

ANALYTICAL REPORT

PREPARED FOR

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City & County of Honolulu
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JOB DESCRIPTION

RED-HILL [SUBCONTRACT]
625, 8015
RUSH Weekly Red Hill

JOB NUMBER

380-83046-2

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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Authorized for release by
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Definitions/Glossary

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

Job ID: 380-83046-2
SDG: 625, 8015

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

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: RED-HILL [SUBCONTRACT]

Job ID: 380-83046-2

Job ID: 380-83046-2

Eurofins Eaton Analytical Pomona

Job Narrative 380-83046-2

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 2/14/2024 10:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.2°C, 2.0°C and 2.3°C.

Subcontract Work

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.

Gasoline Range Organics

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

GC Semi VOA

Method 8015B_DRO_LL_CS: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-411611. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8015B_DRO_LL_CS: The surrogate recovery for the blank associated with preparation batch 570-411611 and analytical batch 570-412489 was outside the upper control limits. All associated sample surrogates fell within acceptance criteria; therefore, the data have been reported.

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

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Detection Summary

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

Job ID: 380-83046-2
SDG: 625, 8015

Client Sample ID: MOANALUA WELLS
PWSID Number: HI0000331

Lab Sample ID: 380-83046-1

No Detections.

Client Sample ID: AIEA GULCH WELLS PUMP 2
PWSID Number: HI0000331

Lab Sample ID: 380-83046-2

No Detections.

Client Sample ID: AIEA WELLS PUMPS 1&2 (260) P2
PWSID Number: HI0000331

Lab Sample ID: 380-83046-3

No Detections.

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1
PWSID Number: HI0000331

Lab Sample ID: 380-83046-4

No Detections.

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-83046-5

No Detections.

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-83046-6

No Detections.

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

Lab Sample ID: 380-83046-7

No Detections.

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-83046-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-83046-1

Date Collected: 02/12/24 09:34

Matrix: Drinking Water

Date Received: 02/14/24 10:45

PWSID Number: HI0000331

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 17:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		38 - 134				02/20/24 17:36	1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<27		27	ug/L		02/16/24 19:46	02/21/24 00:00	1
Motor Oil Range Organics [C24-C36]	<27		27	ug/L		02/16/24 19:46	02/21/24 00:00	1
C8-C18	<27		27	ug/L		02/16/24 19:46	02/21/24 00:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	125		60 - 130			02/16/24 19:46	02/21/24 00:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Acenaphthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Biphenyl	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Chrysene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/19/24 00:00	03/22/24 18:32	1
Fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Fluorene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Naphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Phenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 18:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	96		27 - 133				02/19/24 00:00	03/22/24 18:32	1
(d10-Phenanthrene)	98		43 - 129				02/19/24 00:00	03/22/24 18:32	1
(d12-Chrysene)	109		52 - 144				02/19/24 00:00	03/22/24 18:32	1
(d12-Perylene)	110		36 - 161				02/19/24 00:00	03/22/24 18:32	1
(d8-Naphthalene)	89		25 - 125				02/19/24 00:00	03/22/24 18:32	1

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Client Sample Results

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

Job ID: 380-83046-2
SDG: 625, 8015

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-83046-2

Date Collected: 02/12/24 10:49

Matrix: Drinking Water

Date Received: 02/14/24 10:45

PWSID Number: HI0000331

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 18:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		38 - 134				02/20/24 18:02	1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<27		27	ug/L		02/16/24 19:46	02/21/24 00:21	1
Motor Oil Range Organics [C24-C36]	<27		27	ug/L		02/16/24 19:46	02/21/24 00:21	1
C8-C18	<27		27	ug/L		02/16/24 19:46	02/21/24 00:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	119		60 - 130			02/16/24 19:46	02/21/24 00:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Acenaphthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Biphenyl	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Chrysene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/19/24 00:00	03/22/24 20:21	1
Fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Fluorene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Naphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Phenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 20:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	88		27 - 133				02/19/24 00:00	03/22/24 20:21	1
(d10-Phenanthrene)	94		43 - 129				02/19/24 00:00	03/22/24 20:21	1
(d12-Chrysene)	100		52 - 144				02/19/24 00:00	03/22/24 20:21	1
(d12-Perylene)	104		36 - 161				02/19/24 00:00	03/22/24 20:21	1
(d8-Naphthalene)	79		25 - 125				02/19/24 00:00	03/22/24 20:21	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-83046-2
SDG: 625, 8015

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

Lab Sample ID: 380-83046-3

Date Collected: 02/12/24 11:16

Matrix: Drinking Water

Date Received: 02/14/24 10:45

PWSID Number: HI0000331

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 18:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		38 - 134				02/20/24 18:28	1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		02/16/24 19:46	02/21/24 00:42	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		02/16/24 19:46	02/21/24 00:42	1
C8-C18	<25		25	ug/L		02/16/24 19:46	02/21/24 00:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	121		60 - 130			02/16/24 19:46	02/21/24 00:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Acenaphthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Biphenyl	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Chrysene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/19/24 00:00	03/22/24 22:09	1
Fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Fluorene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Naphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Phenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 22:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	89		27 - 133				02/19/24 00:00	03/22/24 22:09	1
(d10-Phenanthrene)	97		43 - 129				02/19/24 00:00	03/22/24 22:09	1
(d12-Chrysene)	107		52 - 144				02/19/24 00:00	03/22/24 22:09	1
(d12-Perylene)	111		36 - 161				02/19/24 00:00	03/22/24 22:09	1
(d8-Naphthalene)	84		25 - 125				02/19/24 00:00	03/22/24 22:09	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-83046-2
SDG: 625, 8015

