eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 4/25/2023 10:43:25 AM

JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-38602-1

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

See page two for job notes and contact information.

Eurofins Eaton Analytical Pomona

Job Notes

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

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

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

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

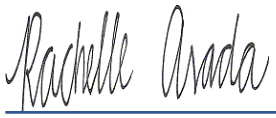
This report shall not be reproduced except in full, without the written approval of the laboratory.

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

Compliance Statement

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

Authorization



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Authorized for release by
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Table of Contents

Definitions/Glossary

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

Job ID: 380-38602-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
B	Analyte was found in the associated method blank.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
B	Analyte was found in the associated method blank.
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

Glossary

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

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 380-38602-1

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative
380-38602-1

Comments
No additional comments.

Receipt
The samples were received on 2/23/2023 10:30 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 2.1º C, 2.3º C and 2.6º C

GC/MS Semi VOA
Method 525.2: In the LCS 810-50567/2-A, 2,4-Dinitrotoluene failed low (67%) due to poor extraction efficiency with the current extraction media. Additionally, Chlorobenzilate failed high (133%) outside the acceptance limits of 70-130%.

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

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

Subcontract non-Sister
See attached subcontract report.

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

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

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

Detection Summary

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

Job ID: 380-38602-1

Client Sample ID: MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-38602-1

No Detections.

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202) — Lab Sample ID: 380-38602-2

No Detections.

This Detection Summary does not include radiochemical test results.

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

Job ID: 380-38602-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

Lab Sample ID: 380-38602-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
2,4'-DDE	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
2,4'-DDT	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
2,4-Dinitrotoluene	ND	*-	0.49		ug/L		03/07/23 08:58	03/08/23 01:33	1
2,6-Dinitrotoluene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
4,4'-DDD	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
4,4'-DDE	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
4,4'-DDT	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Acenaphthene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Acenaphthylene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Acetochlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Alachlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
alpha-BHC	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
alpha-Chlordane	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Anthracene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Atrazine	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Benz(a)anthracene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Benzo[a]pyrene	ND		0.020		ug/L		03/07/23 08:58	03/08/23 01:33	1
Benzo[b]fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Benzo[g,h,i]perylene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Benzo[k]fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
beta-BHC	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Bis(2-ethylhexyl) phthalate	ND		0.59		ug/L		03/07/23 08:58	03/08/23 01:33	1
Bromacil	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Butachlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Butylbenzylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/08/23 01:33	1
Chlorobenzilate	ND	*+	0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Chloroneb	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Chlorpyrifos	ND		0.049		ug/L		03/07/23 08:58	03/08/23 01:33	1
Chrysene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
delta-BHC	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Di(2-ethylhexyl)adipate	ND		0.59		ug/L		03/07/23 08:58	03/08/23 01:33	1
Dibenz(a,h)anthracene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Diclorvos (DDVP)	ND		0.049		ug/L		03/07/23 08:58	03/08/23 01:33	1
Dieldrin	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Diethylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/08/23 01:33	1
Dimethylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/08/23 01:33	1
Di-n-octyl phthalate	ND		2.0		ug/L		03/07/23 08:58	03/08/23 01:33	1
Di-n-butyl phthalate	ND		2.0		ug/L		03/07/23 08:58	03/08/23 01:33	1
Endosulfan I (Alpha)	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Endosulfan II (Beta)	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Endosulfan sulfate	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Endrin	ND	*+	0.0099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Endrin aldehyde	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
EPTC	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Fluorene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
gamma-Chlordane	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

Lab Sample ID: 380-38602-1
Matrix: Drinking Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	ND		0.040		ug/L		03/07/23 08:58	03/08/23 01:33	1
Heptachlor epoxide (isomer B)	ND	*+	0.020		ug/L		03/07/23 08:58	03/08/23 01:33	1
Hexachlorocyclopentadiene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Hexachlorobenzene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Indeno[1,2,3-cd]pyrene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Isophorone	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
gamma-BHC (Lindane)	ND		0.020		ug/L		03/07/23 08:58	03/08/23 01:33	1
Malathion	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Methoxychlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Metolachlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Metribuzin	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Molinate	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Naphthalene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Parathion	ND		0.49		ug/L		03/07/23 08:58	03/08/23 01:33	1
Phenanthrene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Propachlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Pyrene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Simazine	ND		0.069		ug/L		03/07/23 08:58	03/08/23 01:33	1
Terbacil	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Thiobencarb	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		03/07/23 08:58	03/08/23 01:33	1
trans-Nonachlor	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Trifluralin	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
Terbuthylazine	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
1-Methylnaphthalene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
2-Methylnaphthalene	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
cis-Permethrin	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1
trans-Permethrin	ND		0.099		ug/L		03/07/23 08:58	03/08/23 01:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown alkane	*1.9*	*T J*	*ug/L*		*3.66*	*N/A*	*03/07/23 08:58*	*03/08/23 01:33*	*1*
9-Octadecenamide, (Z)-	*0.96*	*T J N*	*ug/L*		*16.02*	*301-02-0*	*03/07/23 08:58*	*03/08/23 01:33*	*1*
Squalene	*1.2*	*T J N*	*ug/L*		*16.30*	*111-02-4*	*03/07/23 08:58*	*03/08/23 01:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*104*		*70 - 130*	*03/07/23 08:58*	*03/08/23 01:33*	*1*
Triphenylphosphate	*108*		*70 - 130*	*03/07/23 08:58*	*03/08/23 01:33*	*1*
Perylene-d12	*98*		*70 - 130*	*03/07/23 08:58*	*03/08/23 01:33*	*1*

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

Lab Sample ID: 380-38602-1
Matrix: Drinking Water

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluorobutanoic acid (PFBA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoropentanoic acid (PFPeA)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1
Perfluoropentanesulfonic acid (PFPeS)	ND		1.9		ng/L		03/21/23 06:08	03/22/23 19:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*82*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C6 PFDA	*99*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C5 PFHxA	*99*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C4 PFHpA	*100*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C8 PFOA	*100*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C9 PFNA	*103*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C7 PFUnA	*98*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C2 PFDoA	*97*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C4 PFBA	*100*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C5 PFPeA	*97*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C3 PFBS	*103*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C3 PFHxS	*104*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C8 PFOS	*99*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C2-4:2-FTS	*99*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C2-6:2-FTS	*116*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*
13C2-8:2-FTS	*108*		*50 - 200*	*03/21/23 06:08*	*03/22/23 19:01*	*1*

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

Lab Sample ID: 380-38602-1
Matrix: Drinking Water

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorodecanoic acid (PFDA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorododecanoic acid (PFDoA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorohexanoic acid (PFHxA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorononanoic acid (PFNA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorooctanoic acid (PFOA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorotetradecanoic acid (PFTA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
Perfluorotridecanoic acid (PFTrDA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1.9		ng/L		03/06/23 06:52	03/07/23 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*109*		*70 - 130*	*03/06/23 06:52*	*03/07/23 14:00*	*1*
13C2 PFDA	*100*		*70 - 130*	*03/06/23 06:52*	*03/07/23 14:00*	*1*
d5-NEtFOSAA	*100*		*70 - 130*	*03/06/23 06:52*	*03/07/23 14:00*	*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		02/24/23 00:00	03/05/23 03:53	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Acenaphthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Anthracene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Biphenyl	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Chrysene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/24/23 00:00	03/05/23 03:53	1
Fluoranthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-38602-1
Matrix: Drinking Water
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Naphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Perylene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Phenanthrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1
Pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/05/23 03:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*82*		*27 - 133*	*02/24/23 00:00*	*03/05/23 03:53*	*1*
(d10-Phenanthrene)	*84*		*43 - 129*	*02/24/23 00:00*	*03/05/23 03:53*	*1*
(d12-Chrysene)	*82*		*52 - 144*	*02/24/23 00:00*	*03/05/23 03:53*	*1*
(d12-Perylene)	*77*		*36 - 161*	*02/24/23 00:00*	*03/05/23 03:53*	*1*
(d8-Naphthalene)	*76*		*25 - 125*	*02/24/23 00:00*	*03/05/23 03:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/25/23 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*92*		*60 - 140*		*02/25/23 14:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			03/06/23 18:59	1
MOTOR OIL	ND	U	0.057		mg/L			03/06/23 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE	*90*		*60 - 130*		*03/06/23 18:59*	*1*
HEXACOSANE	*112*		*60 - 130*		*03/06/23 18:59*	*1*

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-38602-2
Matrix: Water
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/25/23 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE	*90*		*60 - 140*		*02/25/23 15:03*	*1*

Action Limit Summary

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

Job ID: 380-38602-1

Client Sample ID: MOANALUA WELLS (331-223-TP202) Lab Sample ID: 380-38602-1

Compliance Check

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

Analyte	Result	Qualifier	Unit	EPAMCL Limit	RL	Method	Prep Type
Alachlor	ND		ug/L	2	0.099	525.2	Total/NA
Atrazine	ND		ug/L	3	0.099	525.2	Total/NA
Benzo[a]pyrene	ND		ug/L	0.2	0.020	525.2	Total/NA
Bis(2-ethylhexyl) phthalate	ND		ug/L	6	0.59	525.2	Total/NA
Di(2-ethylhexyl)adipate	ND		ug/L	400	0.59	525.2	Total/NA
Endrin	ND	*+	ug/L	2	0.0099	525.2	Total/NA
Heptachlor	ND		ug/L	0.4	0.040	525.2	Total/NA
Heptachlor epoxide (isomer B)	ND	*+	ug/L	0.2	0.020	525.2	Total/NA
Hexachlorocyclopentadiene	ND		ug/L	50	0.099	525.2	Total/NA
Hexachlorobenzene	ND		ug/L	1	0.099	525.2	Total/NA
gamma-BHC (Lindane)	ND		ug/L	0.2	0.020	525.2	Total/NA
Methoxychlor	ND		ug/L	40	0.099	525.2	Total/NA
Simazine	ND		ug/L	4	0.069	525.2	Total/NA

Surrogate Summary

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

Job ID: 380-38602-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-38602-1	MOANALUA WELLS (331-223-T	104	108	98

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)		
		2NMX	TPP	PRY
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
810-54541-O-1-A MS	Matrix Spike	103	104	95
810-54983-B-1-A DU	Duplicate	105	106	94
LCS 810-50567/2-A	Lab Control Sample	104	111	103
LLCS 810-49811/3-A	Lab Control Sample	98	100	95
MB 810-50567/1-A	Method Blank	101	103	96
MB 810-50567/1-A	Method Blank	95	98	91

Surrogate Legend

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

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		PFHxA	PFDA	d5NEFOS
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
380-38602-1	MOANALUA WELLS (331-223-T	109	100	100
380-38602-1 MS	MOANALUA WELLS (331-223-TP202)	106	95	102

Surrogate Legend

PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
d5NEFOS = d5-NEtFOSAA

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)		
		PFHxA	PFDA	d5NEFOS
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
550-198205-B-1-A DU	Duplicate	104	98	101
LCS 810-50391/3-A	Lab Control Sample	100	100	93
LLCS 810-50391/2-A	Lab Control Sample	102	100	98
MBL 810-50391/1-A	Method Blank	100	91	93

Surrogate Legend

PFHxA = 13C2 PFHxA

Surrogate Summary

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

Job ID: 380-38602-1

PFDA = 13C2 PFDA
d5NEFOS = d5-NEtFOSAA

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
104302-B1	Method Blank	85	86	85	78	83
104302-BS1	Lab Control Sample	88	89	83	82	89
104302-BS2	Lab Control Sample Dup	84	86	81	78	84

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)				
		Acenapht	Phenanth	CRY	NPT	PRY
Lab Sample ID	Client Sample ID	(27-133)	(43-129)	(52-144)	(25-125)	(36-161)
380-38602-1	MOANALUA WELLS (331-223-T	82	84	82	76	77

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-38602-1	MOANALUA WELLS (331-223-T	92

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	
23VGH7B08B	Method Blank	

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

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

Job ID: 380-38602-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(70-130)
23VGH7B08C	LCD	111
23VGH7B08L	Lab Control Sample	109

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)
		BFB
Lab Sample ID	Client Sample ID	(60-140)
380-38602-2	TB:MOANALUA WELLS (331-22	90

Surrogate Legend

BFB = BROMOFLUOROBENZENE

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSAI
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
380-38602-1	MOANALUA WELLS (331-223-T	90	112

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSAI
Lab Sample ID	Client Sample ID	(60-130)	(60-130)
23DSC005WC	LCD	97	109
23DSC005WL	Lab Control Sample	98	110

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BB	XACOSAI
Lab Sample ID	Client Sample ID		
23DSC005WB	Method Blank		

Surrogate Legend

BB = BROMOBENZENE

HEXACOSANE = HEXACOSANE

Isotope Dilution Summary

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

Job ID: 380-38602-1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Drinking Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-38602-1	MOANALUA WELLS (331-223-T	82	99	99	100	100	103	98	97

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-38602-1	MOANALUA WELLS (331-223-T	100	97	103	104	99	99	116	108

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HFPODA (50-200)	C6PFDA (50-200)	13C5PHA (50-200)	C4PFHA (50-200)	C8PFOA (50-200)	C9PFNA (50-200)	13C7PUA (50-200)	PFDoA (50-200)
380-38733-B-1-A DU	Duplicate	86	96	94	95	96	98	93	91
810-54761-C-19-A LMS	Matrix Spike	80	90	88	88	89	91	89	89
LLCS 810-52342/2-A	Lab Control Sample	97	99	100	101	101	103	97	97
MBL 810-52342/1-A	Method Blank	85	94	96	95	96	96	93	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (50-200)	PFPeA (50-200)	C3PFBS (50-200)	C3PFHS (50-200)	C8PFOS (50-200)	42FTS (50-200)	62FTS (50-200)	82FTS (50-200)
380-38733-B-1-A DU	Duplicate	50	93	94	94	94	90	109	101
810-54761-C-19-A LMS	Matrix Spike	93	95	99	102	96	100	112	107
LLCS 810-52342/2-A	Lab Control Sample	100	99	100	100	99	101	100	101
MBL 810-52342/1-A	Method Blank	96	95	95	96	93	97	96	98

