-27941-2757.2	COC No: 380-27941-2757.2					
Client Contact: Dr. Ron Fenstermacher			Phone: 808-748-5840	E-Mail: Rachele.Arada@et.euronisus.com	State of Origin:	Page: Page 1 of 2					
Company: City & County of Honolulu			PWSID:	Analysis Requested					Job #:		
Address: 630 South Beretania Street; Chemistry Lab			Due Date Requested:	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs SUBCONTRACT - 8015 Gas (Purgable) LL (EAL) SUBCONTRACT - 8915 Diesel LL (EAL) and Motor Oil 525.2_PREC - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 537.1_DW_PREC - 537.1 Full List 533 - All Analytes	Total Number of containers	Preservation Codes:					
City: Honolulu			TAT Requested (days):			A - HCL	M - Hexane	Other:			
State, Zip: HI, 96843			Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			B - NaOH	N - None				
Phone: 808-748-5091 (tel)			PO #: C20525101 exp 05312023			C - Zn Acetate	O - AsNaO2				
Email: rfenstemacher@hbws.org			WO #:			D - Nitric Acid	P - Na2O4S				
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill			Project #: 38001111			E - NaHSO4	Q - Na2SO3				
Site: SSOW#:			SSOW#:	F - MeOH	R - Na2S2O3						
Sample Identification			Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Special Instructions/Note:				
MOANALUA WELLS			26-Jun-2023	1018	G	Water	2	2	2	4	#11-7725 7598 3619
AIEA GULCH WELLS PUMP2			26-Jun-2023	1141	G	Water	2	2	2	4	(752A) 1.8°-0.2°-1.6° GEL-FROZEN
AIEA WELLS PUMPS 1&2 (260) P2			26-Jun-2023	1114	G	Water	2	2	2	4	#2-7725 7598 3550
HALAWA WELLS UNITS 1&2 P1			26-Jun-2023	1050	G	Water	2	2	2	4	(752A) 3.3°-0.2°-3.1° GEL-FROZEN
TB MOANALUA WELLS			26-Jun-2023	1018		Water				2	#3-7725 7598 4615
TB AIEA GULCH WELLS PUMP2			26-Jun-2023	1141		Water				2	(752A) 1.6°-0.2°-1.4° GEL-FROZEN
TB AIEA WELLS PUMPS 1&2 (260)			26-Jun-2023	1114		Water				2	#4-7725 7598 4648
TB HALAWA WELLS UNITS 1&2			26-Jun-2023	1050		Water				2	(752A) 7.7°-0.2°-7.5° GEL-FROZEN
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:			Date:	Time:	Method of Shipment: FED EX 4 COOLERS T						
Relinquished by: BAILEY			Date/Time: 27 JUNE 2023 1400	Company: HBWS	Received by: G. RETNER	Date/Time: 06/28/2023 09:40	Company: FEAP				
Relinquished by:			Date/Time:	Company:	Received by:	Date/Time:	Company:				
Relinquished by:			Date/Time:	Company:	Received by:	Date/Time:	Company:				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: (752A) -0.2° GEL-FROZEN ↑					

Monrovia, CA (Suite 100)

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

Chain of Custody Record



Client Information		Sampler: BAILEY		Lab PM: Arada, Rachele		Carrier Tracking No(s):		COC No: 380-27941-2757.2																					
Client Contact: Dr. Ron Fenstermacher		Phone: 808-748-5840		E-Mail: Rachele.Arada@et.euronisus.com		State of Origin:		Page: Page 2 of 2																					
Company: City & County of Honolulu		PWSID:		Analysis Requested						Job #:																			
Address: 630 South Beretania Street; Chemistry Lab		Due Date Requested:		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 - 8915 Diesel LL (EAL) and Motor Oil 525_2_PREC - (MOD) 525plus PLUS TICs SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL) 537_1_DW_PREC - 537.1 Full List 533 - All Analytes						Preservation Codes:																			
City: Honolulu		TAT Requested (days):								M - Hexane																			
State, Zip: HI, 96843		Compliance Project: Δ No								N - None																			
Phone: 808-748-5091 (tel)		PO #: C20525101 exp 05312023								O - AsNaO2																			
Email: rfenstermacher@hbws.org		WO #:								P - Na2O4S																			
Project Name: RED-HILL/HBWS sites Event Desc: RUSH Weekly Red Hill		Project #: 38001111		Q - Na2SO3																									
Site:		SSOW#:		R - Na2S2O3																									
				S - H2SO4																									
				T - TSP Dodecahydrate																									
				U - Acetone																									
				V - MCAA																									
				W - pH 4-5																									
				Y - Trizma																									
				Z - other (specify)																									
				Other:																									
				Total Number of containers																									
				Special Instructions/Note:																									
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		Yield		Other											
MOANALUA WELLS		26-Jun-2023		1018		G		Water						R		3		3											
AIEA GULCH WELLS PUMP2		26-Jun-2023		1141		G		Water						R		3		3											
AIEA WELLS PUMPS 1&2 (260) P2		26-Jun-2023		1114		G		Water						RA		3		3											
HALAWA WELLS UNITS 1&2 P1		26-Jun-2023		1050		G		Water						RA		3		3											
FB MOANALUA WELLS		26-Jun-2023		1018				Water								Y		1											
FB AIEA GULCH WELLS PUMP2		26-Jun-2023		1141				Water								Y		1											
FB AIEA WELLS PUMPS 1&2 (260)		26-Jun-2023		1114				Water								Y		1											
FB HALAWA WELLS UNITS 1&2		26-Jun-2023		1050				Water								Y		1											
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																			
Deliverable Requested: I, II, III, IV, Other (specify)										Special Instructions/QC Requirements:																			
Empty Kit Relinquished by:					Date:					Time:					Method of Shipment: FED EX 4 COOLERS ↑														
Relinquished by: BAILEY					Date/Time: 21 JUNE 2023 1000					Company: HBWS					Received by: G REITNER					Date/Time: 06/28/2023 09:40					Company: FEAP				
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) -0.2° GEL-FROZEN ↑																			

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-52637-2

Login Number: 52637
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.	False	1/4 cooler's temperature outside required temperature criteria.
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.	False	Two 8015 vials from one site were received broken. Refer to NCM for details.
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	