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-83046-4

Date Collected: 02/12/24 10:13

Matrix: Drinking Water

Date Received: 02/14/24 10:45

PWSID Number: HI0000331

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 18:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		38 - 134				02/20/24 18:54	1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		02/16/24 19:46	02/21/24 01:03	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		02/16/24 19:46	02/21/24 01:03	1
C8-C18	<25		25	ug/L		02/16/24 19:46	02/21/24 01:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	120		60 - 130			02/16/24 19:46	02/21/24 01:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Acenaphthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Biphenyl	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Chrysene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/19/24 00:00	03/22/24 23:58	1
Fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Fluorene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Naphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Phenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 23:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	87		27 - 133				02/19/24 00:00	03/22/24 23:58	1
(d10-Phenanthrene)	98		43 - 129				02/19/24 00:00	03/22/24 23:58	1
(d12-Chrysene)	109		52 - 144				02/19/24 00:00	03/22/24 23:58	1
(d12-Perylene)	109		36 - 161				02/19/24 00:00	03/22/24 23:58	1
(d8-Naphthalene)	85		25 - 125				02/19/24 00:00	03/22/24 23:58	1

Eurofins Eaton Analytical Pomona

Client Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-83046-5

Date Collected: 02/12/24 09:34

Matrix: Water

Date Received: 02/14/24 10:45

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 19:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		38 - 134				02/20/24 19:20	1

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-83046-6

Date Collected: 02/12/24 10:49

Matrix: Water

Date Received: 02/14/24 10:45

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 19:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		38 - 134				02/20/24 19:46	1

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

Lab Sample ID: 380-83046-7

Date Collected: 02/12/24 11:16

Matrix: Water

Date Received: 02/14/24 10:45

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 20:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		38 - 134				02/20/24 20:12	1

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-83046-8

Date Collected: 02/12/24 10:13

Matrix: Water

Date Received: 02/14/24 10:45

Method: SW846 8015B GRO LL - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 20:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		38 - 134				02/20/24 20:38	1

Surrogate Summary

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

Job ID: 380-83046-2
 SDG: 625, 8015

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-83046-1	MOANALUA WELLS	83
380-83046-1 MS	MOANALUA WELLS	93
380-83046-1 MSD	MOANALUA WELLS	94
380-83046-2	AIEA GULCH WELLS PUMP 2	84
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	84
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	85

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (38-134)
380-83046-5	TB MOANALUA WELLS	84
380-83046-6	TB AIEA GULCH WELLS PUMP 2	83
380-83046-7	TB AIEA WELLS PUMPS 1&2 (260) P2	84
380-83046-8	TB HALAWA WELLS UNITS 1 & 2 P1	84
LCS 570-412255/4	Lab Control Sample	86
LCSD 570-412255/5	Lab Control Sample Dup	85
MB 570-412255/6	Method Blank	81
MRL 570-412255/3	Lab Control Sample	81

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
380-83046-1	MOANALUA WELLS	125
380-83046-2	AIEA GULCH WELLS PUMP 2	119
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	121
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	120

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Surrogate Summary

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

Job ID: 380-83046-2
 SDG: 625, 8015

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1 (60-130)
LCS 570-411611/2-A	Lab Control Sample	126
LCSD 570-411611/3-A	Lab Control Sample Dup	126
MB 570-411611/1-A	Method Blank	132 S1+
MRL 570-411611/4-A	Lab Control Sample	118

Surrogate Legend

OTCSN = n-Octacosane (Surr)

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

Matrix: BlankMatrix

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

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)
115927-B1	Method Blank	92	98	91	92	107
115927-BS1	Lab Control Sample	89	100	92	83	102
115927-BS2	Lab Control Sample Dup	85	92	87	79	96

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

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

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

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)
380-83046-1	MOANALUA WELLS	96	98	109	89	110
380-83046-2	AIEA GULCH WELLS PUMP 2	88	94	100	79	104
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	89	97	107	84	111
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	87	98	109	85	109

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

QC Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-412255/6
Matrix: Water
Analysis Batch: 412255

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C10)	<10		10	ug/L			02/20/24 17:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		38 - 134				02/20/24 17:10	1

Lab Sample ID: LCS 570-412255/4
Matrix: Water
Analysis Batch: 412255

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	400	375		ug/L		94	78 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	86		38 - 134				

Lab Sample ID: LCSD 570-412255/5
Matrix: Water
Analysis Batch: 412255

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	400	371		ug/L		93	78 - 120	1	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	85		38 - 134						

Lab Sample ID: MRL 570-412255/3
Matrix: Water
Analysis Batch: 412255

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	10.0	11.5		ug/L		115	50 - 150
Surrogate	MRL %Recovery	MRL Qualifier	Limits				
4-Bromofluorobenzene (Surr)	81		38 - 134				

Lab Sample ID: 380-83046-1 MS
Matrix: Drinking Water
Analysis Batch: 412255

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	<10		400	346		ug/L		86	68 - 122
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	93		38 - 134						

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QC Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

Method: 8015B GRO LL - Gasoline Range Organics - (GC)

Lab Sample ID: 380-83046-1 MSD
Matrix: Drinking Water
Analysis Batch: 412255

Client Sample ID: MOANALUA WELLS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	<10		400	339		ug/L		85	68 - 122	2	18
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	94		38 - 134								

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Lab Sample ID: MB 570-411611/1-A
Matrix: Water
Analysis Batch: 412489

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 411611

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (C10-C24)	<25		25	ug/L		02/16/24 19:46	02/20/24 21:32	1
Motor Oil Range Organics [C24-C36]	<25		25	ug/L		02/16/24 19:46	02/20/24 21:32	1
C8-C18	<25		25	ug/L		02/16/24 19:46	02/20/24 21:32	1
Surrogate	%Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac		
n-Octacosane (Surr)	132	S1+	60 - 130	02/16/24 19:46	02/20/24 21:32	1		

Lab Sample ID: LCS 570-411611/2-A
Matrix: Water
Analysis Batch: 412489

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 411611

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	1600	1710		ug/L		107	56 - 127		
Surrogate	%Recovery	LCS Qualifier	LCS Limits						
n-Octacosane (Surr)	126		60 - 130						

Lab Sample ID: LCSD 570-411611/3-A
Matrix: Water
Analysis Batch: 412489

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 411611

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	1600	1740		ug/L		109	56 - 127	2	23
Surrogate	%Recovery	LCSD Qualifier	LCSD Limits						
n-Octacosane (Surr)	126		60 - 130						