Surrogate Legend

HFPODA = 13C3 HFPO-DA
C6PFDA = 13C6 PFDA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
13C7PUA = 13C7 PFUnA

Isotope Dilution Summary

Client: City & County of Honolulu
Job ID: 380-38602-1
Project/Site: RED-HILL

PFDoA = 13C2 PFDoA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

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

Lab Sample ID: LLCS 810-49811/3-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49811

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Alachlor			0.0983	0.0810	J	ug/L		82	50 - 150		
Atrazine			0.0983	0.0854	J	ug/L		87	50 - 150		
Benzo[a]pyrene			0.0197	0.0161	J	ug/L		82	50 - 150		
Bis(2-ethylhexyl) phthalate			0.590	0.615		ug/L		104	50 - 150		
Butachlor			0.0983	0.0816	J	ug/L		83	50 - 150		
Di(2-ethylhexyl)adipate			0.590	0.556	J	ug/L		94	50 - 150		
Dieldrin			0.0197	0.0214	J	ug/L		109	50 - 150		
Endrin			0.00983	0.0102		ug/L		104	50 - 150		
Heptachlor			0.00983	0.00728	J	ug/L		74	50 - 150		
Heptachlor epoxide (isomer B)			0.00983	0.00996	J	ug/L		101	50 - 150		
Hexachlorobenzene			0.0983	0.0772	J	ug/L		79	50 - 150		
gamma-BHC (Lindane)			0.0197	0.0207		ug/L		105	50 - 150		
Methoxychlor			0.0983	0.0508	J	ug/L		52	50 - 150		
Metolachlor			0.0983	0.0856	J	ug/L		87	50 - 150		
Metribuzin			0.0983	0.0832	J	ug/L		85	50 - 150		
Propachlor			0.0983	0.0785	J	ug/L		80	50 - 150		
Simazine			0.0688	0.0507	J	ug/L		74	50 - 150		

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
2-Nitro-m-xylene	*98*		*70 - 130*
Triphenylphosphate	*100*		*70 - 130*
Perylene-d12	*95*		*70 - 130*

Lab Sample ID: MB 810-50567/1-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
2,4'-DDE	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
2,4'-DDT	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
2,4-Dinitrotoluene	ND		0.50		ug/L		03/07/23 08:58	03/07/23 22:13	1
2,6-Dinitrotoluene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
4,4'-DDD	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
4,4'-DDE	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
4,4'-DDT	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Acenaphthene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Acenaphthylene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Acetochlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Alachlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
alpha-BHC	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
alpha-Chlordane	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Anthracene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Atrazine	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Benz(a)anthracene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Benzo[a]pyrene	ND		0.020		ug/L		03/07/23 08:58	03/07/23 22:13	1
Benzo[b]fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Benzo[g,h,i]perylene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1

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

Lab Sample ID: MB 810-50567/1-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
beta-BHC	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		03/07/23 08:58	03/07/23 22:13	1
Bromacil	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Butachlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Butylbenzylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/07/23 22:13	1
Chlorobenzilate	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Chloroneb	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Chlorpyrifos	ND		0.050		ug/L		03/07/23 08:58	03/07/23 22:13	1
Chrysene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
delta-BHC	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		03/07/23 08:58	03/07/23 22:13	1
Dibenz(a,h)anthracene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Diclorvos (DDVP)	ND		0.050		ug/L		03/07/23 08:58	03/07/23 22:13	1
Dieldrin	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Diethylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/07/23 22:13	1
Dimethylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/07/23 22:13	1
Di-n-octyl phthalate	ND		2.0		ug/L		03/07/23 08:58	03/07/23 22:13	1
Di-n-butyl phthalate	ND		2.0		ug/L		03/07/23 08:58	03/07/23 22:13	1
Endosulfan I (Alpha)	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Endosulfan II (Beta)	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Endosulfan sulfate	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Endrin	ND		0.0099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Endrin aldehyde	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
EPTC	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Fluorene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
gamma-Chlordane	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Heptachlor	ND		0.040		ug/L		03/07/23 08:58	03/07/23 22:13	1
Heptachlor epoxide (isomer B)	ND		0.020		ug/L		03/07/23 08:58	03/07/23 22:13	1
Hexachlorocyclopentadiene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Hexachlorobenzene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Indeno[1,2,3-cd]pyrene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Isophorone	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
gamma-BHC (Lindane)	ND		0.020		ug/L		03/07/23 08:58	03/07/23 22:13	1
Malathion	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Methoxychlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Metolachlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Metribuzin	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Molinate	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Naphthalene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Parathion	ND		0.50		ug/L		03/07/23 08:58	03/07/23 22:13	1
Phenanthrene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Propachlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Pyrene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Simazine	ND		0.070		ug/L		03/07/23 08:58	03/07/23 22:13	1
Terbacil	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Thiobencarb	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1

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

Lab Sample ID: MB 810-50567/1-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Permethrin (mixed isomers)	ND		0.20		ug/L		03/07/23 08:58	03/07/23 22:13	1
trans-Nonachlor	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Trifluralin	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
Terbuthylazine	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
1-Methylnaphthalene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
2-Methylnaphthalene	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
cis-Permethrin	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1
trans-Permethrin	ND		0.099		ug/L		03/07/23 08:58	03/07/23 22:13	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
2-Butoxyethyl acetate	*4.98*	*B*	*ug/L*		*3.66*	*112-07-2*	*03/07/23 08:58*	*03/07/23 22:13*	*1*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*03/07/23 08:58*	*03/07/23 22:13*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*101*		*70 - 130*	*03/07/23 08:58*	*03/07/23 22:13*	*1*
Triphenylphosphate	*103*		*70 - 130*	*03/07/23 08:58*	*03/07/23 22:13*	*1*
Perylene-d12	*96*		*70 - 130*	*03/07/23 08:58*	*03/07/23 22:13*	*1*

Lab Sample ID: MB 810-50567/1-A
Matrix: Water
Analysis Batch: 51384

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDD	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
2,4'-DDE	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
2,4'-DDT	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
2,4-Dinitrotoluene	ND		0.50		ug/L		03/07/23 08:58	03/13/23 13:45	1
2,6-Dinitrotoluene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
4,4'-DDD	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
4,4'-DDE	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
4,4'-DDT	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Acenaphthene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Acenaphthylene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Acetochlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Alachlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
alpha-BHC	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
alpha-Chlordane	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Anthracene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Atrazine	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Benz(a)anthracene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Benzo[a]pyrene	ND		0.020		ug/L		03/07/23 08:58	03/13/23 13:45	1
Benzo[b]fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Benzo[g,h,i]perylene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Benzo[k]fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
beta-BHC	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Bis(2-ethylhexyl) phthalate	ND		0.60		ug/L		03/07/23 08:58	03/13/23 13:45	1
Bromacil	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1

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

Lab Sample ID: MB 810-50567/1-A
Matrix: Water
Analysis Batch: 51384

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Butachlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Butylbenzylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/13/23 13:45	1
Chlorobenzilate	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Chloroneb	2.15	B	0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Chlorothalonil (Draconil, Bravo)	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Chlorpyrifos	ND		0.050		ug/L		03/07/23 08:58	03/13/23 13:45	1
Chrysene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
delta-BHC	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Di(2-ethylhexyl)adipate	ND		0.60		ug/L		03/07/23 08:58	03/13/23 13:45	1
Dibenz(a,h)anthracene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Diclorvos (DDVP)	ND		0.050		ug/L		03/07/23 08:58	03/13/23 13:45	1
Dieldrin	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Diethylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/13/23 13:45	1
Dimethylphthalate	ND		0.99		ug/L		03/07/23 08:58	03/13/23 13:45	1
Di-n-octyl phthalate	ND		2.0		ug/L		03/07/23 08:58	03/13/23 13:45	1
Di-n-butyl phthalate	ND		2.0		ug/L		03/07/23 08:58	03/13/23 13:45	1
Endosulfan I (Alpha)	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Endosulfan II (Beta)	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Endosulfan sulfate	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Endrin	ND		0.0099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Endrin aldehyde	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
EPTC	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Fluoranthene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Fluorene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
gamma-Chlordane	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Heptachlor	ND		0.040		ug/L		03/07/23 08:58	03/13/23 13:45	1
Heptachlor epoxide (isomer B)	ND		0.020		ug/L		03/07/23 08:58	03/13/23 13:45	1
Hexachlorocyclopentadiene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Hexachlorobenzene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Indeno[1,2,3-cd]pyrene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Isophorone	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
gamma-BHC (Lindane)	ND		0.020		ug/L		03/07/23 08:58	03/13/23 13:45	1
Malathion	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Methoxychlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Metolachlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Metribuzin	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Molinate	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Naphthalene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Parathion	ND		0.50		ug/L		03/07/23 08:58	03/13/23 13:45	1
Phenanthrene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Propachlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Pyrene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Simazine	ND		0.070		ug/L		03/07/23 08:58	03/13/23 13:45	1
Terbacil	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Thiobencarb	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Total Permethrin (mixed isomers)	ND		0.20		ug/L		03/07/23 08:58	03/13/23 13:45	1
trans-Nonachlor	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Trifluralin	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
Pendimethalin (Penoxaline)	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1

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

Lab Sample ID: MB 810-50567/1-A
Matrix: Water
Analysis Batch: 51384

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50567

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Terbuthylazine	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
1-Methylnaphthalene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1
2-Methylnaphthalene	ND		0.099		ug/L		03/07/23 08:58	03/13/23 13:45	1

Tentatively Identified Compound	*Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*			*N/A*	*03/07/23 08:58*	*03/13/23 13:45*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Nitro-m-xylene	*95*		*70 - 130*	*03/07/23 08:58*	*03/13/23 13:45*	*1*
Triphenylphosphate	*98*		*70 - 130*	*03/07/23 08:58*	*03/13/23 13:45*	*1*
Perylene-d12	*91*		*70 - 130*	*03/07/23 08:58*	*03/13/23 13:45*	*1*

Lab Sample ID: LCS 810-50567/2-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50567

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	1.97	2.08		ug/L		106	70 - 130
2,4'-DDE	1.97	2.15		ug/L		109	70 - 130
2,4'-DDT	1.97	2.06		ug/L		105	70 - 130
2,4-Dinitrotoluene	1.97	1.31	*-	ug/L		67	70 - 130
2,6-Dinitrotoluene	1.97	1.43		ug/L		73	70 - 130
4,4'-DDD	1.97	2.23		ug/L		113	70 - 130
4,4'-DDE	1.97	2.30		ug/L		117	70 - 130
4,4'-DDT	1.97	2.23		ug/L		113	70 - 130
Acenaphthene	1.97	1.88		ug/L		96	70 - 130
Acenaphthylene	1.97	1.94		ug/L		99	70 - 130
Acetochlor	1.97	2.39		ug/L		122	70 - 130
Alachlor	1.97	2.32		ug/L		118	70 - 130
alpha-BHC	1.97	1.99		ug/L		101	70 - 130
alpha-Chlordane	1.97	1.88		ug/L		96	70 - 130
Anthracene	1.97	1.74		ug/L		89	70 - 130
Atrazine	1.97	2.11		ug/L		107	70 - 130
Benz(a)anthracene	1.97	2.21		ug/L		113	70 - 130
Benzo[a]pyrene	1.97	2.00		ug/L		102	70 - 130
Benzo[b]fluoranthene	1.97	2.19		ug/L		112	70 - 130
Benzo[g,h,i]perylene	1.97	1.99		ug/L		101	70 - 130
Benzo[k]fluoranthene	1.97	2.20		ug/L		112	70 - 130
beta-BHC	1.97	2.04		ug/L		104	70 - 130
Bis(2-ethylhexyl) phthalate	1.97	2.26		ug/L		115	70 - 130
Bromacil	1.97	2.24		ug/L		114	70 - 130
Butachlor	1.97	2.42		ug/L		123	70 - 130
Butylbenzylphthalate	1.97	2.32		ug/L		118	70 - 130
Chlorobenzilate	1.97	2.62	*+	ug/L		133	70 - 130
Chloroneb	1.97	2.04		ug/L		104	70 - 130
Chlorothalonil (Draconil, Bravo)	1.97	1.90		ug/L		97	70 - 130
Chlorpyrifos	1.97	2.00		ug/L		101	70 - 130
Chrysene	1.97	2.13		ug/L		108	70 - 130

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

Lab Sample ID: LCS 810-50567/2-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50567