Lab Sample ID: MRL 570-411611/4-A
Matrix: Water
Analysis Batch: 412489

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 411611

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	0.0200	<0.020		mg/L		66	50 - 150		

QC Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

Lab Sample ID: MRL 570-411611/4-A
 Matrix: Water
 Analysis Batch: 412489

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 411611

Surrogate	%Recovery	MRL MRL Qualifier	Limits
<i>n</i> -Octacosane (Surr)	118		60 - 130

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

Lab Sample ID: 115927-B1
 Matrix: BlankMatrix
 Analysis Batch: O-44124

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: O-44124_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Acenaphthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Biphenyl	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Chrysene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/19/24 00:00	03/22/24 13:04	1
Fluoranthene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Fluorene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Naphthalene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Perylene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Phenanthrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1
Pyrene	ND		0.005	0.001	µg/L		02/19/24 00:00	03/22/24 13:04	1

Surrogate	%Recovery	Blank Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	92		27 - 133	02/19/24 00:00	03/22/24 13:04	1
(d10-Phenanthrene)	98		43 - 129	02/19/24 00:00	03/22/24 13:04	1
(d12-Chrysene)	91		52 - 144	02/19/24 00:00	03/22/24 13:04	1
(d12-Perylene)	107		36 - 161	02/19/24 00:00	03/22/24 13:04	1
(d8-Naphthalene)	92		25 - 125	02/19/24 00:00	03/22/24 13:04	1

QC Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

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

Lab Sample ID: 115927-BS1
Matrix: BlankMatrix
Analysis Batch: O-44124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-44124_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.472		µg/L		94	31 - 128
1-Methylphenanthrene	0.5	0.529		µg/L		106	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.502		µg/L		100	55 - 122
2,6-Dimethylnaphthalene	0.5	0.487		µg/L		97	48 - 120
2-Methylnaphthalene	0.5	0.469		µg/L		94	47 - 130
Acenaphthene	0.5	0.485		µg/L		97	53 - 131
Acenaphthylene	0.5	0.536		µg/L		107	43 - 140
Anthracene	0.5	0.551		µg/L		110	58 - 135
Benz[a]anthracene	0.5	0.481		µg/L		96	55 - 145
Benzo[a]pyrene	0.5	0.543		µg/L		109	51 - 143
Benzo[b]fluoranthene	0.5	0.583		µg/L		117	46 - 165
Benzo[e]pyrene	0.5	0.478		µg/L		96	42 - 152
Benzo[g,h,i]perylene	0.5	0.547		µg/L		109	63 - 133
Benzo[k]fluoranthene	0.5	0.592		µg/L		118	56 - 145
Biphenyl	0.5	0.497		µg/L		99	56 - 119
Chrysene	0.5	0.609		µg/L		122	56 - 141
Dibenz[a,h]anthracene	0.5	0.563		µg/L		113	55 - 150
Dibenzo[a,l]pyrene	0.5	0.38		µg/L		76	50 - 150
Dibenzothiophene	0.5	0.533		µg/L		107	46 - 126
Disalicylidenepropanediamine	50	50.4		µg/L		101	50 - 150
Fluoranthene	0.5	0.545		µg/L		109	60 - 146
Fluorene	0.5	0.515		µg/L		103	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.524		µg/L		105	50 - 151
Naphthalene	0.5	0.462		µg/L		92	41 - 126
Perylene	0.5	0.554		µg/L		111	48 - 141
Phenanthrene	0.5	0.55		µg/L		110	67 - 127
Pyrene	0.5	0.548		µg/L		110	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	89		27 - 133
(d10-Phenanthrene)	100		43 - 129
(d12-Chrysene)	92		52 - 144
(d12-Perylene)	102		36 - 161
(d8-Naphthalene)	83		25 - 125

Lab Sample ID: 115927-BS2
Matrix: BlankMatrix
Analysis Batch: O-44124

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-44124_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.461		µg/L		92	31 - 128	2	30
1-Methylphenanthrene	0.5	0.5		µg/L		100	66 - 127	6	30
2,3,5-Trimethylnaphthalene	0.5	0.488		µg/L		98	55 - 122	2	30
2,6-Dimethylnaphthalene	0.5	0.481		µg/L		96	48 - 120	1	30
2-Methylnaphthalene	0.5	0.461		µg/L		92	47 - 130	2	30
Acenaphthene	0.5	0.488		µg/L		98	53 - 131	1	30
Acenaphthylene	0.5	0.546		µg/L		109	43 - 140	2	30
Anthracene	0.5	0.535		µg/L		107	58 - 135	3	30

Eurofins Eaton Analytical Pomona

QC Sample Results

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

Job ID: 380-83046-2
 SDG: 625, 8015

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

Lab Sample ID: 115927-BS2
Matrix: BlankMatrix
Analysis Batch: O-44124

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-44124_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Benz[a]anthracene	0.5	0.468		µg/L		94	55 - 145	2	30	
Benzo[a]pyrene	0.5	0.523		µg/L		105	51 - 143	4	30	
Benzo[b]fluoranthene	0.5	0.559		µg/L		112	46 - 165	4	30	
Benzo[e]pyrene	0.5	0.458		µg/L		92	42 - 152	4	30	
Benzo[g,h,i]perylene	0.5	0.532		µg/L		106	63 - 133	3	30	
Benzo[k]fluoranthene	0.5	0.567		µg/L		113	56 - 145	4	30	
Biphenyl	0.5	0.478		µg/L		96	56 - 119	3	30	
Chrysene	0.5	0.567		µg/L		113	56 - 141	8	30	
Dibenz[a,h]anthracene	0.5	0.56		µg/L		112	55 - 150	1	30	
Dibenzo[a,l]pyrene	0.5	0.38		µg/L		76	50 - 150	0	30	
Dibenzothiophene	0.5	0.506		µg/L		101	46 - 126	6	30	
Disalicylidenepropanediamine	50	51.2		µg/L		102	50 - 150	1	30	
Fluoranthene	0.5	0.513		µg/L		103	60 - 146	6	30	
Fluorene	0.5	0.503		µg/L		101	58 - 131	2	30	
Indeno[1,2,3-cd]pyrene	0.5	0.524		µg/L		105	50 - 151	0	30	
Naphthalene	0.5	0.445		µg/L		89	41 - 126	3	30	
Perylene	0.5	0.541		µg/L		108	48 - 141	3	30	
Phenanthrene	0.5	0.519		µg/L		104	67 - 127	6	30	
Pyrene	0.5	0.513		µg/L		103	54 - 156	7	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	85		27 - 133
(d10-Phenanthrene)	92		43 - 129
(d12-Chrysene)	87		52 - 144
(d12-Perylene)	96		36 - 161
(d8-Naphthalene)	79		25 - 125

QC Association Summary

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

Job ID: 380-83046-2
 SDG: 625, 8015

GC VOA

Analysis Batch: 412255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-83046-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-83046-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B GRO LL	
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B GRO LL	
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B GRO LL	
380-83046-5	TB MOANALUA WELLS	Total/NA	Water	8015B GRO LL	
380-83046-6	TB AIEA GULCH WELLS PUMP 2	Total/NA	Water	8015B GRO LL	
380-83046-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Water	8015B GRO LL	
380-83046-8	TB HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Water	8015B GRO LL	
MB 570-412255/6	Method Blank	Total/NA	Water	8015B GRO LL	
LCS 570-412255/4	Lab Control Sample	Total/NA	Water	8015B GRO LL	
LCSD 570-412255/5	Lab Control Sample Dup	Total/NA	Water	8015B GRO LL	
MRL 570-412255/3	Lab Control Sample	Total/NA	Water	8015B GRO LL	
380-83046-1 MS	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	
380-83046-1 MSD	MOANALUA WELLS	Total/NA	Drinking Water	8015B GRO LL	

GC Semi VOA

Prep Batch: 411611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-83046-1	MOANALUA WELLS	Total/NA	Drinking Water	3510C	
380-83046-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	3510C	
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	3510C	
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	3510C	
MB 570-411611/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-411611/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-411611/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MRL 570-411611/4-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 412489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-83046-1	MOANALUA WELLS	Total/NA	Drinking Water	8015B	411611
380-83046-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	8015B	411611
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	8015B	411611
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	8015B	411611
MB 570-411611/1-A	Method Blank	Total/NA	Water	8015B	411611
LCS 570-411611/2-A	Lab Control Sample	Total/NA	Water	8015B	411611
LCSD 570-411611/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	411611
MRL 570-411611/4-A	Lab Control Sample	Total/NA	Water	8015B	411611

Subcontract

Analysis Batch: O-44124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-83046-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44124_P
380-83046-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44124_P
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44124_P
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-44124_P
115927-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44124_P

Eurofins Eaton Analytical Pomona

QC Association Summary

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

Job ID: 380-83046-2
 SDG: 625, 8015

Subcontract (Continued)

Analysis Batch: O-44124 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
115927-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44124_P
115927-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-44124_P

Prep Batch: O-44124_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-83046-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
380-83046-2	AIEA GULCH WELLS PUMP 2	Total/NA	Drinking Water	EPA_625	
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	Total/NA	Drinking Water	EPA_625	
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	Total/NA	Drinking Water	EPA_625	
115927-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
115927-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
115927-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	



Lab Chronicle

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

Job ID: 380-83046-2
 SDG: 625, 8015

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-83046-1

Date Collected: 02/12/24 09:34

Matrix: Drinking Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 17:36
Total/NA	Prep	3510C			411611	JC	EET CAL 4	02/16/24 19:46
Total/NA	Analysis	8015B		1	412489	SP9M	EET CAL 4	02/21/24 00:00
Total/NA	Prep	EPA_625		1	O-44124_P			02/19/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44124	YC		03/22/24 18:32

Client Sample ID: AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-83046-2

Date Collected: 02/12/24 10:49

Matrix: Drinking Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 18:02
Total/NA	Prep	3510C			411611	JC	EET CAL 4	02/16/24 19:46
Total/NA	Analysis	8015B		1	412489	SP9M	EET CAL 4	02/21/24 00:21
Total/NA	Prep	EPA_625		1	O-44124_P			02/19/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44124	YC		03/22/24 20:21

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

Lab Sample ID: 380-83046-3

Date Collected: 02/12/24 11:16

Matrix: Drinking Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 18:28
Total/NA	Prep	3510C			411611	JC	EET CAL 4	02/16/24 19:46
Total/NA	Analysis	8015B		1	412489	SP9M	EET CAL 4	02/21/24 00:42
Total/NA	Prep	EPA_625		1	O-44124_P			02/19/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44124	YC		03/22/24 22:09

Client Sample ID: HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-83046-4

Date Collected: 02/12/24 10:13

Matrix: Drinking Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 18:54
Total/NA	Prep	3510C			411611	JC	EET CAL 4	02/16/24 19:46
Total/NA	Analysis	8015B		1	412489	SP9M	EET CAL 4	02/21/24 01:03
Total/NA	Prep	EPA_625		1	O-44124_P			02/19/24 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-44124	YC		03/22/24 23:58

Lab Chronicle

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

Job ID: 380-83046-2
SDG: 625, 8015

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-83046-5

Date Collected: 02/12/24 09:34

Matrix: Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 19:20

Client Sample ID: TB AIEA GULCH WELLS PUMP 2

Lab Sample ID: 380-83046-6

Date Collected: 02/12/24 10:49

Matrix: Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 19:46

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

Lab Sample ID: 380-83046-7

Date Collected: 02/12/24 11:16

Matrix: Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 20:12

Client Sample ID: TB HALAWA WELLS UNITS 1 & 2 P1

Lab Sample ID: 380-83046-8

Date Collected: 02/12/24 10:13

Matrix: Water

Date Received: 02/14/24 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015B GRO LL		1	412255	A9VE	EET CAL 4	02/20/24 20:38

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

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

Job ID: 380-83046-2
SDG: 625, 8015

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-24
California	Los Angeles County Sanitation Districts	10109	08-01-24
California	State	3082	07-31-24
Kansas	NELAP	E-10420	08-01-24
Nevada	State	CA00111	07-31-24
Oregon	NELAP	4175	02-03-25
USDA	US Federal Programs	P330-22-00059	06-08-26
Washington	State	C916-18	10-11-24