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
delta-BHC	1.97	1.96		ug/L		100	70 - 130
Di(2-ethylhexyl)adipate	1.97	2.20		ug/L		112	70 - 130
Dibenz(a,h)anthracene	1.97	2.08		ug/L		106	70 - 130
Diclorvos (DDVP)	1.97	1.58		ug/L		80	70 - 130
Dieldrin	1.97	2.09		ug/L		106	70 - 130
Diethylphthalate	1.97	2.20		ug/L		112	70 - 130
Dimethylphthalate	1.97	2.06		ug/L		105	70 - 130
Di-n-octyl phthalate	1.97	2.18		ug/L		111	60 - 122
Di-n-butyl phthalate	1.97	2.31		ug/L		117	70 - 130
Endosulfan I (Alpha)	1.97	2.13		ug/L		108	70 - 130
Endosulfan II (Beta)	1.97	2.19		ug/L		111	70 - 130
Endosulfan sulfate	1.97	1.98		ug/L		101	70 - 130
Endrin	1.97	1.96		ug/L		100	70 - 130
Endrin aldehyde	1.97	1.76		ug/L		90	64 - 125
EPTC	1.97	2.01		ug/L		102	70 - 130
Fluoranthene	1.97	2.19		ug/L		111	70 - 130
Fluorene	1.97	2.07		ug/L		105	70 - 130
gamma-Chlordane	1.97	1.92		ug/L		98	70 - 130
Heptachlor	1.97	1.86		ug/L		95	70 - 130
Heptachlor epoxide (isomer B)	1.97	1.98		ug/L		100	70 - 130
Hexachlorocyclopentadiene	1.97	1.44		ug/L		73	70 - 130
Hexachlorobenzene	1.97	1.84		ug/L		93	70 - 130
Indeno[1,2,3-cd]pyrene	1.97	2.03		ug/L		103	70 - 130
Isophorone	1.97	1.99		ug/L		101	70 - 130
gamma-BHC (Lindane)	1.97	2.01		ug/L		102	70 - 130
Malathion	1.97	2.05		ug/L		104	80 - 134
Methoxychlor	1.97	1.95		ug/L		99	70 - 130
Metolachlor	1.97	2.21		ug/L		112	70 - 130
Metribuzin	1.97	1.57		ug/L		80	70 - 130
Molinate	1.97	2.04		ug/L		104	70 - 130
Naphthalene	1.97	1.95		ug/L		99	70 - 130
Parathion	1.97	1.96		ug/L		100	80 - 134
Phenanthrene	1.97	1.94		ug/L		99	70 - 130
Propachlor	1.97	2.15		ug/L		109	70 - 130
Pyrene	1.97	2.23		ug/L		114	70 - 130
Simazine	1.97	1.69		ug/L		86	70 - 130
Terbacil	1.97	1.57		ug/L		80	70 - 130
Thiobencarb	1.97	2.23		ug/L		113	70 - 130
trans-Nonachlor	1.97	1.79		ug/L		91	70 - 130
Trifluralin	1.97	1.87		ug/L		95	70 - 130
Pendimethalin (Penoxaline)	1.97	2.14		ug/L		109	65 - 122
Terbuthylazine	1.97	2.10		ug/L		107	70 - 130
1-Methylnaphthalene	1.97	1.92		ug/L		98	70 - 130
2-Methylnaphthalene	1.97	1.93		ug/L		98	70 - 130
cis-Permethrin	1.97	2.12		ug/L		108	70 - 130
trans-Permethrin	1.97	2.11		ug/L		108	70 - 130

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

Lab Sample ID: LCS 810-50567/2-A
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50567

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Nitro-m-xylene	104		70 - 130
Triphenylphosphate	111		70 - 130
Perylene-d12	103		70 - 130

Lab Sample ID: 810-54541-O-1-A MS
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50567

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4'-DDD	ND		2.02	1.98		ug/L		98	70 - 130
2,4'-DDE	ND		2.02	2.13		ug/L		105	70 - 130
2,4'-DDT	ND		2.02	2.22		ug/L		110	70 - 130
2,4-Dinitrotoluene	ND	*-	2.02	1.57		ug/L		78	70 - 130
2,6-Dinitrotoluene	ND		2.02	1.72		ug/L		85	70 - 130
4,4'-DDD	ND		2.02	2.28		ug/L		113	70 - 130
4,4'-DDE	ND		2.02	2.17		ug/L		108	70 - 130
4,4'-DDT	ND		2.02	2.14		ug/L		106	70 - 130
Acenaphthene	ND		2.02	1.85		ug/L		92	70 - 130
Acenaphthylene	ND		2.02	2.06		ug/L		102	70 - 130
Acetochlor	ND		2.02	2.40		ug/L		119	70 - 130
Alachlor	ND		2.02	2.38		ug/L		118	70 - 130
alpha-BHC	ND		2.02	2.06		ug/L		102	70 - 130
alpha-Chlordane	ND		2.02	1.91		ug/L		95	70 - 130
Anthracene	ND		2.02	1.95		ug/L		97	70 - 130
Atrazine	ND		2.02	2.14		ug/L		106	70 - 130
Benz(a)anthracene	ND		2.02	2.11		ug/L		105	70 - 130
Benzo[a]pyrene	ND		2.02	2.03		ug/L		100	70 - 130
Benzo[b]fluoranthene	ND		2.02	2.20		ug/L		109	70 - 130
Benzo[g,h,i]perylene	ND		2.02	2.01		ug/L		99	70 - 130
Benzo[k]fluoranthene	ND		2.02	2.03		ug/L		100	70 - 130
beta-BHC	ND		2.02	2.13		ug/L		106	70 - 130
Bis(2-ethylhexyl) phthalate	ND		2.02	2.31		ug/L		115	70 - 130
Bromacil	ND	F1	2.02	2.71	F1	ug/L		134	70 - 130
Butachlor	ND		2.02	2.53		ug/L		125	70 - 130
Butylbenzylphthalate	ND		2.02	2.35		ug/L		116	70 - 130
Chlorobenzilate	ND	F1 *+	2.02	2.73	F1	ug/L		135	70 - 130
Chloroneb	ND		2.02	2.04		ug/L		101	70 - 130
Chlorothalonil (Draconil, Bravo)	ND		2.02	1.99		ug/L		98	70 - 130
Chlorpyrifos	ND		2.02	2.08		ug/L		103	70 - 130
Chrysene	ND		2.02	2.03		ug/L		101	70 - 130
delta-BHC	ND		2.02	2.07		ug/L		103	70 - 130
Di(2-ethylhexyl)adipate	ND		2.02	2.22		ug/L		110	70 - 130
Dibenz(a,h)anthracene	ND		2.02	2.05		ug/L		102	70 - 130
Diclorvos (DDVP)	ND		2.02	1.78		ug/L		88	70 - 130
Dieldrin	ND		2.02	1.95		ug/L		97	70 - 130
Diethylphthalate	ND		2.02	2.11		ug/L		105	70 - 130
Dimethylphthalate	ND		2.02	2.10		ug/L		104	70 - 130
Di-n-octyl phthalate	ND		2.02	2.17		ug/L		107	60 - 122

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

Lab Sample ID: 810-54541-O-1-A MS
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 50567

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Di-n-butyl phthalate	ND		2.02	2.37		ug/L		117	70 - 130
Endosulfan I (Alpha)	ND		2.02	2.08		ug/L		103	70 - 130
Endosulfan II (Beta)	ND		2.02	2.20		ug/L		109	70 - 130
Endosulfan sulfate	ND		2.02	2.00		ug/L		99	70 - 130
Endrin	ND	*+	2.02	2.00		ug/L		99	70 - 130
Endrin aldehyde	ND		2.02	1.68		ug/L		83	64 - 125
EPTC	ND		2.02	2.01		ug/L		100	70 - 130
Fluoranthene	ND		2.02	2.22		ug/L		110	70 - 130
Fluorene	ND		2.02	2.03		ug/L		100	70 - 130
gamma-Chlordane	ND		2.02	2.01		ug/L		99	70 - 130
Heptachlor	ND		2.02	2.01		ug/L		100	70 - 130
Heptachlor epoxide (isomer B)	ND	*+	2.02	2.03		ug/L		101	70 - 130
Hexachlorocyclopentadiene	ND	*-	2.02	1.64		ug/L		81	70 - 130
Hexachlorobenzene	ND		2.02	1.91		ug/L		95	70 - 130
Indeno[1,2,3-cd]pyrene	ND		2.02	2.03		ug/L		100	70 - 130
Isophorone	ND		2.02	1.96		ug/L		97	70 - 130
gamma-BHC (Lindane)	ND		2.02	2.15		ug/L		107	70 - 130
Malathion	ND		2.02	2.20		ug/L		109	80 - 134
Methoxychlor	ND		2.02	2.02		ug/L		100	70 - 130
Metolachlor	ND		2.02	2.35		ug/L		116	70 - 130
Metribuzin	ND		2.02	1.88		ug/L		93	70 - 130
Molinate	ND		2.02	2.00		ug/L		99	70 - 130
Naphthalene	ND		2.02	2.06		ug/L		102	70 - 130
Parathion	ND		2.02	2.22		ug/L		110	80 - 134
Phenanthrene	ND		2.02	1.96		ug/L		97	70 - 130
Propachlor	ND		2.02	2.13		ug/L		106	70 - 130
Pyrene	ND		2.02	2.18		ug/L		108	70 - 130
Simazine	ND		2.02	1.93		ug/L		96	70 - 130
Terbacil	ND		2.02	2.02		ug/L		100	70 - 130
Thiobencarb	ND		2.02	2.29		ug/L		114	70 - 130
trans-Nonachlor	ND		2.02	1.91		ug/L		95	70 - 130
Trifluralin	ND		2.02	1.92		ug/L		95	70 - 130
Pendimethalin (Penoxaline)	ND		2.02	2.29		ug/L		114	65 - 122
Terbuthylazine	ND		2.02	2.15		ug/L		106	70 - 130
1-Methylnaphthalene	ND		2.02	1.99		ug/L		99	70 - 130
2-Methylnaphthalene	ND		2.02	1.98		ug/L		98	70 - 130
cis-Permethrin	ND		2.02	2.17		ug/L		108	70 - 130
trans-Permethrin	ND		2.02	2.18		ug/L		108	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Nitro-m-xylene	*103*		*70 - 130*
Triphenylphosphate	*104*		*70 - 130*
Perylene-d12	*95*		*70 - 130*

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

Lab Sample ID: 810-54983-B-1-A DU
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 50567

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2,4'-DDD	ND			ND		ug/L				NC	30
2,4'-DDE	ND			ND		ug/L				NC	30
2,4'-DDT	ND			ND		ug/L				NC	30
2,4-Dinitrotoluene	ND	*-		ND	*-	ug/L				NC	20
2,6-Dinitrotoluene	ND			ND		ug/L				NC	30
4,4'-DDD	ND			ND		ug/L				NC	17
4,4'-DDE	ND			ND		ug/L				NC	19
4,4'-DDT	ND			ND		ug/L				NC	19
Acenaphthene	ND			ND		ug/L				NC	31
Acenaphthylene	ND			ND		ug/L				NC	34
Acetochlor	ND			ND		ug/L				NC	30
Alachlor	ND			ND		ug/L				NC	15
alpha-BHC	ND			ND		ug/L				NC	30
alpha-Chlordane	ND			ND		ug/L				NC	15
Anthracene	ND			ND		ug/L				NC	52
Atrazine	ND			ND		ug/L				NC	17
Benz(a)anthracene	ND			ND		ug/L				NC	14
Benzo[a]pyrene	ND			ND		ug/L				NC	26
Benzo[b]fluoranthene	ND			ND		ug/L				NC	20
Benzo[g,h,i]perylene	ND			ND		ug/L				NC	14
Benzo[k]fluoranthene	ND			ND		ug/L				NC	20
beta-BHC	ND			ND		ug/L				NC	30
Bis(2-ethylhexyl) phthalate	ND			ND		ug/L				NC	18
Bromacil	ND			ND		ug/L				NC	20
Butachlor	ND			ND		ug/L				NC	15
Butylbenzylphthalate	ND			ND		ug/L				NC	23
Chlorobenzilate	ND	*+		ND	*+	ug/L				NC	30
Chloroneb	ND			ND		ug/L				NC	30
Chlorothalonil (Draconil, Bravo)	ND			ND		ug/L				NC	15
Chlorpyrifos	ND			ND		ug/L				NC	30
Chrysene	ND			ND		ug/L				NC	12
delta-BHC	ND			ND		ug/L				NC	30
Di(2-ethylhexyl)adipate	ND			ND		ug/L				NC	16
Dibenz(a,h)anthracene	ND			ND		ug/L				NC	19
Diclorvos (DDVP)	ND			ND		ug/L				NC	30
Dieldrin	ND			ND		ug/L				NC	19
Diethylphthalate	ND			ND		ug/L				NC	21
Dimethylphthalate	ND			ND		ug/L				NC	20
Di-n-octyl phthalate	ND			ND		ug/L				NC	20
Di-n-butyl phthalate	ND			ND		ug/L				NC	20
Endosulfan I (Alpha)	ND			ND		ug/L				NC	30
Endosulfan II (Beta)	ND			ND		ug/L				NC	30
Endosulfan sulfate	ND			ND		ug/L				NC	30
Endrin	ND	*+		ND	*+	ug/L				NC	18
Endrin aldehyde	ND			ND		ug/L				NC	30
EPTC	ND			ND		ug/L				NC	18
Fluoranthene	ND			ND		ug/L				NC	13
Fluorene	ND			ND		ug/L				NC	25

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

Lab Sample ID: 810-54983-B-1-A DU
Matrix: Water
Analysis Batch: 50704

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 50567

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
gamma-Chlordane	ND			ND		ug/L				NC	16
Heptachlor	ND			ND		ug/L				NC	15
Heptachlor epoxide (isomer B)	ND	*+		ND	*+	ug/L				NC	14
Hexachlorocyclopentadiene	ND	*-		ND	*-	ug/L				NC	29
Hexachlorobenzene	ND			ND		ug/L				NC	14
Indeno[1,2,3-cd]pyrene	ND			ND		ug/L				NC	25
Isophorone	ND			ND		ug/L				NC	44
gamma-BHC (Lindane)	ND			ND		ug/L				NC	13
Malathion	ND			ND		ug/L				NC	20
Methoxychlor	ND			ND		ug/L				NC	14
Metolachlor	ND			ND		ug/L				NC	14
Metribuzin	ND			ND		ug/L				NC	24
Molinate	ND			ND		ug/L				NC	16
Naphthalene	ND			ND		ug/L				NC	46
Parathion	ND			ND		ug/L				NC	20
Phenanthrene	ND			ND		ug/L				NC	14
Propachlor	ND			ND		ug/L				NC	12
Pyrene	ND			ND		ug/L				NC	15
Simazine	ND			ND		ug/L				NC	21
Terbacil	ND			ND		ug/L				NC	22
Thiobencarb	ND			ND		ug/L				NC	11
Total Permethrin (mixed isomers)	ND			ND		ug/L				NC	
trans-Nonachlor	ND			ND		ug/L				NC	17
Trifluralin	ND			ND		ug/L				NC	19
Pendimethalin (Penoxaline)	ND			ND		ug/L				NC	30
Terbuthylazine	ND			ND		ug/L				NC	30
1-Methylnaphthalene	ND			ND		ug/L				NC	20
2-Methylnaphthalene	ND			ND		ug/L				NC	20
cis-Permethrin	ND			ND		ug/L				NC	30
trans-Permethrin	ND			ND		ug/L				NC	30