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Method Summary

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

Job ID: 380-83046-2
SDG: 625, 8015

Method	Method Description	Protocol	Laboratory
8015B GRO LL	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	EET CAL 4
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4

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

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494



Sample Summary

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

Job ID: 380-83046-2
 SDG: 625, 8015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
380-83046-1	MOANALUA WELLS	Drinking Water	02/12/24 09:34	02/14/24 10:45	HI0000331
380-83046-2	AIEA GULCH WELLS PUMP 2	Drinking Water	02/12/24 10:49	02/14/24 10:45	HI0000331
380-83046-3	AIEA WELLS PUMPS 1&2 (260) P2	Drinking Water	02/12/24 11:16	02/14/24 10:45	HI0000331
380-83046-4	HALAWA WELLS UNITS 1 & 2 P1	Drinking Water	02/12/24 10:13	02/14/24 10:45	HI0000331
380-83046-5	TB MOANALUA WELLS	Water	02/12/24 09:34	02/14/24 10:45	
380-83046-6	TB AIEA GULCH WELLS PUMP 2	Water	02/12/24 10:49	02/14/24 10:45	
380-83046-7	TB AIEA WELLS PUMPS 1&2 (260) P2	Water	02/12/24 11:16	02/14/24 10:45	
380-83046-8	TB HALAWA WELLS UNITS 1 & 2 P1	Water	02/12/24 10:13	02/14/24 10:45	

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March 25, 2024

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

Project Name: RED-HILL Project # 38001111 Job # 380-83046-1
 Physis Project ID: 1407003-487

Dear Rachelle,

Enclosed are the analytical results for samples submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 2/15/2024. 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,

Rachel Hansen
 714 602-5320
 Extension 203
 rachelhansen@physislabs.com



PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-487

RED-HILL Project # 38001111 Job # 380-83046-1

Total Samples: 4

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
115928	MOANALUA WELLS	380-83046-1	2/12/2024	9:34	Samplewater	Not Specified
115929	AIEA GULCH WELLS PUMP 2	380-83046-2	2/12/2024	10:49	Samplewater	Not Specified
115930	AIEA WELLS PUMPS 1&2 (260) P2	380-83046-3	2/12/2024	11:16	Samplewater	Not Specified
115931	HALAWA WELLS UNITS 1 & 2 P1	380-83046-4	2/12/2024	10:13	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.

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.

ANALYTICAL REPORT

TERRA AURA ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

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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: 115928-R1 MOANALUA WELLS 380-83046-1 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44124	19-Feb-24	22-Mar-24
Sample ID: 115929-R1 AIEA GULCH WELLS PUMP 2 380-8 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44124	19-Feb-24	22-Mar-24
Sample ID: 115930-R1 AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44124	19-Feb-24	22-Mar-24
Sample ID: 115931-R1 HALAWA WELLS UNITS 1 & 2 P1 38 Matrix: Samplewater											
Disalicylideneprapanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-44124	19-Feb-24	22-Mar-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 115928-R1	MOANALUA WELLS 380-83046-1	Matrix: Samplewater					Sampled:	12-Feb-24	9:34	Received:	15-Feb-24
(d10-Acenaphthene)	EPA 625.1	% Recovery	96	1			Total		O-44124	19-Feb-24	22-Mar-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	98	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Chrysene)	EPA 625.1	% Recovery	109	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Perylene)	EPA 625.1	% Recovery	110	1			Total		O-44124	19-Feb-24	22-Mar-24
(d8-Naphthalene)	EPA 625.1	% Recovery	89	1			Total		O-44124	19-Feb-24	22-Mar-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24

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-44124	19-Feb-24	22-Mar-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 115929-R1	AIEA GULCH WELLS PUMP 2 380-8 Matrix: Samplewater						Sampled:	12-Feb-24 10:49	Received:	15-Feb-24	
(d10-Acenaphthene)	EPA 625.1	% Recovery	88	1			Total		O-44124	19-Feb-24	22-Mar-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	94	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Chrysene)	EPA 625.1	% Recovery	100	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Perylene)	EPA 625.1	% Recovery	104	1			Total		O-44124	19-Feb-24	22-Mar-24
(d8-Naphthalene)	EPA 625.1	% Recovery	79	1			Total		O-44124	19-Feb-24	22-Mar-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24

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-44124	19-Feb-24	22-Mar-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 115930-R1	AIEA WELLS PUMPS 1&2 (260) P2 3 Matrix: Samplewater						Sampled:	12-Feb-24	11:16	Received:	15-Feb-24
(d10-Acenaphthene)	EPA 625.1	% Recovery	89	1			Total		O-44124	19-Feb-24	22-Mar-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	97	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Chrysene)	EPA 625.1	% Recovery	107	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Perylene)	EPA 625.1	% Recovery	111	1			Total		O-44124	19-Feb-24	22-Mar-24
(d8-Naphthalene)	EPA 625.1	% Recovery	84	1			Total		O-44124	19-Feb-24	22-Mar-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24

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-44124	19-Feb-24	22-Mar-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 115931-R1	HALAWA WELLS UNITS 1 & 2 P1 38 Matrix: Samplewater						Sampled:	12-Feb-24 10:13	Received:	15-Feb-24	
(d10-Acenaphthene)	EPA 625.1	% Recovery	87	1			Total		O-44124	19-Feb-24	22-Mar-24
(d10-Phenanthrene)	EPA 625.1	% Recovery	98	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Chrysene)	EPA 625.1	% Recovery	109	1			Total		O-44124	19-Feb-24	22-Mar-24
(d12-Perylene)	EPA 625.1	% Recovery	109	1			Total		O-44124	19-Feb-24	22-Mar-24
(d8-Naphthalene)	EPA 625.1	% Recovery	85	1			Total		O-44124	19-Feb-24	22-Mar-24
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Dibenzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24

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-44124	19-Feb-24	22-Mar-24
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-44124	19-Feb-24	22-Mar-24



QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

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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: 115927-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-44124			Prepared: 19-Feb-24		Analyzed: 22-Mar-24			
Disalicylideneprapanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 115927-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-44124			Prepared: 19-Feb-24		Analyzed: 22-Mar-24			
Disalicylideneprapanediamin	Total	50.4	1	0.05	0.1	µg/L	50	0	101	50 - 150%	PASS		
Sample ID: 115927-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-44124			Prepared: 19-Feb-24		Analyzed: 22-Mar-24			
Disalicylideneprapanediamin	Total	51.2	1	0.05	0.1	µg/L	50	0	102	50 - 150%	PASS	1	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: 115927-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
		Method: EPA 625.1				Batch ID: O-44124	Prepared: 19-Feb-24		Analyzed: 22-Mar-24		
(d10-Acenaphthene)	Total	92	1			% Recovery	100	92	27 - 133%	PASS	
(d10-Phenanthrene)	Total	98	1			% Recovery	100	98	43 - 129%	PASS	
(d12-Chrysene)	Total	91	1			% Recovery	100	91	52 - 144%	PASS	
(d12-Perylene)	Total	107	1			% Recovery	100	107	36 - 161%	PASS	
(d8-Naphthalene)	Total	92	1			% Recovery	100	92	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					

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

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



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 115927-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-44124			Prepared: 19-Feb-24		Analyzed: 22-Mar-24					
(d10-Acenaphthene)	Total	89	1			% Recovery	100	0	89	27 - 133%	PASS	
(d10-Phenanthrene)	Total	100	1			% Recovery	100	0	100	43 - 129%	PASS	
(d12-Chrysene)	Total	92	1			% Recovery	100	0	92	52 - 144%	PASS	
(d12-Perylene)	Total	102	1			% Recovery	100	0	102	36 - 161%	PASS	
(d8-Naphthalene)	Total	83	1			% Recovery	100	0	83	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.472	1	0.001	0.005	µg/L	0.5	0	94	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.529	1	0.001	0.005	µg/L	0.5	0	106	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.502	1	0.001	0.005	µg/L	0.5	0	100	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.487	1	0.001	0.005	µg/L	0.5	0	97	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.469	1	0.001	0.005	µg/L	0.5	0	94	47 - 130%	PASS	
Acenaphthene	Total	0.485	1	0.001	0.005	µg/L	0.5	0	97	53 - 131%	PASS	
Acenaphthylene	Total	0.536	1	0.001	0.005	µg/L	0.5	0	107	43 - 140%	PASS	
Anthracene	Total	0.551	1	0.001	0.005	µg/L	0.5	0	110	58 - 135%	PASS	
Benz[a]anthracene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.543	1	0.001	0.005	µg/L	0.5	0	109	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.583	1	0.001	0.005	µg/L	0.5	0	117	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.547	1	0.001	0.005	µg/L	0.5	0	109	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.592	1	0.001	0.005	µg/L	0.5	0	118	56 - 145%	PASS	
Biphenyl	Total	0.497	1	0.001	0.005	µg/L	0.5	0	99	56 - 119%	PASS	
Chrysene	Total	0.609	1	0.001	0.005	µg/L	0.5	0	122	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.563	1	0.001	0.005	µg/L	0.5	0	113	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.38	1	0.001	0.005	µg/L	0.5	0	76	50 - 150%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Dibenzothiophene	Total	0.533	1	0.001	0.005	µg/L	0.5	0	107	46 - 126%	PASS		
Fluoranthene	Total	0.545	1	0.001	0.005	µg/L	0.5	0	109	60 - 146%	PASS		
Fluorene	Total	0.515	1	0.001	0.005	µg/L	0.5	0	103	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	50 - 151%	PASS		
Naphthalene	Total	0.462	1	0.001	0.005	µg/L	0.5	0	92	41 - 126%	PASS		
Perylene	Total	0.554	1	0.001	0.005	µg/L	0.5	0	111	48 - 141%	PASS		
Phenanthrene	Total	0.55	1	0.001	0.005	µg/L	0.5	0	110	67 - 127%	PASS		
Pyrene	Total	0.548	1	0.001	0.005	µg/L	0.5	0	110	54 - 156%	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: 115927-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:			
		Method: EPA 625.1			Batch ID: O-44124			Prepared: 19-Feb-24			Analyzed: 22-Mar-24			
(d10-Acenaphthene)	Total	85	1			% Recovery	100	0	85	27 - 133%	PASS	5	30	PASS
(d10-Phenanthrene)	Total	92	1			% Recovery	100	0	92	43 - 129%	PASS	8	30	PASS
(d12-Chrysene)	Total	87	1			% Recovery	100	0	87	52 - 144%	PASS	6	30	PASS
(d12-Perylene)	Total	96	1			% Recovery	100	0	96	36 - 161%	PASS	6	30	PASS
(d8-Naphthalene)	Total	79	1			% Recovery	100	0	79	25 - 125%	PASS	5	30	PASS
1-Methylnaphthalene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	31 - 128%	PASS	2	30	PASS
1-Methylphenanthrene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	66 - 127%	PASS	6	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.488	1	0.001	0.005	µg/L	0.5	0	98	55 - 122%	PASS	2	30	PASS
2,6-Dimethylnaphthalene	Total	0.481	1	0.001	0.005	µg/L	0.5	0	96	48 - 120%	PASS	1	30	PASS
2-Methylnaphthalene	Total	0.461	1	0.001	0.005	µg/L	0.5	0	92	47 - 130%	PASS	2	30	PASS
Acenaphthene	Total	0.488	1	0.001	0.005	µg/L	0.5	0	98	53 - 131%	PASS	1	30	PASS
Acenaphthylene	Total	0.546	1	0.001	0.005	µg/L	0.5	0	109	43 - 140%	PASS	2	30	PASS
Anthracene	Total	0.535	1	0.001	0.005	µg/L	0.5	0	107	58 - 135%	PASS	3	30	PASS
Benz[a]anthracene	Total	0.468	1	0.001	0.005	µg/L	0.5	0	94	55 - 145%	PASS	2	30	PASS
Benzo[a]pyrene	Total	0.523	1	0.001	0.005	µg/L	0.5	0	105	51 - 143%	PASS	4	30	PASS
Benzo[b]fluoranthene	Total	0.559	1	0.001	0.005	µg/L	0.5	0	112	46 - 165%	PASS	4	30	PASS
Benzo[e]pyrene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	42 - 152%	PASS	4	30	PASS
Benzo[g,h,i]perylene	Total	0.532	1	0.001	0.005	µg/L	0.5	0	106	63 - 133%	PASS	3	30	PASS
Benzo[k]fluoranthene	Total	0.567	1	0.001	0.005	µg/L	0.5	0	113	56 - 145%	PASS	4	30	PASS
Biphenyl	Total	0.478	1	0.001	0.005	µg/L	0.5	0	96	56 - 119%	PASS	3	30	PASS
Chrysene	Total	0.567	1	0.001	0.005	µg/L	0.5	0	113	56 - 141%	PASS	8	30	PASS
Dibenz[a,h]anthracene	Total	0.56	1	0.001	0.005	µg/L	0.5	0	112	55 - 150%	PASS	1	30	PASS
Dibenzo[a,l]pyrene	Total	0.38	1	0.001	0.005	µg/L	0.5	0	76	50 - 150%	PASS	0	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		
Dibenzothiophene	Total	0.506	1	0.001	0.005	µg/L	0.5	0	101	46 - 126%	PASS	6	30	PASS
Fluoranthene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	60 - 146%	PASS	6	30	PASS
Fluorene	Total	0.503	1	0.001	0.005	µg/L	0.5	0	101	58 - 131%	PASS	2	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	50 - 151%	PASS	0	30	PASS
Naphthalene	Total	0.445	1	0.001	0.005	µg/L	0.5	0	89	41 - 126%	PASS	3	30	PASS
Perylene	Total	0.541	1	0.001	0.005	µg/L	0.5	0	108	48 - 141%	PASS	3	30	PASS
Phenanthrene	Total	0.519	1	0.001	0.005	µg/L	0.5	0	104	67 - 127%	PASS	6	30	PASS
Pyrene	Total	0.513	1	0.001	0.005	µg/L	0.5	0	103	54 - 156%	PASS	7	30	PASS