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
2-Nitro-m-xylene	*105*		*70 - 130*
Triphenylphosphate	*106*		*70 - 130*
Perylene-d12	*94*		*70 - 130*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 810-52342/1-A
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52342

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 810-52342/1-A
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 52342

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluorobutanoic acid (PFBA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoropentanoic acid (PFPeA)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoroheptanesulfonic acid (PFHpS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1
Perfluoropentanesulfonic acid (PFPeS)	ND		2.0		ng/L		03/21/23 06:08	03/22/23 17:27	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*85*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C6 PFDA	*94*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C5 PFHxA	*96*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C4 PFHpA	*95*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C8 PFOA	*96*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C9 PFNA	*96*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C7 PFUnA	*93*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C2 PFDoA	*93*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C4 PFBA	*96*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C5 PFPeA	*95*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C3 PFBS	*95*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C3 PFHxS	*96*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C8 PFOS	*93*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C2-4:2-FTS	*97*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C2-6:2-FTS	*96*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*
13C2-8:2-FTS	*98*		*50 - 200*	*03/21/23 06:08*	*03/22/23 17:27*	*1*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LLCS 810-52342/2-A
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52342

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	1.89	1.66	J	ng/L		88	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	1.87	1.66	J	ng/L		89	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	1.73	J	ng/L		92	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.91	J	ng/L		96	50 - 150
Perfluorobutanesulfonic acid (PFBS)	1.78	1.63	J	ng/L		92	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	1.84	J	ng/L		92	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	1.83	1.69	J	ng/L		93	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	1.86	J	ng/L		93	50 - 150
Perfluorononanoic acid (PFNA)	2.00	1.80	J	ng/L		90	50 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	1.79	J	ng/L		97	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	1.90	J	ng/L		95	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	1.87	J	ng/L		94	50 - 150
Perfluorobutanoic acid (PFBA)	2.00	2.10		ng/L		105	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	1.92	1.91	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.88	1.87	J	ng/L		100	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.90	1.96	J	ng/L		103	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.00	2.01		ng/L		101	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	1.78	1.66	J	ng/L		93	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	2.00	1.82	J	ng/L		91	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	2.00	1.78	J	ng/L		89	50 - 150
Perfluoropentanoic acid (PFPeA)	2.00	1.98	J	ng/L		99	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	1.91	1.79	J	ng/L		94	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.70	J	ng/L		91	50 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C3 HFPO-DA	*97*		*50 - 200*
13C6 PFDA	*99*		*50 - 200*
13C5 PFHxA	*100*		*50 - 200*
13C4 PFHpA	*101*		*50 - 200*
13C8 PFOA	*101*		*50 - 200*
13C9 PFNA	*103*		*50 - 200*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: LLCS 810-52342/2-A
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 52342

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C7 PFUnA	*97*		*50 - 200*
13C2 PFDoA	*97*		*50 - 200*
13C4 PFBA	*100*		*50 - 200*
13C5 PFPeA	*99*		*50 - 200*
13C3 PFBS	*100*		*50 - 200*
13C3 PFHxS	*100*		*50 - 200*
13C8 PFOS	*99*		*50 - 200*
13C2-4:2-FTS	*101*		*50 - 200*
13C2-6:2-FTS	*100*		*50 - 200*
13C2-8:2-FTS	*101*		*50 - 200*

Lab Sample ID: 810-54761-C-19-A LMS
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52342

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1.79	1.53	J	ng/L		86	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		1.77	1.63	J	ng/L		92	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		1.79	1.58	J	ng/L		88	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		1.90	2.00		ng/L		105	50 - 150
Perfluorobutanesulfonic acid (PFBS)	ND		1.68	1.51	J	ng/L		90	50 - 150
Perfluorodecanoic acid (PFDA)	ND		1.90	1.82	J	ng/L		96	50 - 150
Perfluorododecanoic acid (PFDoA)	ND		1.90	1.89	J	ng/L		100	50 - 150
Perfluoroheptanoic acid (PFHpA)	ND		1.90	1.72	J	ng/L		91	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	ND		1.73	1.51	J	ng/L		87	50 - 150
Perfluorohexanoic acid (PFHxA)	ND		1.90	2.00		ng/L		105	50 - 150
Perfluorononanoic acid (PFNA)	ND		1.90	1.75	J	ng/L		92	50 - 150
Perfluorooctanesulfonic acid (PFOS)	ND		1.76	1.74	J	ng/L		99	50 - 150
Perfluorooctanoic acid (PFOA)	ND		1.90	1.85	J	ng/L		98	50 - 150
Perfluoroundecanoic acid (PFUnA)	ND		1.90	1.81	J	ng/L		96	50 - 150
Perfluorobutanoic acid (PFBA)	ND		1.90	2.34		ng/L		124	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND		1.82	1.87	J	ng/L		103	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND		1.78	1.84	J	ng/L		104	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND		1.81	1.92		ng/L		106	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND		1.90	1.73	J	ng/L		91	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND		1.69	1.56	J	ng/L		92	50 - 150

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 810-54761-C-19-A LMS
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 52342

Analyte	Sample Result	Sample Qualifier	Spike Added	LMS Result	LMS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND		1.90	1.77	J	ng/L		93	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND		1.90	1.62	J	ng/L		85	50 - 150
Perfluoropentanoic acid (PFPeA)	ND		1.90	1.98		ng/L		104	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	ND		1.81	1.69	J	ng/L		94	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	ND		1.78	1.53	J	ng/L		86	50 - 150

Isotope Dilution	*LMS %Recovery*	*LMS Qualifier*	*Limits*
13C3 HFPO-DA	*80*		*50 - 200*
13C6 PFDA	*90*		*50 - 200*
13C5 PFHxA	*88*		*50 - 200*
13C4 PFHpA	*88*		*50 - 200*
13C8 PFOA	*89*		*50 - 200*
13C9 PFNA	*91*		*50 - 200*
13C7 PFUnA	*89*		*50 - 200*
13C2 PFDoA	*89*		*50 - 200*
13C4 PFBA	*93*		*50 - 200*
13C5 PFPeA	*95*		*50 - 200*
13C3 PFBS	*99*		*50 - 200*
13C3 PFHxS	*102*		*50 - 200*
13C8 PFOS	*96*		*50 - 200*
13C2-4:2-FTS	*100*		*50 - 200*
13C2-6:2-FTS	*112*		*50 - 200*
13C2-8:2-FTS	*107*		*50 - 200*

Lab Sample ID: 380-38733-B-1-A DU
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 52342

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		ND		ng/L		NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		ND		ng/L		NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		ND		ng/L		NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		ND		ng/L		NC	30
Perfluorobutanesulfonic acid (PFBS)	ND		ND		ng/L		NC	30
Perfluorodecanoic acid (PFDA)	ND		ND		ng/L		NC	30
Perfluorododecanoic acid (PFDoA)	ND		ND		ng/L		NC	30
Perfluoroheptanoic acid (PFHpA)	ND		ND		ng/L		NC	30
Perfluorohexanesulfonic acid (PFHxS)	ND		ND		ng/L		NC	30
Perfluorohexanoic acid (PFHxA)	ND		ND		ng/L		NC	30

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: 380-38733-B-1-A DU
Matrix: Water
Analysis Batch: 52440

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 52342

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Perfluorononanoic acid (PFNA)	ND			ND		ng/L				NC	30
Perfluorooctanesulfonic acid (PFOS)	ND			ND		ng/L				NC	30
Perfluorooctanoic acid (PFOA)	ND			ND		ng/L				NC	30
Perfluoroundecanoic acid (PFUnA)	ND			ND		ng/L				NC	30
Perfluorobutanoic acid (PFBA)	ND			ND		ng/L				NC	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	ND			ND		ng/L				NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	ND			ND		ng/L				NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	ND			ND		ng/L				NC	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND			ND		ng/L				NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	ND			ND		ng/L				NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND			ND		ng/L				NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND			ND		ng/L				NC	30
Perfluoropentanoic acid (PFPeA)	ND			ND		ng/L				NC	30
Perfluoroheptanesulfonic acid (PFHpS)	ND			ND		ng/L				NC	30
Perfluoropentanesulfonic acid (PFPeS)	ND			ND		ng/L				NC	30

Isotope Dilution	*DU %Recovery*	*DU Qualifier*	*Limits*
13C3 HFPO-DA	*86*		*50 - 200*
13C6 PFDA	*96*		*50 - 200*
13C5 PFHxA	*94*		*50 - 200*
13C4 PFHpA	*95*		*50 - 200*
13C8 PFOA	*96*		*50 - 200*
13C9 PFNA	*98*		*50 - 200*
13C7 PFUnA	*93*		*50 - 200*
13C2 PFDoA	*91*		*50 - 200*
13C4 PFBA	*50*		*50 - 200*
13C5 PFPeA	*93*		*50 - 200*
13C3 PFBS	*94*		*50 - 200*
13C3 PFHxS	*94*		*50 - 200*
13C8 PFOS	*94*		*50 - 200*
13C2-4:2-FTS	*90*		*50 - 200*
13C2-6:2-FTS	*109*		*50 - 200*
13C2-8:2-FTS	*101*		*50 - 200*

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MBL 810-50391/1-A
Matrix: Water
Analysis Batch: 50488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50391

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorodecanoic acid (PFDA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorohexanoic acid (PFHxA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorononanoic acid (PFNA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorooctanoic acid (PFOA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorotetradecanoic acid (PFTA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
Perfluorotridecanoic acid (PFTrDA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		2.0		ng/L		03/06/23 06:52	03/07/23 13:06	1

Surrogate	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*100*		*70 - 130*	*03/06/23 06:52*	*03/07/23 13:06*	*1*
13C2 PFDA	*91*		*70 - 130*	*03/06/23 06:52*	*03/07/23 13:06*	*1*
d5-NEtFOSAA	*93*		*70 - 130*	*03/06/23 06:52*	*03/07/23 13:06*	*1*

Lab Sample ID: LCS 810-50391/3-A
Matrix: Water
Analysis Batch: 50488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	200	186		ng/L		93	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	200	197		ng/L		98	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	200	204		ng/L		102	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	200	200		ng/L		100	70 - 130
Perfluorobutanesulfonic acid (PFBS)	200	178		ng/L		89	70 - 130
Perfluorodecanoic acid (PFDA)	200	191		ng/L		96	70 - 130
Perfluorododecanoic acid (PFDoA)	200	192		ng/L		96	70 - 130
Perfluoroheptanoic acid (PFHpA)	200	202		ng/L		101	70 - 130

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: LCS 810-50391/3-A
Matrix: Water
Analysis Batch: 50488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	200	200		ng/L		100	70 - 130
Perfluorohexanoic acid (PFHxA)	200	195		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	200	198		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	200	199		ng/L		100	70 - 130
Perfluorooctanoic acid (PFOA)	200	203		ng/L		102	70 - 130
Perfluoroundecanoic acid (PFUnA)	200	191		ng/L		96	70 - 130
Perfluorotetradecanoic acid (PFTA)	200	178		ng/L		89	70 - 130
Perfluorotridecanoic acid (PFTrDA)	200	178		ng/L		89	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	200	187		ng/L		94	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	200	190		ng/L		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C2 PFHxA	*100*		*70 - 130*
13C2 PFDA	*100*		*70 - 130*
d5-NEtFOSAA	*93*		*70 - 130*

Lab Sample ID: LLCS 810-50391/2-A
Matrix: Water
Analysis Batch: 50488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50391

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	2.00	1.97	J	ng/L		98	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	2.00	2.06		ng/L		103	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.00	2.16		ng/L		108	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	2.00	1.72	J	ng/L		86	50 - 150
Perfluorobutanesulfonic acid (PFBS)	2.00	1.98	J	ng/L		99	50 - 150
Perfluorodecanoic acid (PFDA)	2.00	2.11		ng/L		106	50 - 150
Perfluorododecanoic acid (PFDoA)	2.00	2.06		ng/L		103	50 - 150
Perfluoroheptanoic acid (PFHpA)	2.00	2.28		ng/L		114	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.00	2.20		ng/L		110	50 - 150
Perfluorohexanoic acid (PFHxA)	2.00	2.33		ng/L		116	50 - 150
Perfluorononanoic acid (PFNA)	2.00	2.28		ng/L		114	50 - 150
Perfluorooctanesulfonic acid (PFOS)	2.00	2.19		ng/L		110	50 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.27		ng/L		114	50 - 150
Perfluoroundecanoic acid (PFUnA)	2.00	2.21		ng/L		110	50 - 150

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: LLCS 810-50391/2-A
Matrix: Water
Analysis Batch: 50488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50391

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorotetradecanoic acid (PFTA)	2.00	1.73	J	ng/L		86	50 - 150
Perfluorotridecanoic acid (PFTrDA)	2.00	2.02		ng/L		101	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.11		ng/L		105	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.01		ng/L		100	50 - 150

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C2 PFHxA	*102*		*70 - 130*
13C2 PFDA	*100*		*70 - 130*
d5-NEtFOSAA	*98*		*70 - 130*