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PHYSIS
TENTATIVELY
IDENTIFIED COMPOUNDS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

Sample ID: Lab Blank B1_44124

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5440	4.7357	1111	Anthracene-D10-	1719-06-8	98
10.0797	1.8938	444	Ethane, 1,1,2,2-tetrachloro-	79-34-5	94
10.4822	1.2184	286	Hydroperoxide, 1-ethylbutyl	24254-56-6	93
12.3208	1.1331	266	2-(Chloromethyl)tetrahydropyran	18420-41-2	87
10.8510	1.1245	264	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	81
12.0575	0.9992	234	2H-Pyran-2-methanol, tetrahydro-	100-72-1	84
13.0116	0.6724	158	2,6-Octadiene, 2,4-dimethyl-	63843-03-8	84
11.2100	0.5497	129	Cyclopropane, 1,1,2,3-tetramethyl-	74752-93-5	91
25.3613	0.4559	107	Benzoic acid, 4-ethoxy-, ethyl ester	23676-09-7	99
13.3454	0.4150	97	Octane, 4,5-diethyl-	1636-41-5	82

Concentration estimated using the response for Anthracene-d10

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Sample ID: 115930

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5434	4.8016	1111	Anthracene-D10-	1719-06-8	98
10.8553	1.4956	346	3-Hexene-2,5-diol	7319-23-5	82
10.4842	1.2602	292	Hydroperoxide, 1-ethylbutyl	24254-56-6	94
10.0860	1.0032	232	Ethane, 1,1,2,2-tetrachloro-	79-34-5	98
12.3177	0.7814	181	2-(Chloromethyl)tetrahydropyran	18420-41-2	86
13.0076	0.5209	121	1-Pentyn-3-ol, 3-ethyl-	1601750	83
11.2104	0.5087	118	Cyclopropane, 1,1,2,3-tetramethyl-	74752-93-5	92
12.9464	0.4267	99	Cyclohexane, (2-nitro-2-propenyl)-	80255-17-0	85

Concentration estimated using the response for Anthracene-d10

Sample ID: 115929

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5433	4.2069	1111	Anthracene-D10-	1719-06-8	98
10.4886	1.6307	431	Hydroperoxide, 1-ethylbutyl	24254-56-6	94
10.8573	1.3108	346	Cyclobutanecarboxylic acid, 2-propenyl ester	1000282-60-3	81
10.6127	1.2851	339	Hydroperoxide, 1-methylpentyl	24254-55-5	92
11.2093	0.7341	194	Cyclopropane, 1,1,2,3-tetramethyl-	74752-93-5	92
67.8931	0.4380	116	1,4-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	6422-86-2	95
18.1855	0.4380	116	1,3-Dioxolane	646-06-0	85

Concentration estimated using the response for Anthracene-d10

Sample ID: 115928

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5435	5.1204	1111	Anthracene-D10-	1719-06-8	98
10.4888	1.8147	394	Hydroperoxide, 1-ethylbutyl	24254-56-6	93
10.8572	1.5809	343	Cyclobutanecarboxylic acid, 2-propenyl ester	1000282-60-3	82
11.2093	0.9703	211	Cyclopropane, 1,1,2,3-tetramethyl-	74752-93-5	91

Concentration estimated using the response for Anthracene-d10

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Sample ID: 115931

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.5443	4.8510	1111	Anthracene-D10-	1719-06-8	98
10.4865	1.4041	322	Hydroperoxide, 1-ethylbutyl	24254-56-6	94
10.8568	1.1880	272	3-Hexene-2,5-diol	7319-23-5	83
11.2105	0.6448	148	Cyclopropane, 1,1,2,3-tetramethyl-	74752-93-5	92
10.0895	0.6001	137	Ethane, 1,1,2,2-tetrachloro-	79-34-5	93
12.0520	0.5363	123	2H-Pyran-2-methanol, tetrahydro-	100-72-1	80
12.3160	0.4626	106	2-(Chloromethyl)tetrahydropyran	18420-41-2	86
12.0530	0.4190	96	2H-Pyran-2-methanol, tetrahydro-	100-72-1	81