Lab Sample ID: 380-38602-1 MS
Matrix: Drinking Water
Analysis Batch: 50488

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 50391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		96.3	80.2		ng/L		83	70 - 130
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND		96.3	87.1		ng/L		90	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND		96.3	89.8		ng/L		93	70 - 130
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND		96.3	88.5		ng/L		92	70 - 130
Perfluorobutanesulfonic acid (PFBS)	ND		96.3	96.4		ng/L		100	70 - 130
Perfluorodecanoic acid (PFDA)	ND		96.3	86.7		ng/L		90	70 - 130
Perfluorododecanoic acid (PFDoA)	ND		96.3	87.6		ng/L		91	70 - 130
Perfluoroheptanoic acid (PFHpA)	ND		96.3	89.0		ng/L		92	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	ND		96.3	87.9		ng/L		91	70 - 130
Perfluorohexanoic acid (PFHxA)	ND		96.3	98.7		ng/L		103	70 - 130
Perfluorononanoic acid (PFNA)	ND		96.3	95.0		ng/L		99	70 - 130
Perfluorooctanesulfonic acid (PFOS)	ND		96.3	92.1		ng/L		96	70 - 130
Perfluorooctanoic acid (PFOA)	ND		96.3	96.0		ng/L		100	70 - 130
Perfluoroundecanoic acid (PFUnA)	ND		96.3	93.3		ng/L		97	70 - 130
Perfluorotetradecanoic acid (PFTA)	ND		96.3	83.9		ng/L		87	70 - 130
Perfluorotridecanoic acid (PFTrDA)	ND		96.3	81.2		ng/L		84	70 - 130
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		96.3	98.3		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		96.3	88.9		ng/L		92	70 - 130

Method: 537.1 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: 380-38602-1 MS
Matrix: Drinking Water
Analysis Batch: 50488

Client Sample ID: MOANALUA WELLS (331-223-TP202)
Prep Type: Total/NA
Prep Batch: 50391

Surrogate	MS %Recovery	MS Qualifier	Limits
13C2 PFHxA	106		70 - 130
13C2 PFDA	95		70 - 130
d5-NEtFOSAA	102		70 - 130

Lab Sample ID: 550-198205-B-1-A DU
Matrix: Water
Analysis Batch: 50488

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 50391

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND			ND		ng/L				NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid(9Cl-PF3ONS)	ND			ND		ng/L				NC	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND			ND		ng/L				NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA/GenX)	ND			ND		ng/L				NC	30
Perfluorobutanesulfonic acid (PFBS)	ND			ND		ng/L				NC	30
Perfluorodecanoic acid (PFDA)	ND			ND		ng/L				NC	30
Perfluorododecanoic acid (PFDoA)	ND			ND		ng/L				NC	30
Perfluoroheptanoic acid (PFHpA)	ND			ND		ng/L				NC	30
Perfluorohexanesulfonic acid (PFHxS)	ND			ND		ng/L				NC	30
Perfluorohexanoic acid (PFHxA)	ND			ND		ng/L				NC	30
Perfluorononanoic acid (PFNA)	ND			ND		ng/L				NC	30
Perfluorooctanesulfonic acid (PFOS)	ND			ND		ng/L				NC	30
Perfluorooctanoic acid (PFOA)	ND			ND		ng/L				NC	30
Perfluoroundecanoic acid (PFUnA)	ND			ND		ng/L				NC	30
Perfluorotetradecanoic acid (PFTA)	ND			ND		ng/L				NC	30
Perfluorotridecanoic acid (PFTrDA)	ND			ND		ng/L				NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND			ND		ng/L				NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND			ND		ng/L				NC	30

Surrogate	DU %Recovery	DU Qualifier	Limits
13C2 PFHxA	104		70 - 130
13C2 PFDA	98		70 - 130
d5-NEtFOSAA	101		70 - 130

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

Lab Sample ID: 104302-B1
Matrix: BlankMatrix
Analysis Batch: O-40138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-40138_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Acenaphthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Acenaphthylene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Anthracene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Biphenyl	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Chrysene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Dibenzothiophene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		02/24/23 00:00	03/04/23 17:28	1
Fluoranthene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Fluorene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Naphthalene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Perylene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Phenanthrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1
Pyrene	ND		0.005	0.001	µg/L		02/24/23 00:00	03/04/23 17:28	1

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
(d10-Acenaphthene)	*85*		*27 - 133*	*02/24/23 00:00*	*03/04/23 17:28*	*1*
(d10-Phenanthrene)	*86*		*43 - 129*	*02/24/23 00:00*	*03/04/23 17:28*	*1*
(d12-Chrysene)	*85*		*52 - 144*	*02/24/23 00:00*	*03/04/23 17:28*	*1*
(d12-Perylene)	*83*		*36 - 161*	*02/24/23 00:00*	*03/04/23 17:28*	*1*
(d8-Naphthalene)	*78*		*25 - 125*	*02/24/23 00:00*	*03/04/23 17:28*	*1*

Lab Sample ID: 104302-BS1
Matrix: BlankMatrix
Analysis Batch: O-40138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40138_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.413		µg/L		83	31 - 128
1-Methylphenanthrene	0.5	0.436		µg/L		87	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.429		µg/L		86	55 - 122
2,6-Dimethylnaphthalene	0.5	0.423		µg/L		85	48 - 120
2-Methylnaphthalene	0.5	0.407		µg/L		81	47 - 130
Acenaphthene	0.5	0.421		µg/L		84	53 - 131
Acenaphthylene	0.5	0.418		µg/L		84	43 - 140
Anthracene	0.5	0.429		µg/L		86	58 - 135

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

Lab Sample ID: 104302-BS1
Matrix: BlankMatrix
Analysis Batch: O-40138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-40138_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benz[a]anthracene	0.5	0.408		µg/L		82	55 - 145
Benzo[a]pyrene	0.5	0.406		µg/L		81	51 - 143
Benzo[b]fluoranthene	0.5	0.444		µg/L		89	46 - 165
Benzo[e]pyrene	0.5	0.432		µg/L		86	42 - 152
Benzo[g,h,i]perylene	0.5	0.434		µg/L		87	63 - 133
Benzo[k]fluoranthene	0.5	0.429		µg/L		86	56 - 145
Biphenyl	0.5	0.417		µg/L		83	56 - 119
Chrysene	0.5	0.405		µg/L		81	56 - 141
Dibenz[a,h]anthracene	0.5	0.521		µg/L		104	55 - 150
Dibenzo[a,l]pyrene	0.5	0.42		µg/L		84	50 - 150
Dibenzothiophene	0.5	0.428		µg/L		86	46 - 126
Disalicylidenepropanediamine	50	43.7		µg/L		87	50 - 150
Fluoranthene	0.5	0.433		µg/L		87	60 - 146
Fluorene	0.5	0.428		µg/L		86	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.466		µg/L		93	50 - 151
Naphthalene	0.5	0.399		µg/L		80	41 - 126
Perylene	0.5	0.407		µg/L		81	48 - 141
Phenanthrene	0.5	0.43		µg/L		86	67 - 127
Pyrene	0.5	0.434		µg/L		87	54 - 156

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
(d10-Acenaphthene)	*88*		*27 - 133*
(d10-Phenanthrene)	*89*		*43 - 129*
(d12-Chrysene)	*83*		*52 - 144*
(d12-Perylene)	*89*		*36 - 161*
(d8-Naphthalene)	*82*		*25 - 125*

Lab Sample ID: 104302-BS2
Matrix: BlankMatrix
Analysis Batch: O-40138

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40138_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.386		µg/L		77	31 - 128	8	30
1-Methylphenanthrene	0.5	0.42		µg/L		84	66 - 127	4	30
2,3,5-Trimethylnaphthalene	0.5	0.405		µg/L		81	55 - 122	6	30
2,6-Dimethylnaphthalene	0.5	0.391		µg/L		78	48 - 120	9	30
2-Methylnaphthalene	0.5	0.384		µg/L		77	47 - 130	5	30
Acenaphthene	0.5	0.405		µg/L		81	53 - 131	4	30
Acenaphthylene	0.5	0.397		µg/L		79	43 - 140	6	30
Anthracene	0.5	0.417		µg/L		83	58 - 135	4	30
Benz[a]anthracene	0.5	0.397		µg/L		79	55 - 145	4	30
Benzo[a]pyrene	0.5	0.402		µg/L		80	51 - 143	1	30
Benzo[b]fluoranthene	0.5	0.43		µg/L		86	46 - 165	3	30
Benzo[e]pyrene	0.5	0.41		µg/L		82	42 - 152	5	30
Benzo[g,h,i]perylene	0.5	0.419		µg/L		84	63 - 133	4	30
Benzo[k]fluoranthene	0.5	0.399		µg/L		80	56 - 145	7	30
Biphenyl	0.5	0.395		µg/L		79	56 - 119	5	30
Chrysene	0.5	0.381		µg/L		76	56 - 141	6	30

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

Lab Sample ID: 104302-BS2
Matrix: BlankMatrix
Analysis Batch: O-40138

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-40138_P

Analyte			Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dibenz[a,h]anthracene			0.5	0.49		µg/L		98	55 - 150	6	30
Dibenzo[a,l]pyrene			0.5	0.417		µg/L		83	50 - 150	1	30
Dibenzothiophene			0.5	0.412		µg/L		82	46 - 126	5	30
Disalicylidenepropanediamine			50	49.2		µg/L		98	50 - 150	12	30
Fluoranthene			0.5	0.42		µg/L		84	60 - 146	4	30
Fluorene			0.5	0.413		µg/L		83	58 - 131	4	30
Indeno[1,2,3-cd]pyrene			0.5	0.44		µg/L		88	50 - 151	6	30
Naphthalene			0.5	0.375		µg/L		75	41 - 126	6	30
Perylene			0.5	0.376		µg/L		75	48 - 141	8	30
Phenanthrene			0.5	0.419		µg/L		84	67 - 127	2	30
Pyrene			0.5	0.415		µg/L		83	54 - 156	5	30

Surrogate	*LCS DUP %Recovery*	*LCS DUP Qualifier*	*Limits*
(d10-Acenaphthene)	*84*		*27 - 133*
(d10-Phenanthrene)	*86*		*43 - 129*
(d12-Chrysene)	*81*		*52 - 144*
(d12-Perylene)	*84*		*36 - 161*
(d8-Naphthalene)	*78*		*25 - 125*

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

Lab Sample ID: 23VGH7B08B
Matrix: WATER
Analysis Batch: 23VGH7B08

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.020		mg/L			02/25/23 12:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOFLUOROBENZENE					*02/25/23 12:33*	*1*

Lab Sample ID: 23VGH7B08L
Matrix: WATER
Analysis Batch: 23VGH7B08

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
GASOLINE			0.500	0.450		mg/L		90	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOFLUOROBENZENE	*109*		*70 - 130*

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

Lab Sample ID: 23DSC005WB
Matrix: WATER
Analysis Batch: 23DSC005W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			03/06/23 17:08	1
MOTOR OIL	ND	U	0.050		mg/L			03/06/23 17:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
BROMOBENZENE					*03/06/23 17:08*	*1*
HEXACOSANE					*03/06/23 17:08*	*1*

Lab Sample ID: 23DSC005WL
Matrix: WATER
Analysis Batch: 23DSC005W

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
DIESEL			2.50	2.88		mg/L		115	50 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
BROMOBENZENE	*98*		*60 - 130*
HEXACOSANE	*110*		*60 - 130*

GC/MS Semi VOA

Prep Batch: 49811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LLCS 810-49811/3-A	Lab Control Sample	Total/NA	Water	525.2	

Prep Batch: 50567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	
MB 810-50567/1-A	Method Blank	Total/NA	Water	525.2	
LCS 810-50567/2-A	Lab Control Sample	Total/NA	Water	525.2	
810-54541-O-1-A MS	Matrix Spike	Total/NA	Water	525.2	
810-54983-B-1-A DU	Duplicate	Total/NA	Water	525.2	

Analysis Batch: 50704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	525.2	50567
MB 810-50567/1-A	Method Blank	Total/NA	Water	525.2	50567
LCS 810-50567/2-A	Lab Control Sample	Total/NA	Water	525.2	50567
LLCS 810-49811/3-A	Lab Control Sample	Total/NA	Water	525.2	49811
810-54541-O-1-A MS	Matrix Spike	Total/NA	Water	525.2	50567
810-54983-B-1-A DU	Duplicate	Total/NA	Water	525.2	50567

Analysis Batch: 51384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 810-50567/1-A	Method Blank	Total/NA	Water	525.2	50567

LCMS

Prep Batch: 50391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
MBL 810-50391/1-A	Method Blank	Total/NA	Water	537.1 DW	
LCS 810-50391/3-A	Lab Control Sample	Total/NA	Water	537.1 DW	
LLCS 810-50391/2-A	Lab Control Sample	Total/NA	Water	537.1 DW	
380-38602-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1 DW	
550-198205-B-1-A DU	Duplicate	Total/NA	Water	537.1 DW	

Analysis Batch: 50488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	50391
MBL 810-50391/1-A	Method Blank	Total/NA	Water	537.1	50391
LCS 810-50391/3-A	Lab Control Sample	Total/NA	Water	537.1	50391
LLCS 810-50391/2-A	Lab Control Sample	Total/NA	Water	537.1	50391
380-38602-1 MS	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	537.1	50391
550-198205-B-1-A DU	Duplicate	Total/NA	Water	537.1	50391

Prep Batch: 52342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	
MBL 810-52342/1-A	Method Blank	Total/NA	Water	533	
LLCS 810-52342/2-A	Lab Control Sample	Total/NA	Water	533	
810-54761-C-19-A LMS	Matrix Spike	Total/NA	Water	533	
380-38733-B-1-A DU	Duplicate	Total/NA	Water	533	

LCMS

Analysis Batch: 52440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	533	52342
MBL 810-52342/1-A	Method Blank	Total/NA	Water	533	52342
LLCS 810-52342/2-A	Lab Control Sample	Total/NA	Water	533	52342
810-54761-C-19-A LMS	Matrix Spike	Total/NA	Water	533	52342
380-38733-B-1-A DU	Duplicate	Total/NA	Water	533	52342

Subcontract

Analysis Batch: O-40138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-40138_P
104302-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40138_P
104302-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40138_P
104302-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-40138_P

Analysis Batch: 23DSC005W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 LL DRO/MRO	
23DSC005WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO	
23DSC005WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO	

Analysis Batch: 23VGH7B08

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-38602-2	TB:MOANALUA WELLS (331-223-TP202)	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VGH7B08B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VGH7B08L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-40138_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-38602-1	MOANALUA WELLS (331-223-TP202)	Total/NA	Drinking Water	EPA_625	
104302-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
104302-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
104302-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

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

Job ID: 380-38602-1

Client Sample ID: MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-38602-1
Matrix: Drinking Water
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	525.2			50567	BS	EA SB	03/07/23 08:58
Total/NA	Analysis	525.2		1	50704	JB	EA SB	03/08/23 01:33
Total/NA	Prep	533			52342	NR	EA SB	03/21/23 06:08
Total/NA	Analysis	533		1	52440	CM	EA SB	03/22/23 19:01
Total/NA	Prep	537.1 DW			50391	AD	EA SB	03/06/23 06:52
Total/NA	Analysis	537.1		1	50488	MH	EA SB	03/07/23 14:00
Total/NA	Prep	EPA_625		1	O-40138_P			02/24/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-40138	YC		03/05/23 03:53
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7B08	SCerva		02/25/23 14:25
Total/NA	Analysis	8015 LL DRO/MRO		1	23DSC005W	SDees		03/06/23 18:59

Client Sample ID: TB:MOANALUA WELLS (331-223-TP202)

Lab Sample ID: 380-38602-2
Matrix: Water
Date Collected: 02/22/23 09:27
Date Received: 02/23/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VGH7B08	SCerva		02/25/23 15:03

Laboratory References:

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

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

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

Job ID: 380-38602-1

Laboratory: Eurofins Eaton Analytical South Bend

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

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-24
Alabama	State	40700	06-30-23
Alaska	State	IN00035	06-30-23
Arizona	State	AZ0432	07-26-23
Arkansas (DW)	State	EPA IN00035	06-30-23
California	State	2920	06-30-23
Colorado	State	IN00035	02-29-24
Connecticut	State	PH-0132	03-31-22 *
Delaware (DW)	State	IN00035	06-30-23
Florida	NELAP	E87775	06-30-23
Georgia (DW)	State	929	06-30-23
Hawaii	State	IN035	06-30-23
Idaho (DW)	State	IN00035	12-31-23
IL Dept. of Public Health (Micro)	State	17767	06-30-23
Illinois	NELAP	200001	09-30-23
Indiana	State	C-71-01	12-31-25
Indiana (Micro)	State	M-76-07	12-31-25
Iowa	State	IA Lab #098	11-01-23
Kansas	NELAP	E-10233	10-31-23
Kentucky (DW)	State	KY90056	12-31-23
Louisiana (DW)	State	LA014	12-31-23
Maine	State	IN00035	05-01-23
Maryland	State	209	03-31-23
Massachusetts	State	M-IN035	06-30-23
MI - RadChem Recognition	State	9926	06-30-23
Michigan	State	9926	03-31-23
Minnesota	NELAP	1989807	12-31-23
Mississippi	State	IN00035	06-30-22 *
Missouri	State	880	09-30-24
Montana (DW)	State	CERT0026	01-02-24
Nebraska	State	NE-OS-05-04	06-30-23
Nevada	State	IN000352021-2	07-31-23
New Hampshire	NELAP	2124	11-05-23
New Jersey	NELAP	IN598	06-30-23
New Mexico	State	IN00035	06-30-23
New York	NELAP	11398	03-29-23
North Carolina (DW)	State	18700	07-31-23
North Dakota	State	R-035	06-30-23
Ohio	State	87775	06-30-23
Oklahoma	NELAP	D9508	08-31-23
Oregon	NELAP	4156	09-16-23
Pennsylvania	NELAP	68-00466	04-03-23
Puerto Rico	State	IN00035	04-01-24
Rhode Island	State	LAO00343	12-30-23
South Carolina	State	95005001	06-30-23
South Dakota (DW)	State	IN00035	06-30-23
Tennessee	State	TN02973	06-30-23
Texas	NELAP	T104704187-22-16	12-31-23
Texas	TCEQ Water Supply	TX207	06-30-23
USEPA Reg X SDWA	US Federal Programs	IN00035	08-20-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

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

Job ID: 380-38602-1

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

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

Authority	Program	Identification Number	Expiration Date
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25
Utah	NELAP	IN00035	07-31-23
Vermont	State	VT-8775	11-15-23
Virginia	NELAP	460275	03-14-24
Washington	State	C837	01-01-24
West Virginia (DW)	State	9927 C	12-31-23
Wisconsin	State	999766900	08-31-23
Wisconsin (Micro)	State	10121	12-31-22 *
Wyoming	State	8TMS-L	06-30-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

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

Job ID: 380-38602-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA SB
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA SB
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA SB
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	
525.2	Extraction of Semivolatile Compounds	EPA	EA SB
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA SB
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

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

Job ID: 380-38602-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
380-38602-1	MOANALUA WELLS (331-223-TP202)	Drinking Water	02/22/23 09:27	02/23/23 10:30
380-38602-2	TB:MOANALUA WELLS (331-223-TP202)	Water	02/22/23 09:27	02/23/23 10:30

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

Date: 03-14-2023
EMAX Batch No.: 23B266

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 380-38602

Enclosed is the Laboratory report for samples received on 02/24/23.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-38602-1	B266-01	02/22/23	WATER	TPH GASOLINE
				TPH DIESEL & MOTOR OIL
380-38602-2	B266-02	02/22/23	WATER	TPH GASOLINE

The results are summarized on the following pages.

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

Sincerely yours,

Caspar J. Pang
Laboratory Director

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

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

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

Chain of Custody Record

23B266

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40570.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: EMAX Laboratories Inc		Accreditations Required (See note): State - Hawaii		Job #: 380-38602-1
Address: 3051 Fujita Street, ,	Due Date Requested: 3/9/2023			
City: Torrance	TAT Requested (days):			
State, Zip: CA, 90505				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8015 Gas (Purgeable) LL (EAL))/ 8015 Gas (Purgeable) LL (EAL)	SUB (8015 LL DRO/MRO)/ 8015 LL DRO/MRO	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MOANALUA WELLS (331-223-TP202) (380-38602-1)	2/22/23	09:27 Hawaiian		Water			X	X	6	See Attached Instructions
TB:MOANALUA WELLS (331-223-TP202) (380-38602-2)	2/22/23	09:27 Hawaiian		Water			X		2	See Attached Instructions

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

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

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

	Date/Time	Company		Date/Time	Company
Relinquished by: Chris Board	2-24-23 1010	EMAX	Received by: MANUEL	2-24-23 10:24	DCS
Relinquished by: MANUEL	2-24-23 11:33	DCS	Received by:	02/24/23 11:33	EMAX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3/3.1 UF: -0.2

EMAX LABORATORIES, INC.

REFERENCE: EMAX-SM02 Rev. 12

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 23B266
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Jocelyne Solis-Ramos
☐ EMAX Courier ☑ Client Delivery		Date 02/24/23 Time 11:53

COC INSPECTION

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

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition correction factor: -0.2	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.3/3.1 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	(A) - S/N 221052760	B - S/N 210760237	C - S/N _____	D - S/N _____	

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	1	07*	two dates listed - 2/3/23 & 2/22/2023 two times listed - 8:10 & 9:22	R8, R1

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

NOTES/OBSERVATIONS: * out of HT if collected 2/3/23.

SAMPLE MATRIX IS DRINKING WATER? ☐ YES ☐ NO

☐ Continue to next page.

LEGEND:

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

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

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

REVIEWS:

Sample Labeling Jocelyne Solis-Ramos Date 02/24/23 — SRF — Date 2/24/23 — PM — Date 2/27/23

REPORTING CONVENTIONS

DATA QUALIFIERS:

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

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

ACRONYMS AND ABBREVIATIONS:

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

DATES

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-38602

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

SDG#: 23B266

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-38602

SDG : 23B266

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

A total of two(2) water samples were received on 02/24/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VGH7B08B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VGH7B08L/VGH7B08C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in B265-01M/B265-01S. Refer to Matrix QC summary form for details.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
Project : 380-38602

SDG NO. : 23B266
Instrument ID : H7

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VGH7B08B	1	NA	02/25/2312:33	02/25/2312:33	AB25005A	AB25004A	23VGH7B08	Method Blank
LCS1W	VGH7B08L	1	NA	02/25/2313:11	02/25/2313:11	AB25006A	AB25004A	23VGH7B08	Lab Control Sample (LCS)
LCD1W	VGH7B08C	1	NA	02/25/2313:48	02/25/2313:48	AB25007A	AB25004A	23VGH7B08	LCS Duplicate
380-38602-1	B266-01	1	NA	02/25/2314:25	02/25/2314:25	AB25008A	AB25004A	23VGH7B08	Field Sample
380-38602-2	B266-02	1	NA	02/25/2315:03	02/25/2315:03	AB25009A	AB25004A	23VGH7B08	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/22/23 09:27
Project : 380-38602	Date Received: 02/24/23
Batch No. : 23B266	Date Extracted: 02/25/23 14:25
Sample ID : 380-38602-1	Date Analyzed: 02/25/23 14:25
Lab Samp ID: B266-01	Dilution Factor: 1
Lab File ID: AB25008A	Matrix: WATER
Ext Btch ID: 23VGH7B08	% Moisture: NA
Calib. Ref.: AB25004A	Instrument ID: H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0367	0.0400	92	60-140

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

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

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

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/22/23 09:27
Project	: 380-38602	Date Received:	02/24/23
Batch No.	: 23B266	Date Extracted:	02/25/23 15:03
Sample ID	: 380-38602-2	Date Analyzed:	02/25/23 15:03
Lab Samp ID:	B266-02	Dilution Factor:	1
Lab File ID:	AB25009A	Matrix:	WATER
Ext Btch ID:	23VGH7B08	% Moisture:	NA
Calib. Ref.:	AB25004A	Instrument ID:	H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0361	0.0400	90	60-140

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

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

QC SUMMARIES

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

Client : EUROFINS EATON ANALYTICAL	Date Collected: 02/25/23 12:33
Project : 380-38602	Date Received: 02/25/23
Batch No. : 23B266	Date Extracted: 02/25/23 12:33
Sample ID : MBLK1W	Date Analyzed: 02/25/23 12:33
Lab Samp ID: VGH7B08B	Dilution Factor: 1
Lab File ID: AB25005A	Matrix: WATER
Ext Btch ID: 23VGH7B08	% Moisture: NA
Calib. Ref.: AB25004A	Instrument ID: H7

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

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0337	0.0400	84	60-140

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

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-38602
BATCH NO. : 23B266
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VGH7B08B	VGH7B08L	VGH7B08C
LAB FILE ID	: AB25005A	AB25006A	AB25007A
DATE PREPARED	: 02/25/23 12:33	02/25/23 13:11	02/25/23 13:48
DATE ANALYZED	: 02/25/23 12:33	02/25/23 13:11	02/25/23 13:48
PREP BATCH	: 23VGH7B08	23VGH7B08	23VGH7B08
CALIBRATION REF:	AB25004A	AB25004A	AB25004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.450	90	0.500	0.466	93	3	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0437	109	0.0400	0.0444	111	70-130

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

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-38620
BATCH NO. : 23B265
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-38620-1	380-38620-1MS	380-38620-1MSD
LAB SAMPLE ID	: B265-01	B265-01M	B265-01S
LAB FILE ID	: AB25010A	AB25011A	AB25012A
DATE PREPARED	: 02/25/23 15:40	02/25/23 16:17	02/25/23 16:54
DATE ANALYZED	: 02/25/23 15:40	02/25/23 16:17	02/25/23 16:54
PREP BATCH	: 23VGH7B08	23VGH7B08	23VGH7B08
CALIBRATION REF:	AB25004A	AB25004A	AB25004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.510	102	0.500	0.479	96	6	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0462	116	0.0400	0.0442	111	60-140

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

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-38602

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23B266

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-38602

SDG : 23B266

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 02/24/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DSC005WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DSC005WL/DSC005WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
Project : 380-38602

SDG NO. : 23B266
Instrument ID : D5

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DSC005WB	1	NA	03/06/2317:08	03/02/2312:15	LC06010A	LC06004A	23DSC005W	Method Blank
LCS1W	DSC005WL	1	NA	03/06/2317:27	03/02/2312:15	LC06011A	LC06004A	23DSC005W	Lab Control Sample (LCS)
LCD1W	DSC005WC	1	NA	03/06/2317:45	03/02/2312:15	LC06012A	LC06004A	23DSC005W	LCS Duplicate
380-38602-1	B266-01	1	NA	03/06/2318:59	03/02/2312:15	LC06016A	LC06004A	23DSC005W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	02/22/23 09:27
Project	: 380-38602	Date Received:	02/24/23
Batch No.	: 23B266	Date Extracted:	03/02/23 12:15
Sample ID	: 380-38602-1	Date Analyzed:	03/06/23 18:59
Lab Samp ID:	23B266-01	Dilution Factor:	1
Lab File ID:	LC06016A	Matrix:	WATER
Ext Btch ID:	23DSC005W	% Moisture:	NA
Calib. Ref.:	LC06004A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.057	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.512	0.570	90	60-130
Hexacosane	0.160	0.142	112	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 880ml	Final Volume	: 5ml
Prepared by	: POreto	Analyzed by	: SDeeso

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 03/02/23 12:15
Project : 380-38602	Date Received: 03/02/23
Batch No. : 23B266	Date Extracted: 03/02/23 12:15
Sample ID : MBLK1W	Date Analyzed: 03/06/23 17:08
Lab Samp ID: DSC005WB	Dilution Factor: 1
Lab File ID: LC06010A	Matrix: WATER
Ext Btch ID: 23DSC005W	% Moisture: NA
Calib. Ref.: LC06004A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.025	0.012
Motor Oil	ND	0.050	0.025

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.444	0.500	89	60-130
Hexacosane	0.136	0.125	109	60-130

Notes:

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

Reported ND at RL quantitated per pattern recognition.