Concentration estimated using the response for Anthracene-d10

PERFORMANCE CHAIN OF CUSTODY

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Eurofins Eaton Analytical Pomona

941 Corporate Center Drive
Pomona, CA 91768-2642
Phone: 626-396-1100

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Arada, Rachelle	Lab P#: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-107446.1
Client Contact:	Phone:	E-Mail:	Rachelle.Arada@et.eurofins.com	State of Origin:	Hawaii	Page: 1 of 1
Shipping/Receiving:	Company:		Physis Environmental Laboratories		Accreditations Required (See note):	State - Hawaii
Address:	1904 Wright Circle,	Due Date Requested:	3/4/2024	Analysis Requested		
City:	Anaheim	TAT Requested (days):				
State, Zip:	CA, 92806	PO #:				
Phone:		W/O #:				
Email:		Project #:	38001111			
Project Name:	RED-HILL	SSOW#:				
Site:	Honolulu BWS Sites					

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Weigher, Sorbid, Orwashold, B-Triana, A-Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
MOANALUA WELLS (380-83046-1)	2/12/24	09:34		Water	X		2	See Attached Instructions
AIEA GULCH WELLS PUMP 2 (380-83046-2)	2/12/24	10:49		Water	X		2	See Attached Instructions
AIEA WELLS PUMPS 1&2 (260) P2 (380-83046-3)	2/12/24	11:16		Water	X		2	See Attached Instructions
HALAWA WELLS UNITS 1 & 2 P1 (380-83046-4)	2/12/24	10:13		Water	X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analysis & 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/test/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

Special Instructions/QC Requirements: _____

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

Return To Client Disposal By Lab Archive For _____ Months

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>Xan</i>	Date/Time: 2/15/24 11:50	Company: <i>Physis</i>	Received by: <i>[Signature]</i>
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

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

Project Iteration ID: 1407003-487
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-83046-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: CR
2. Date Received: 2/15/2024
3. Time Received: 1150
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): 20c Used I/R Thermometer # _____

Inspection Info

1. Initials Inspected By: CR

Sample Integrity Upon Receipt:

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

Notes:

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

Chain of Custody Record

eurofins
 Page 1 of 4

<p>Client Information Client Contact: Dr Ron Fenstermacher City & County of Honolulu Address: 630 South Beretania Street, Chemistry Lab City: Honolulu State: Zi HI, 96843 Phone: 808-748-5091 (tel) Email: rfenstermacher@hbws.org Project Name: RED-HILL/HBWS sites Event Desc. RUSH Weekly Red Hill Site: 38001111</p>			<p>Sampler: <i>bailey</i> Lab P/M: Arada Rachelle E-Mail: Rachelle.Arada@et.eurofins.com Phone: 808-748-5840 State of Origin: _____</p>		<p>COC No: 380-27984-2757.2 Page: Page 1 of 4 Job #:</p>																																			
<p>Due Date Requested: _____ TAT Requested (days): _____ Compliance Project: Δ No PO #: C20525101 exp 05312023 WG #: _____ Project #: 38001111 SSOW#: _____</p>			Analysis Requested																																					
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: center;">Perform MS/MSD (Yes or No)</td> <td style="width: 30%; text-align: center;">R</td> <td style="width: 30%; text-align: center;">A</td> <td style="width: 30%; text-align: center;">Q</td> <td style="width: 30%; text-align: center;">N</td> <td style="width: 30%;"></td> </tr> <tr> <td style="font-size: 8px;">SBBCONTRACT - 625 PAH Physis LL (EAL) + TICS</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="font-size: 8px;">533 - All Analytes</td> </tr> <tr> <td style="font-size: 8px;">8015B_GRO_LL - (MOD) GRO</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="font-size: 8px;">525.2_PREC - (MOD) 525plus PLUS TICS</td> </tr> <tr> <td style="font-size: 8px;">8015B_DR0_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="font-size: 8px;">537.1_DW_PREC - 537.1 Full List</td> </tr> </table>		Perform MS/MSD (Yes or No)	R	A	Q	N		SBBCONTRACT - 625 PAH Physis LL (EAL) + TICS	2	4	2	2	533 - All Analytes	8015B_GRO_LL - (MOD) GRO	2	4	2	2	525.2_PREC - (MOD) 525plus PLUS TICS	8015B_DR0_LL_CS - HNL Ranges C10-C24/C24-C36/C8 C18	2	4	2	2	537.1_DW_PREC - 537.1 Full List	<p>Preservation Codes</p> <ul style="list-style-type: none"> M - Hexane A - HCL B - NaOH O - ASNaO2 C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Z - other (specify) Other 											
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Sample Identification			Field Filtered Sample (Yes or No)		Total Number of Containers																																			
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<p>Possible Hazard Identification</p> <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"/> Deliverable Requested I, II, III, IV, Other (specify) _____			<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		<p>Special Instructions/QC Requirements</p> <p>Method of Shipment: FEDEx 3775168841800 2775168841800 3775168841800</p>																																			
Relinquished by : <i>bailey</i>			Date : 10/20/2024		Company : HBWS																																			
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Custody Seals Intact			Custody Seal No : _____		Company : _____																																			
<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>			<p>Relinquished by: G. REITNER 02/11/2024 10:45 Company: EEAP</p>		<p>Relinquished by: G. REITNER 02/11/2024 10:45 Company: EEAP</p>																																			
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Cooler Temperature(s) °C and Other Remarks: **(75) 0.3 0.1-0.2 (2) 2.4 0.1-2.3 0.2 1.0 1.2 0°C Frozen**

Ver 01/16/2019

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Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-83046-2

SDG Number: 625, 8015

Login Number: 83046

List Number: 1

Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	One 8015B vial arrived 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	



Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-83046-2

SDG Number: 625, 8015

Login Number: 83046

List Number: 2

Creator: Khana, Piyush

List Source: Eurofins Calscience

List Creation: 02/15/24 04:07 PM

Question	Answer	Comment
Radioactivity wasn't checked or is < /= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