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-38602
BATCH NO. : 23B266
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: DSC005WB	DSC005WL	DSC005WC
LAB FILE ID	: LC06010A	LC06011A	LC06012A
DATE PREPARED	: 03/02/23 12:15	03/02/23 12:15	03/02/23 12:15
DATE ANALYZED	: 03/06/23 17:08	03/06/23 17:27	03/06/23 17:45
PREP BATCH	: 23DSC005W	23DSC005W	23DSC005W
CALIBRATION REF:	LC06004A	LC06004A	LC06004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.50	2.88	115	2.50	2.74	110	5	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	0.500	0.492	98	0.500	0.487	97	60-130
Hexacosane	0.125	0.137	110	0.125	0.136	109	60-130

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

March 07, 2023

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

Project Name: RED-HILL Project # 38001111 Job # 380-38602-1
Physis Project ID: 1407003-380

Dear Rachelle,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 2/24/2023. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

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

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

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

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

PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-380

RED-HILL Project # 38001111 Job # 380-38602-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
104303	MOANALUA WELLS	331-223-TP202 (380-38602-1)	2/22/2023	9:27	Samplewater	Not Specified

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ABBREVIATIONS and ACRONYMS

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

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QUALITY ASSURANCE SUMMARY

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

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

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

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

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

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

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

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

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

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SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

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

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

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

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PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MD
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

1904 E. Wright Circle Anaheim, CA 92806 (714) 602-5320 fax (714) 602-5321 www.physislabs.com CA ELAP #2769

CASE NARRATIVE

QUALIFIER NOTES

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

ND

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

ANALYTICAL REPORT

PHYSIS Project ID: 1407003-380
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-38602-1

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104303-R1	**MOANALUA WELLS 331-223-TP202**	**Matrix: Samplewater**					**Sampled:**	**22-Feb-23 9:27**		**Received:**	**24-Feb-23**
Disalicylidenepropanediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-40138	24-Feb-23	05-Mar-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 104303-R1	**MOANALUA WELLS 331-223-TP202**	**Matrix: Samplewater**					**Sampled:**	**22-Feb-23**	**9:27**	**Received:**	**24-Feb-23**
(d10-Acenaphthene)	EPA 625.1	% Recovery	82	1			Total		O-40138	24-Feb-23	05-Mar-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	84	1			Total		O-40138	24-Feb-23	05-Mar-23
(d12-Chrysene)	EPA 625.1	% Recovery	82	1			Total		O-40138	24-Feb-23	05-Mar-23
(d12-Perylene)	EPA 625.1	% Recovery	77	1			Total		O-40138	24-Feb-23	05-Mar-23
(d8-Naphthalene)	EPA 625.1	% Recovery	76	1			Total		O-40138	24-Feb-23	05-Mar-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23

PHYSIS Project ID: 1407003-380
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-38602-1

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-40138	24-Feb-23	05-Mar-23

QUALITY CONTROL REPORT

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

PHYSIS Project ID: 1407003-380
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-38602-1

Base/Neutral Extractable Compounds QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104302-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40138		Prepared: 24-Feb-23					Analyzed: 04-Mar-23	
Disalicylidenepropanediamine	Total	ND	1	0.05	0.1	µg/L								
Sample ID: 104302-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40138		Prepared: 24-Feb-23					Analyzed: 04-Mar-23	
Disalicylidenepropanediamine	Total	43.7	1	0.05	0.1	µg/L	50	0	87	50 - 150%	PASS			
Sample ID: 104302-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**					**Received:**	
		Method: EPA 625.1				Batch ID: O-40138		Prepared: 24-Feb-23					Analyzed: 04-Mar-23	
Disalicylidenepropanediamine	Total	49.2	1	0.05	0.1	µg/L	50	0	98	50 - 150%	PASS	12	30 PASS	

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104302-B1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
	Method: EPA 625.1					Batch ID: O-40138		Prepared: 24-Feb-23				Analyzed: 04-Mar-23	
(d10-Acenaphthene)	Total	85	1			% Recovery	100	85	27 - 133%	PASS			
(d10-Phenanthrene)	Total	86	1			% Recovery	100	86	43 - 129%	PASS			
(d12-Chrysene)	Total	85	1			% Recovery	100	85	52 - 144%	PASS			
(d12-Perylene)	Total	83	1			% Recovery	100	83	36 - 161%	PASS			
(d8-Naphthalene)	Total	78	1			% Recovery	100	78	25 - 125%	PASS			
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L							
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthene	Total	ND	1	0.001	0.005	µg/L							
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L							
Anthracene	Total	ND	1	0.001	0.005	µg/L							
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L							
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L							
Benzo[g,h,]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							
D benz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L							
D benzo[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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
D benzothiophene	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 LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS	PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104302-BS1	**QAQC Procedural Blank**					**Matrix: BlankMatrix**		**Sampled:**				**Received:**	
		Method: EPA 625.1				Batch ID: O-40138		Prepared: 24-Feb-23				Analyzed: 04-Mar-23	
(d10-Acenaphthene)	Total	88	1			% Recovery	100	0	88	27 - 133%	PASS		
(d10-Phenanthrene)	Total	89	1			% Recovery	100	0	89	43 - 129%	PASS		
(d12-Chrysene)	Total	83	1			% Recovery	100	0	83	52 - 144%	PASS		
(d12-Perylene)	Total	89	1			% Recovery	100	0	89	36 - 161%	PASS		
(d8-Naphthalene)	Total	82	1			% Recovery	100	0	82	25 - 125%	PASS		
1-Methylnaphthalene	Total	0.413	1	0.001	0.005	µg/L	0.5	0	83	31 - 128%	PASS		
1-Methylphenanthrene	Total	0.436	1	0.001	0.005	µg/L	0.5	0	87	66 - 127%	PASS		
2,3,5-Trimethylnaphthalene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	55 - 122%	PASS		
2,6-Dimethylnaphthalene	Total	0.423	1	0.001	0.005	µg/L	0.5	0	85	48 - 120%	PASS		
2-Methylnaphthalene	Total	0.407	1	0.001	0.005	µg/L	0.5	0	81	47 - 130%	PASS		
Acenaphthene	Total	0.421	1	0.001	0.005	µg/L	0.5	0	84	53 - 131%	PASS		
Acenaphthylene	Total	0.418	1	0.001	0.005	µg/L	0.5	0	84	43 - 140%	PASS		
Anthracene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	58 - 135%	PASS		
Benz[a]anthracene	Total	0.408	1	0.001	0.005	µg/L	0.5	0	82	55 - 145%	PASS		
Benzo[a]pyrene	Total	0.406	1	0.001	0.005	µg/L	0.5	0	81	51 - 143%	PASS		
Benzo[b]fluoranthene	Total	0.444	1	0.001	0.005	µg/L	0.5	0	89	46 - 165%	PASS		
Benzo[e]pyrene	Total	0.432	1	0.001	0.005	µg/L	0.5	0	86	42 - 152%	PASS		
Benzo[g,h,]perylene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	63 - 133%	PASS		
Benzo[k]fluoranthene	Total	0.429	1	0.001	0.005	µg/L	0.5	0	86	56 - 145%	PASS		
Biphenyl	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	56 - 119%	PASS		
Chrysene	Total	0.405	1	0.001	0.005	µg/L	0.5	0	81	56 - 141%	PASS		
D benz[a,h]anthracene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	55 - 150%	PASS		
D benzo[a,l]pyrene	Total	0.42	1	0.001	0.005	µg/L	0.5	0	84	50 - 150%	PASS		

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
D benzothiophene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	46 - 126%	PASS			
Fluoranthene	Total	0.433	1	0.001	0.005	µg/L	0.5	0	87	60 - 146%	PASS			
Fluorene	Total	0.428	1	0.001	0.005	µg/L	0.5	0	86	58 - 131%	PASS			
Indeno[1,2,3-cd]pyrene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	50 - 151%	PASS			
Naphthalene	Total	0.399	1	0.001	0.005	µg/L	0.5	0	80	41 - 126%	PASS			
Perylene	Total	0.407	1	0.001	0.005	µg/L	0.5	0	81	48 - 141%	PASS			
Phenanthrene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	67 - 127%	PASS			
Pyrene	Total	0.434	1	0.001	0.005	µg/L	0.5	0	87	54 - 156%	PASS			

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS	QA CODEc
Sample ID: 104302-BS2	**QAQC Procedural Blank**					**Matrix: BlankMatrix**	**Sampled:**				**Received:**			
		Method: EPA 625.1				Batch ID: O-40138			Prepared: 24-Feb-23			Analyzed: 04-Mar-23		
(d10-Acenaphthene)	Total	84	1			% Recovery	100	0	84	27 - 133%	PASS	5	30	PASS
(d10-Phenanthrene)	Total	86	1			% Recovery	100	0	86	43 - 129%	PASS	3	30	PASS
(d12-Chrysene)	Total	81	1			% Recovery	100	0	81	52 - 144%	PASS	2	30	PASS
(d12-Perylene)	Total	84	1			% Recovery	100	0	84	36 - 161%	PASS	6	30	PASS
(d8-Naphthalene)	Total	78	1			% Recovery	100	0	78	25 - 125%	PASS	5	30	PASS
1-Methylnaphthalene	Total	0.386	1	0.001	0.005	µg/L	0.5	0	77	31 - 128%	PASS	8	30	PASS
1-Methylphenanthrene	Total	0.42	1	0.001	0.005	µg/L	0.5	0	84	66 - 127%	PASS	4	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.405	1	0.001	0.005	µg/L	0.5	0	81	55 - 122%	PASS	6	30	PASS
2,6-Dimethylnaphthalene	Total	0.391	1	0.001	0.005	µg/L	0.5	0	78	48 - 120%	PASS	9	30	PASS
2-Methylnaphthalene	Total	0.384	1	0.001	0.005	µg/L	0.5	0	77	47 - 130%	PASS	5	30	PASS
Acenaphthene	Total	0.405	1	0.001	0.005	µg/L	0.5	0	81	53 - 131%	PASS	4	30	PASS
Acenaphthylene	Total	0.397	1	0.001	0.005	µg/L	0.5	0	79	43 - 140%	PASS	6	30	PASS
Anthracene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	58 - 135%	PASS	4	30	PASS
Benz[a]anthracene	Total	0.397	1	0.001	0.005	µg/L	0.5	0	79	55 - 145%	PASS	4	30	PASS
Benzo[a]pyrene	Total	0.402	1	0.001	0.005	µg/L	0.5	0	80	51 - 143%	PASS	1	30	PASS
Benzo[b]fluoranthene	Total	0.43	1	0.001	0.005	µg/L	0.5	0	86	46 - 165%	PASS	3	30	PASS
Benzo[e]pyrene	Total	0.41	1	0.001	0.005	µg/L	0.5	0	82	42 - 152%	PASS	5	30	PASS
Benzo[g,h,]perylene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	63 - 133%	PASS	4	30	PASS
Benzo[k]fluoranthene	Total	0.399	1	0.001	0.005	µg/L	0.5	0	80	56 - 145%	PASS	7	30	PASS
Biphenyl	Total	0.395	1	0.001	0.005	µg/L	0.5	0	79	56 - 119%	PASS	5	30	PASS
Chrysene	Total	0.381	1	0.001	0.005	µg/L	0.5	0	76	56 - 141%	PASS	6	30	PASS
D benz[a,h]anthracene	Total	0.49	1	0.001	0.005	µg/L	0.5	0	98	55 - 150%	PASS	6	30	PASS
D benzo[a,l]pyrene	Total	0.417	1	0.001	0.005	µg/L	0.5	0	83	50 - 150%	PASS	1	30	PASS

PHYSIS Project ID: 1407003-380
Client: Eurofins Eaton Analytical
Project: RED-HILL Project # 38001111 Job # 380-38602-1

Polynuclear Aromatic Hydrocarbons QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE LEVEL	SOURCE RESULT	ACCURACY %	ACCURACY LIMITS		PRECISION %	PRECISION LIMITS		QA CODEc
D benzothiophene	Total	0.412	1	0.001	0.005	µg/L	0.5	0	82	46 - 126%	PASS	5	30	PASS	
Fluoranthene	Total	0.42	1	0.001	0.005	µg/L	0.5	0	84	60 - 146%	PASS	4	30	PASS	
Fluorene	Total	0.413	1	0.001	0.005	µg/L	0.5	0	83	58 - 131%	PASS	4	30	PASS	
Indeno[1,2,3-cd]pyrene	Total	0.44	1	0.001	0.005	µg/L	0.5	0	88	50 - 151%	PASS	6	30	PASS	
Naphthalene	Total	0.375	1	0.001	0.005	µg/L	0.5	0	75	41 - 126%	PASS	6	30	PASS	
Perylene	Total	0.376	1	0.001	0.005	µg/L	0.5	0	75	48 - 141%	PASS	8	30	PASS	
Phenanthrene	Total	0.419	1	0.001	0.005	µg/L	0.5	0	84	67 - 127%	PASS	2	30	PASS	
Pyrene	Total	0.415	1	0.001	0.005	µg/L	0.5	0	83	54 - 156%	PASS	5	30	PASS	

TENTATIVELY IDENTIFIED COMPOUNDS

Sample ID: Lab Blank B1_40138

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.7677	5.1274	1111	Anthracene-D10-	1719-06-8	95
10.7679	3.2625	707	Oxalic acid, cyclohexyl pentyl ester	1000309-30-6	88
10.1685	2.1518	466	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	90
10.5756	1.7403	377	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	91
10.1368	1.3649	296	Cyclopentane, 1,2,3,4,5-pentamethyl-	1000152-79-7	87
10.5171	0.6403	139	Octane, 3-methyl-6-methylene-	74630-07-2	82
10.5171	0.5644	122	Pyrrolidine	123-75-1	82
11.1414	0.5301	115	1,5-Heptadien-4-one, 3,3,6-trimethyl-	546-49-6	86
11.1414	0.5131	111	Oxalic acid, cyclohexyl isobutyl ester	1000309-30-4	87

Concentration estimated using the response for Anthracene-d10

Sample ID: 104303

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
35.7689	6.3399	1111	Anthracene-D10-	1517-22-2	93
10.7673	3.8721	679	Cyclobutanecarboxylic acid, 2-propenyl ester	1000282-60-3	86
10.1679	1.1083	194	Cyclopentene, 1,2,3,4,5-pentamethyl-	1000154-28-6	90
10.5206	0.7205	126	Heptane, 2,4-dimethyl-	2213-23-2	84
10.5750	0.7196	126	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	90
67.5140	0.6654	117	Hexanoic acid, 2-ethyl-, oxybis(2,1-ethanediyloxy-2,1-ethanediyl) ester	18268-70-7	92

Concentration estimated using the response for Anthracene-d10

CHAIN OF CUSTODY

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

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40569.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Physis Environmental Laboratories		Accreditations Required (See note): State - Hawaii		Job #: 380-38602-1
Address: 1904 Wright Circle,	Due Date Requested: 3/9/2023			
City: Anaheim	TAT Requested (days):			
State, Zip: CA, 92806				
Phone:	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (625 PAH Physis LL (EAL) + TICs)/ 625 PAH Physis LL (EAL) + TICs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MOANALUA WELLS (331-223-TP202) (380-38602-1)	2/22/23	09:27 Hawaiian		Water			X	2	See Attached Instructions

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-24-23 1010	ECD	[signature]	2-24-23 10:17	DCS
Relinquished by: [signature]	Date/Time: 2-24-23 10:17	Company DCS	Received by: [signature]	Date/Time: 2/24/23 1137	Company Physis
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

PHYSIS
ENVIRONMENTAL LABORATORIES, INC.
Innovative Solutions for Nature

PHYSIS

Project Iteration ID: 1407003-380
Client Name: Eurofins Eaton Analytical
Project Name: RED-HILL Project # 38001111 Job # 380-38602-1
COC Page Number: 2 of 2
Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

1. Initials Received By: RGH
2. Date Received: 2/24/23
3. Time Received: 1137
4. Client Name: Eurofins
5. Courier Information: (Please circle)
   - Client
   - UPS
   - Area Fast
   - ~~DRS~~ DCS
   - FedEx
   - GSO/GLS
   - Ontrac
   - PAMS
   - PHYSIS Driver:
     - i. Start Time:_____
     - ii. End Time:_____
     - iii. Total Mileage:_____
     - iv. Number of Pickups:_____
6. Container Information: (Please put the # of containers or circle none)
   - 1 Cooler
   - __ Styrofoam Cooler
   - ____ Boxes
   - None
   - ___ Carboy(s)
   - __Carboy Trash Can(s)
   - ____ Carboy Cap(s)
   - Other _____
7. What ~~type of~~ ice was used: (Please circle any that apply)
   - Wet Ice
   - Blue Ice
   - Dry Ice
   - Water
   - None
8. Randomly Selected Samples Temperature (°C): 3.6 Used I/R Thermometer # 1-2

Inspection Info

1. Initials Inspected By: RGH

Sample Integrity Upon Receipt:

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

Notes:

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9775-2757.1
Client Contact: Dr. Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 1 of 3
Company: City & County of Honolulu	PWSID:			Job #:

Address: 630 South Beretania Street Chemistry Lab	Due Date Requested:
City: Honolulu	TAT Requested (days):
State, Zip: HI, 96843	Compliance Project: Δ Yes Δ No
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023
Email: RFENSTEMACHER@hbws.org	WO #:
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111
Site: Hawaii	SSOW#:

Analysis Requested

380-38602 COC

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA	Y	N		
MOANALUA WELLS				Water											
AIEA GULCH WELLS PUMP 2				Water											(752A) 2.2/2.1
AIEA WELLS PUMPS 1&2 (260)				Water											FedEx: 771379907275
HALAWA WELLS UNITS 1&2	2/22/23			Water											
MOANALUA WELLS	02/23			Water											(752A) 2.4/2.3
AIEA GULCH WELLS PUMP 2				Water											FedEx: 771379906224
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2				Water											
MOANALUA WELLS	02/22/2023	0927	G	Water			X	X	X	X	X	X	X		
AIEA GULCH WELLS PUMP 2				Water											
AIEA WELLS PUMPS 1&2 (260)				Water											

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx: 771379906945
Relinquished by: [redacted]	Date/Time: 02/22/2023 1400	Company: HBWS	Received by: Mark Urrutia Date/Time: 2/23/23 1030 Company: EEA
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:
Relinquished by:	Date/Time:	Company:	Received by: Date/Time: Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (752A) 2.7/2.6 gel-frozen

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9775-2757.2
Client Contact: Dr. Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 2 of 3
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ Yes Δ No			
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws.org	WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site: Hawaii	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	R	R	RA		RA	Y	N	X	
HALAWA WELLS UNITS 1&2				Water											
MOANALUA WELLS				Water											(752A) 2.2/2.1
AIEA GULCH WELLS PUMP 2				Water											FedEx: 771379907275
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2				Water											(752A) 2.4/2.3
TB MOANALUA WELLS	2/22/2023	0927		Water							X				FedEx: 771379906224
TB AIEA GULCH WELLS PUMP2				Water											
TB AIEA WELLS PUMPS 1&2 (260)				Water											
TB HALAWA WELLS UNITS 1&2				Water											
MOANALUA WELLS				Water											
AIEA GULCH WELLS PUMP 2				Water											

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx: 771379906945

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY	02/22/2023 1400	HBWS	Mark Urrutia	2/23/23 1030	EEA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: (752A) 2.7/2.6 gel-frozen

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

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: BAILEY	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-9775-2757.3
Client Contact: Dr. Ron Fenstemacher	Phone: 808-748-5840	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin:	Page: Page 3 of 3
Company: City & County of Honolulu	PWSID:			Job #:
Address: 630 South Beretania Street Chemistry Lab	Due Date Requested:			
City: Honolulu	TAT Requested (days):			
State, Zip: HI, 96843	Compliance Project: Δ Yes Δ No			
Phone: 808-748-5091(Tel)	PO #: C20525101 exp 05312023			
Email: RFENSTEMACHER@hbws.org	WO #:			
Project Name: RED-HILL/HBWS Sites Event Desc: RUSH Weekly Red Hill	Project #: 38001111			
Site: Hawaii	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	525.2_PREC - (MOD) 525plus Plus TICs	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	537.1_DW_PREC - 537.1 Full List	533 - All Analytes	Total Number of containers	Special Instructions/Note:
			Preservation Code:				R	R	RA		RA	Y	N		
AIEA WELLS PUMPS 1&2 (260)				Water											
HALAWA WELLS UNITS 1&2				Water											(752A) 2.2/2.1
FB: MOANALUA WELLS	02/22/2023	0927		Water								X	X		FedEx: 771379907275
FB: AIEA GULCH WELLS PUMP 2				Water											
FB: AIEA WELLS PUMPS 1&2 (260)				Water											(752A) 2.4/2.3
FB: HALAWA WELLS UNITS 1&2				Water											FedEx: 771379906224

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx: 771379906445

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
BAILEY	Feb 22, 2023 1400	HBWS	Mark Urrutia	2/23/23 1030	FEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: (752A) 2.7/2.6 gel- frozen

4/25/2023

Shipping Order Form - Bottle Order

eurofins | Environment Testing

S380-9775

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

Shipping Order ID: 9775

Ship Via: FedEx

When To Ship: 2/ 6/2023

Due On: 2/6/2023 11:59:00PM

Due After: 2/6/2023 12:00:00 AM

Ship To Information

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

Notes to Bottle/Shipping Department

Pack with Gel Ice.

Please pack as one cooler per site.

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

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

Send only medium to large coolers.

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

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

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

Bottle Order Information

Bottle Order: RUSH RED-HILL WEEKLY
Bottle Order #: 2757
Request From Client: 7/20/2022
Date Order Posted: 7/20/2022 11:12:54AM
Order Status: Ready To Process
Prepared By: Davis Haley
Deliver By Date: ***2/6/2023 11:59:00PM***
Lab Project Number: 38001111
PWSID:

Order Completion Information

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

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
4	2	8	Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	SUBCONTRACT - 625 PAH Physis LL (EAL) + TICs	Water	Normal	625 PAH	
4	4	16	Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Normal		
4	2	8	Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Diesel LL (EAL) and Motor Oil	Water	Normal		
4	2	8	Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	525.2_PREC - (MOD) 525plus Plus TICs	Water	Normal		
4	2	8	VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Acid	SUBCONTRACT - 8015 Gas (Purgeable) LL (EAL)	Water	Trip Blank		
4	3	12	Plastic 250ml - Trizma	Trizma	537.1_DW_PREC - 537.1 Full List	Water	Normal		
4	3	12	Plastic 250ml – Ammonium Acetate	Ammonium Acetate	533 - All Analytes	Water	Normal		
4	1	4	Plastic 250ml - Reagent Water	None		Water	Field Blank		
4	1	4	Plastic 250ml – Ammonium Acetate	Ammonium Acetate		Water	Field Blank		
4	1	4	Plastic 250ml - Reagent Water	None		Water	Field Blank		
4	1	4	Plastic 250ml - Trizma	Trizma		Water	Field Blank		

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

Total Bottle Summary

Bottle Type Description	Preservative	Bottle Count
Amber Glass 1 L - NaThiosulfate 8mL HCL	Sodium Thiosulfate/Hydrochloric Aci	8
Amber Glass 1 liter - Sodium Thiosulfate	Sodium Thiosulfate	8
Amber Glass 1 Liter- Sodium Sulfite/HCl	Sodium Sulfite w/HCl	8
Plastic 250ml - Reagent Water	None	8
Plastic 250ml - Trizma	Trizma	16
Plastic 250ml – Ammonium Acetate	Ammonium Acetate	16
VOA Vial 40mL - NaThiosulfate/HCL	Sodium Thiosulfate/Hydrochloric Aci	8
Voa Vial 40ml - SodiumThio w/HCl-dropper	Sodium Thiosulfate	16
	Total Bottles:	88

Notes to Field Staff:

Scan QR code for field sampler instructions

SAMPLER FOLLOW 2 STAGE FIELD PRESERVATION FOR 8015 and 525.2

Health and Safety Notes:

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

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

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

Eurofins Drinking Water Testing Pomona
941 Corporate Center Drive
Pomona, CA 91768-2642
Phone: 626-386-1100

Chain of Custody Record

eurofins | Environment Testing

4/25/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40578.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Eurofins Eaton Analytical		Accreditations Required (See note): State - Hawaii		Job #: 380-38602-1
Address: 110 S Hill Street,	Due Date Requested: 3/15/2023			
City: South Bend	TAT Requested (days):			
State, Zip: IN, 46617				
Phone: 574-233-4777(Tel) 574-233-8207(Fax)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	525.2_PREC/525.2_Prep (MOD) $25plus Plus TICs	533/533_Prep All Analytes	537.1_DW_PREC/537.1_DW_Prep 537.1 Full List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MOANALUA WELLS (331-223-TP202) (380-38602-1)	2/22/23	09:27 Hawaiian		Water			X	X	X	6	533 + 537 only ppw 02/25/23
FB: MOANALUA WELLS (380-38602-3)	2/22/23	09:27 Hawaiian		Water				X	X	2	

Initial Temp: -0.4
Corrected Temp: 0.4
IR Gun # 28 wet

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

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

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
G.REITNER	02/24/2023 13:40	EEA	Perry Ashley Wright	02/25/23 0900	EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
	Client Provided Sample Container	

Ver: 06/08/2021

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

Chain of Custody Record

eurofins | Environment Testing

4/25/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arada, Rachelle	Carrier Tracking No(s):	COC No: 380-40574.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachelle.Arada@et.eurofinsus.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: Eurofins Eaton Analytical		Accreditations Required (See note): State - Hawaii		Job #: 380-38602-1
Address: 110 S Hill Street, ,	Due Date Requested: 3/15/2023			
City: South Bend	TAT Requested (days):			
State, Zip: IN, 46617				
Phone: 574-233-4777(Tel) 574-233-8207(Fax)	PO #:			
Email:	WO #:			
Project Name: RED-HILL	Project #: 38001111			
Site: Honolulu BWS Sites	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	525.2_PREC/525.2_Prep (MOD) 525plus Plus TICs	533/533_Prep All Analytes	537.1_DW_PREC/537.1_DW_Prep 537.1 Full List	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MOANALUA WELLS (331-223-TP202) (380-38602-1)	2/22/23	09:27 Hawaiian		Water			X	X	X	2	525's only ppw 02/25/23

Initial Temp: -0.8
Corrected Temp: 0.0
IR Gun # 28wet

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

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

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

Relinquished by: G REITMER	Date/Time: 02/24/2023 11:11	Company EEA	Received by: Penny Pehling Wright	Date/Time: 02/25/23 0900	Company EEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: Client Provided Sample Container	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-38602-1

Login Number: 38602
List Number: 1
Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona

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

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-38602-1

Login Number: 38602
List Number: 2
Creator: Pehling-Wright, Penny

List Source: Eurofins Eaton Analytical South Bend
List Creation: 02/27/23 10:18 AM

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